Measuring socio-cultural interaction in Arabic Mediterranean built environment

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ABSTRACT

In this paper, the relationship between socio-culture interaction and built environment was studied utilizing space syntax measurements (correlations between local and global spaces with relationship between connectivity and global integration). Intelligibility and synergy .These correlations were inspected utilizing Space Syntax. The city of AL-Khums was chosen as a case study because this area has had high values of intelligibility and synergy. it was seen there was a solid correlation between local and global integration and additionally between connectivity and global integration.. According to this correlations, a type of planning can increase intelligibility and synergy, interaction, Which in turn is reflected in the evolution of a good relations between inhabitants and visitors in urban spaces, and acceptance of others. The relationships between routes and spaces and their syntactic values are very important issues to find how spaces and streets affect socio-cultural interaction.

Introduction

Researchers have expressed increasingly interested by seeing how built environment influences conduct of individuals and how it can be utilized proactively to impact specific conduct, for example, improving socio-cultural interaction or diminishing felonies. The relevant research extent different fields including design, geography, urban planning, and human science. The outcome is a various arrangement of ideas, hypotheses, and techniques for seeing how built environment improving socio-cultural interaction. These days, the cities

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around the world are experiencing different ways of living. The improvement and the progression of urban zones close by various social changes have enormously extended the multifaceted design(Johnston2000). On the other hand, developments become progressively more an integral part of human action and living spaces, the arrangement of UI and collaborations as for the urban space is a testing task as yet. Sociocultural practices of any general public rely on upon the wish of the general population to keep rehearsing them and the resettlement program impact of such exercises (Abdol Karim and el 2012). As to is in advance in the present circumstances crosswise over urban communities around the globe, one could state that urban communities are popular of more particular spaces that satisfy Sociocultural relations with appropriate execution. One of these areas is public areas or urban landscape space in which people spend their recuperation times. Findings of a research that was done in 2006 on a thousand general spaces around the world demonstrate that four elements are exceptionally viable on the utility of the urban spaces . Initially element is progression of spaces and simple access to them, second component focuses to the movement of the general population in these spaces. The third component alludes to refreshing and attraction of such spaces with the last which is social places that permit social interaction for people in general places (Moeini, 2012). there is a necessity for urban open spaces In local urban level to reduction social stresses by increasing direct interactions and building up phonetic connection. As the city is directed to urban development with unknown identity, due to specific conditions of modern life. Formation and establishment spaces for the people depending social interaction design in public spaces and in particular in cities with different environments would increase the quality of urban environment and decrease the mental stress of the people living in modern cities. The most essential parts of a social framework are activity spaces . Then again, such spaces are significant because they are space where social interaction happens. Accordingly, towns and urban areas need to make particular places where social effectiveness can happen and individuals can freely pick. Past reviews have unmistakably demonstrated that any sort of communicative activity would influence fineness of life and the personal satisfaction. The quality of life within urban context is the outcome of the human interaction with urban environment (Das, 2008). There is a critical relationship between open spaces and the physical personal satisfaction and the physical quality of life. The physical elements and activities at public space offer many advantages to personal satisfaction and quality of life, public interaction, wellbeing, and including good health (Nasution and Zahrah, 2014). Many studies have demonstrated that experience of space in the urban space is straightforwardly influenced by what is seen and how to view it (Lubis and Primasari, 2012). Urban image in human reason in this manner the human practices and behaviors can be oriented through all furniture components to be made in urban places (Lang, 1994). Environment is the condition that employs social support (Laurens, 2012). One approach emphasises the importance of culture in cross-cultural interactions. In this viewpoint, culture matters since people have distinctive qualities and diverse inclinations concerning administration and leadership, that are identified with their cultural foundation (Hofstede, 2001). Studies have demonstrated that national culture impacts an individual's mentality, conduct and convictions (Harrison and Huntington, 2000; Hofstede, 2001; Kirkman et al., 2006.(Also develop a sense of self of individuals

need more Relationships; relationships are important for their ability to help individuals build up a feeling of self. The relational self is the part of an individual's self-idea that comprises of the emotions and convictions that one has in regards to oneself that creates in light of collaborations with others. (Andersen and Chen 2002).

Sociocultural system

The expression "sociocultural system" includes three ideas: culture, society, and system. A culture is the educated practices that are shared by the individuals from a general public, together with the material results of such behaviors. A society is various associated life forms of similar species. The words "society" and "culture" are combined together to shape the term "sociocultural". A system is "a gathering of parts which react with each other to work in integrated shape. Cognitive expansion happens in social interaction with other, social socio-culture interaction is a main factor in expansion of perception. The dynamic relationships between social and spatial processes are key drivers of the economic, cultural and environmental conditions of the built environment.

Social Interaction

Architecture with urban planning can facilitate social interaction in the creation of open space plazas, more connected spaces and support integration within cities Numerous squares were immense underutilized spaces, effective courts had a lot of sitting spots and included different components, for example, wellsprings, food stands, walking and sitting activities, and watch (Whyte, 1988), making of new squares that to be prevalent places for agreeable social communication (Gifford, 2002). Hallways have a tendency to debilitate social association, while round rooms have a tendency to energize social connection (Osmond, 1957(The interaction is made by making compact urban zones with a blend of activities, buildings and structures (Talen, 2002). Researchers have contended that the organize of space regulates behavior(Lessig, 1999). Urban areas require the spaces that satisfy Social–cultural relations and have reasonable performance. For example In middle east, teashops, lines, squares, and shrines were regarded as main urban spaces. Likewise Traditional markets (bazaar) which are place of social interaction represented urbanism, evolution of personality, identity and social existence of the city and gathering images of the residents and reversal of tribal and social values of the urbanization(Masoudi, 2001). There are a many connections amongst space and the individual and his personality (Gharib, 1997, Taghi zadeh, 2002, Habib, 2006). Typically, urban public places in contemporary places of middle east can be divided into two groups:

Traditional places such as shrines, gardens, and modern spaces such as parks, sale centers, and cultural centers. Also, urban places are classified into some groups due to the functional level, like district places, urban spaces, and inner city spaces. Interaction is important to place because it is the major engine through which users carry out their everyday lives and places gain activity and a sense of environmental presence (Jacobs, 1961; Mehta, 2013; Whyte, 1980).

Built Environment

"We build our cities and then they determine how we will live ". (Winston Churchill). Many studies have tended to built environments and their diverse impacts. Structures, streets, and recreational facilities make the built environment where we live, work, learn, eat, and play. The built environment affects our decisions about go to some places or not to go, do some activities or not to do such as walk to work or school, take our children to parks depends in part on how our neighborhoods or our built environments are built. (Charles J. Kibert, December 2011). the biggest offer of studies among sorts of human activities (movement & stability) while the movement activity have had the largest share of studies among types of human activities. Bandura in his theory "Social Cognitive Theory" had proved that individual factors and social physical environment would impact on human perception and behavior together. The Built Environment is exceptionally unpredictable, it is multidimensional, and in this way, presents challenges for measures it. A lot of papers researches and books presented the built environment as influential factor on physical, Psychological and mental. (Bandura, 1989) Social and physical plans are unavoidably interwoven. Environments are generally constructed for social reasons and designs are led to social consequences intentionally or unintentionally, and the humblest constructions acquire socially ascribed meanings. (Halpern , 1995) The types of environments that affect perception and behavior may be physical such as weather, climate, community resources, the built environment and the data environment or social, for example, social support, customs, faiths and attitudes. (Sallis & Owen, 2002). Physical behaviors and activities are shaped by environmental constraints, therefore, the environment will be considered as a strong behavioral determinant for them. (Owen, et al., 2004). (William, 2011) in their research "mental health and the built environment" were refer that the built environment has important effects on mental health and perception, it represented in influences of crowded, noisy and unsafe places and areas . One study in the Journal of Urban Health, notice of the New York institute of medicine 2003 clarifies the potential part of the built environment in emotional wellness seeing the hidden instruments, for example, social bolster, control and rebuilding. Also United states environmental protection agency has presented a report titled "our built and natural environments" which explained the different effects of built environment (direct & indirect) and its related with land use, buildings, perception, and travel behavior the study displayed the relationship between built environment and habitat loss, corruption and discontinuity to decide the impacts of various sorts of advancement. Theoretical foundations had proved that environments have broad effects and they may reflect individual's influences on their environments then the environments affect individuals' behaviors. (Bandura, 1989).Neighborhoods unite the physical and social elements of the environment into one, so that this combined unit will powerfully affect human behaviors. (Scott, 2005). This shows that people are more active physically in such environmental neighborhoods with all their facilities, and a mixture of land, streets, residential. They give us enjoyable scenes and high quality of live (Saelens, 2003).The design of ordinary built environments relates purposefully to the use of such settings. Ordinary environments denote places, settings, or surroundings where individuals commonly carry out activities associated with day-to-day living. Built environments are a result of purposeful design where

designers integrate social content with spatial conditions to generate a place that is consistent with its mission which we need. (Rapoport, 2003). The function of a place is dependent upon its use and is a product of shared knowledge between people in a given social-cultural system (Rapoport, 2003).

Environmental design maintains a congruence between the shape and the behaviors that occur within that place. The functionality of a place is a direct result of a designer's success in materializing environmental affordance in the construction of the built environment . (Rapoport, 1990).

Role of built environment

Built environment can impact how individuals connect with each other through the social organizing of space. This impact can be insignificant by empowering mingling or interaction. Zoning plays a critical part in endeavoring to make public spaces for positive social interaction, for example, open spaces, squares, and parks. Our talk of Measuring socio-cultural interaction by inspecting the negligible impact practiced by built environment to the more role played by built environment in social planning. First, we consider how built environment can affect social interaction by reading and finding values of spaces connectivity and integration in built environment. Finding this values and correlations between them give us Clear and specific values for some of the influences and relationships between the environment and users , This makes us look forward to the greatest role that built environment plays on our conceptions of personal space and territoriality. Built environment can serve to control and discipline people it can play an outright role by communicating cultural or symbolic concept, likewise it can influence how individuals interact and it can be biased and treat certain social sets or values all the more positively.

Space Syntax

Space Syntax has been deemed to be a significant hypothesis and analytical apparatus to examine how space impacts human development by measuring spatial configuration (Hillier, et al., 1984). It has also become a computer language to describe the spatial pattern of urban space. Urban space can be partitioned into two categories from the perspective of human movement: blocked space and free space. Blocked space is consisted of spatial obstacles such as buildings, and in such space people could not move freely from one location to another one. On the contrary, free space is the part of urban space where people could make free movement. The space which space syntax studies is the free space, and the space is not the object measured by Euclidean distance (Hillier, 1996). Space syntax focuses on the topological relationship of spaces including interconnectivity and reachability not the physical distances. In space syntax study, the basic methodology is to partition space by scale and human visual ability. From this point, space is divided into extensive and little scale space (Montello, 1993; Egenhofer , et al., 1995). The expansive scale space like an entire city is past human's visual capacity and can't be seen from a solitary vantage point. While small scale space for example a part of a room is bigger than a human body, but it may be understood as an advantage (Jiang B, et al., 2000). Large scale space can be studied by partitioning it into a finite number of small scale spaces. The space syntax theory was first proposed by Hillier and

Hanson in the book Social Logic of Space which means decomposing a " free space into a set of little scale parts each of which can be obvious from a solitary vantage point ". (Hillier, et al., 1984)

It is developed with the motivation behind exploring the connection between space and human behaviour, where space gives the material preconditions to social relations. Space syntax is utilized as a methodology for "measuring the relative accessibility" of better places in a spatial framework by isolating it into "independent but linked subspaces ". (Hillier, et al., 1984; Batty M, et al., 2002) It adopts such an approach to study to what extent and how the spatial and social attributes are comparably related. It scrutinizes the topological properties of the urban array which are illustrated by urban street networks, and also compares that with the human movement for example, pedestrian and car flow. Far reaching scientific models of the topology of urban road arrange, analyzed and supported by experimental information give profound insights of knowledge into the practical examples and settlements and urban areas. (Hillier, et al., 1993)

in a couple words, it aims to set up a relationship between the spatial structure of urban communities and structures, the spatial measurement of social structures, and more comprehensive social changes.

The general idea is that spaces can be separated into parts, examined as systems of decisions, then spoke to as maps and diagrams that portray the relative connectivity and integration. It lays on three basic conceptions of space:

- An isovist , or view shed or perceivability polygon, the field of perspective from a specific point.

- Axial space , a straight vision-line and imaginable way.

- convex space , an occupiable void where, if envisioned as a wireframe graph, no line between two of its focuses goes outside its border: all focuses inside the polygon are unmistakable to every single other point inside the polygon.

The three most well-known methods for dissecting a road system are Integration, Choice and Depth Distance. Space Syntax so as to talk about the relationship between urban arrangement and spatial versatility of people on foot have cantered their investigations on axial maps, which incorporate an improved representation of the spaces and its distinctive qualities coming about because of hindrances and permeability. Axial maps are in a general sense taking into account a social methodology of the arrangement of spaces making up the street arrangement of a city. This methodology permits contemplations on the topological traits that every road builds up with its adjacent avenues (local connections) or with the entire framework to which it relates (worldwide associations). Connectivity measures the quantity of depths that are specifically associated with a space. This is called local measure. The(integration) value of a line changes as indicated by the quantity of levels that have been considered in measure; in the event that we tally how profound or shallow every line in is from every single other line, we call this global integration, though checking how profound or shallow every line in is from all lines up to three levels away is called radius-3 integration, on the off chance that it's one and only level far from every line, then we call this connectivity of a line (the quantity of lines that are

specifically joined with it), so determining the sort of integration depends up on radius–n integration (Hillier, 1996). Connectivity is a property of the line that can be seen from the line, though global integration couldn't be seen from the line, as it requires learning of the framework overall, it considers the relationship between every line and every other line in any case how far they go, so it's a global measure (Hillier, et al., 1984). The integration value of a line changes as per the quantity of levels that have been considered in measure; on the off chance that we check how profound or shallow every line in is from every other line, we call this global integration, though tallying how profound or shallow every line in is from all lines up to three levels away is called sweep 3 integration, in the event that it's one and only level far from every line, then we call this connectivity of a line (the quantity of lines that are specifically joined with it), so indicating the sort of integration depends up on radius–n integration (Hillier, 1996). Connectivity is a property of the line that can be seen from the line, while global integration couldn't be seen from the line, as it requires information of the framework all in all, it considers the relationship between every line and every other line in any case how far they go, so it's a global measure (Hillier, et al., 1984).Intelligibility is a key property of the spatial structure of towns. It's a marker of the nature of a domain as being effectively navigable . Intelligibility of space may be "a measure of the relationship between the general urban space and nearby elements" (Szalapaj, 2001). The definition concerns the connection between connectivity of space(local measure) and its global integration, it implies how spatial configuration can be perused from its parts.

Synergy is basically the correlation between local (radius3) and global integrations. It is an alternate sort of intelligibility in such a great amount, as it is about the relationship between the local and global structure. There are another estimations that measure of the "flow" through a space(choice) ,and demonstrates the level of decision that every space speak to for its prompt neighbors as a space to move to(control). From these parts it is thought to be conceivable to measure and depict how effortlessly traversable any space is, valuable for the outline of museums, airports, healing facilities, and different settings where wayfinding is a critical issue. Space punctuation has additionally been connected to foresee the relationship between spatial formats and social impacts, for example crime, traffic flow, and sales areas.

Integration

The integration value of a line changes according to the number of levels that have been considered in measure; if we count how deep or shallow each line in is from all other lines, we call this global integration, whereas counting how deep or shallow each line in is from all lines up to three levels away is called radius-3 integration, if it's only one level away from each line, then we call this connectivity of a line (the number of lines that are directly joined with it), so specifying the type of integration depends up on radius–n integration(Hillier, 1997).The Correlation Between Integration and Depth Integration is the less interceding lines which should be gone through to go from a line to each other line. It's in contrast with mean depth (obtained 90 by dividing the total depth by k, the number of spaces in the system), the most integrated lines means minimum depth. In other words, integration α 1/mean Depth so The more segregated spaces means higher depth. Measuring Integration If the axial lines

of an area have been drawn, it is possible to choose any line and place all lines that join directly with it on a separate level until we cover the whole system, then the number of levels required to team up with all lines in the system depth can be calculated, and can be set and values of integration. (Hillier et al., 1983).

Local integration

The local integration represents an accessibility and connectedness within a part of the whole spatial system. This value is calculated only several steps form a certain space, usually within three in depth. Previous researches indicate that the local integration can be interpreted by the hierarchy of accessibility and local movement of pedestrians. Axial local integration is characterized as mix estimations of axial lines at the radius 3 (root in addition to two topological strides from the root), which can be utilized to appear a centralize picture of integration.

Global integration

The global integration indicates to the general accessibility and connectedness of every single space in the entire spatial framework. The higher integration value a space has, the more accessible it is from other spaces. It generally means that a space with high integration value has a good chance to become a place for gatherings and interaction between people. Global integration seems to play an essential part in making those local solidarities open to each other and subsequently in the generation of new information and solidarities. Axial global integration is characterized as the integration values of axial lines at the endless radius which can be utilized to appear a photo of integration style at the largest scale.

Connectivity

Is a property of the line that can be seen from the line, whereas global integration couldn't be seen from the line, as it requires knowledge of the system as a whole, it considers the relationship between each line and all other lines regardless how far they go, so it's a global measure (Hillier et al., 1983).

Intelligibility

The term intelligibility shows the interrelationship between global integration/connectivity. It indicates more prominent clarity or easier comprehension of spatial format designs if the relationship is high. This index is usually presented in a scatter gram with regression lines showing the correlation between local and global integration values.

Synergy

Synergy: Spatial synergy is composed of qualities of physical-spatial association of the city which bolster the activities and conduct of individuals, especially out in the public space. Spatial synergy is accomplished through a particular method for organizing buildings, structures, specialized offices and plantings to shape open spaces (space portions or places). It is accomplished through the way these are interrelated ('relation and communication) inside the urban fabric It is likewise accomplished through the level of availability of all such characterized puts inside a settlement unit ('universal distance'). The

physical-spatial attributes that bolster activities and conduct in public spaces (supportive characteristics) are at the same time those to be directed towards to urban planning to achieve its aim. In this setting , rather than the tradition of the New Movement, that public open space must be the definitive part in making and creating settlement units that are habitable in the true sense. Axial synergy, defined as the correlation between radius-3 and radius-n integration. It measures how much the inner structure of a region identifies with the bigger scale system in which it is embedded. Synergy is an index to show how much a certain spatial system is overlapped with the global integration core. As it were, this is the level of superposition between a local framework and the global framework. It can be gotten through the rate of what number of pivotal lines in the local framework are found in the integration center in the global framework. If the value is high, the local system is strongly related to the global one. Synergy is simply the correlation between local (radius3) and global integrations. It is an alternate sort of intelligibility in such a great amount, as it is about the relationship between the local and global structure.

Case study

Al-khums city-Libya

AL-Khums city is situated inside Tripoli area, which lies just about between scope 33°N and 29°N - Longitude 9°E and 20°E , in northwest of Libya, it has a key location on the Mediterranean Sea. It covers area of 374000sq Km, which is about 22 % of the total area of the country, with population of approximately 3.6 million people, accounting for about 57% of the total population of Libya. The region is made up of seven sub-regions known as Baladiyas, which are Tripoli and AL-Khums Figure1.The Khums sub-region is located in northeast part of the Tripoli region and has location along a beach.

Figure 1. AL-Khums Baladiya, sub-region and city
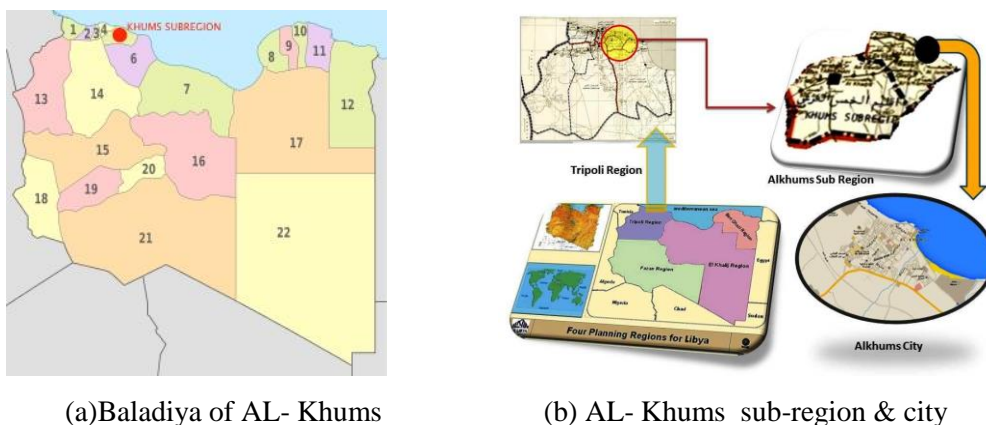
    (a)Baladiya of AL- Khums   (b) AL- Khums sub-region & city

Source: preparing by researcher based Paul Service Consultant Office, Comprehensive plan 2000, AL- khums city.

The main settlement of this sub region is AL-Khums city. AL-Khums is considered as a capital of the Baladiya and its administrative and commercial

center, with Tourist style, Because Leptis Magna exists in this sub region; it is a section of AL-Khums city plan.

Historical background

The city has Phoenician and Roman roots and became the capital of the Roman province of Africa in the reign of Emperor Septimius Severus. The old Roman city of Leptis Magna is located roughly 3 km (1.9 mi) toward the east of AL-Khums downtown area, It is the North East side of AL-Khums city. This coastal site is located 120 kilometers from east of Tripoli, one of the most widespread archaeological sites located on the Mediterranean Sea. The tiny Phoenician port of Leptis was established toward the start of the main thousand years B.C to trade with the Garments people, like the other trading posts on the Gulf of Sidra, such as Sabratha, had a distinguished destiny in the second century A.D , at the point when the Libyan Septimus Severus was chosen to the throne of Roman Emperor, Leptis then became one of the most attractive cities in the Roman world and remained a good example of urban development. Figures 2 .

Figure 2. Leptis Magna
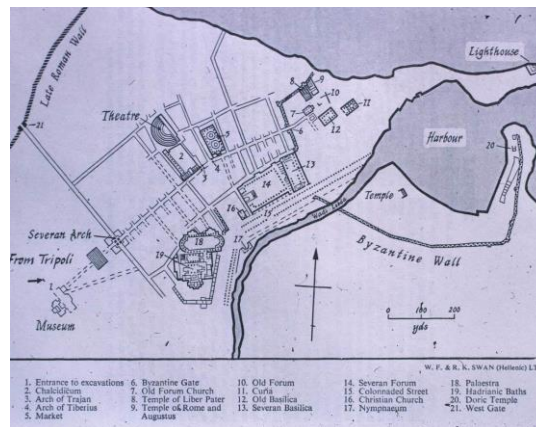
Source: Raymond V. Schoder, S.J. Collection
Publisher: Loyola University Chicago University Archives and Special Collections
Rights: Copyright 1989 Loyola University of Chicago, R. V. Schoder, S.J., photographer.

The city was a megalomaniac's dream for which seemed too big, too beautiful or too grand - marble replaced stucco, stone took sandstone was supplanted by granite, porphyry assumed the position of basalt and (walls looked like bulwarks; lanes, esplanades, Arch of Septimus). Figure 3. and The Theatre Figures 4 .

Figure 3. Arch of Septimus Severus

(a)   (b)

Photos by Georg Gerster, National Geographic.

Figures 4. The Theatre

(a)   (b)

Photos by Georg Gerster, National Geographic.

Leptis magna was like Palmyra and Ephesus: it was a common city that had a rustic part, as other Tripolitanian urban communities, Sabratha and Oea (Tripoli now). It had become in the range of the Roman leverage after Carthage fell in 146 B.C. after that , the Empire has expanded to include this city in the first century A.D. then the cereal trade grew up and Burgeon there. In 193 A.D., after a fruitful political and military vocation in both Rome and inside the Empire, Septimus Severus turned into the head of the empire. Yet, Leptis reached the peak of its glory when the Empire began to decline with the first invasions by Vandals in 429. After the Arab invasion, the desert sand took possession of the site once again. In the period between the two world wars, the Italian government paid for a significant excavation to clear tons of sediment which led to the discovery of the city. After the Second World War, British and French archaeologists joined the group but it was the time when the site had just been added to the World Heritage List in 1982 that the work truly began. Today, a total of 30 major monuments -Hadrian's baths, the Forum covering a hectare of land, the Severan basilica, the port, the main temples, the marketplace, the theatre have been restored, as well as many minor ones. The renovation of the 15,000- seat Amphitheatre is nearly completed. They have moved many models and mosaics to the exhibition halls of Tripoli and Leptis Magna. Modern AL-Khums city established by the Ottomans as an Ottoman garrison and the main port for export the Allies plant. In Al-Khums city, just a few of its Ottoman and Italian buildings are left along the eastern part. Figure 5 .

Discussion and Results of Syntactic analysis of AL-Khums built environment:

It is clearly accepted that city is the container of activities, in its spaces many human behaviors like eating, gathering, assembling, connecting with others , dwelling occur, and walking having their spatial form. There is a normal connection amongst space and its utilization lies in the connection between configuration of individuals and configuration of space. configuration as characterized in Hillier's book space is the machine is " a group of connected relations in which each is specified by its relation to all the others" (Hillier, 1996: 24).

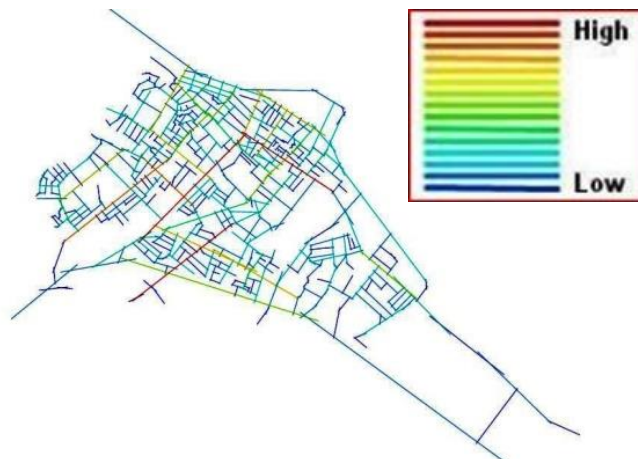**Figure 5.** Abdul Hamid pasha mosque– Alkhums 1958
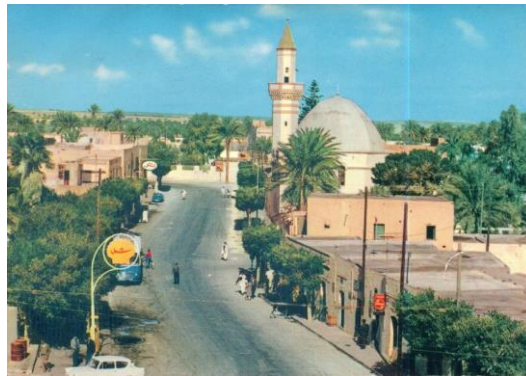
Source: AL-Khums city archive

AL-Khums city – connectivity value: C

AL-Khums city has average connectivity value (3.745); It is within the limits of the average European and English. This value confirms that the gridiron pattern and open streets dominate the city plan. Figure 6.

Figure 6. AL-Khums city- connectivity value

AL-Khums city- local integration R3

This indicator has been calculated on the basis 3 steps depth, it was in Khums city (1.842) Slightly higher than the average of Arabic cities, this value means that the city has straight and connected streets. Local Integration Analysis According to the analysis of local integration, the overall pattern in how the most locally integrated spaces are placed look very Similar of the global integration. Again February 17 street, Tripoli street, and 20 street are found to be the most integrated along with several cross roads. Considering the accessibility into the old city center, February 17 street, Tripoli street are the best choices. Figure 7.

Figure 7. AL-Khums city- local integration R3
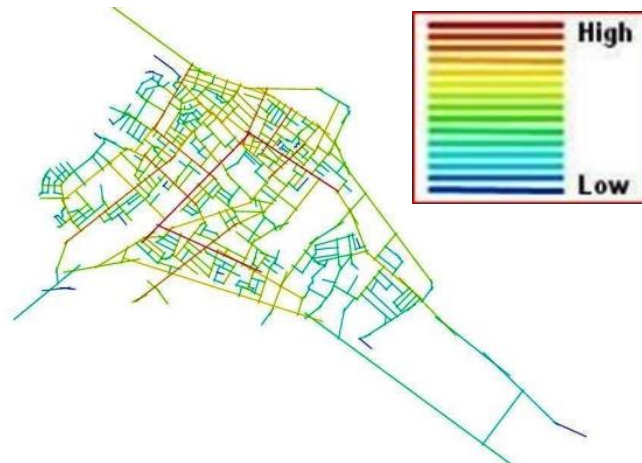
AL-Khums city- Global integration: Rn

Based on the axial map of AL-Khums city It has been shown from the results of the axial analysis that the average of global integration for AL-Khums city approaching the average values of American cities, it was (1.293). Figure 8 shows the global integration analysis of the AL-khums center with main roundabout and surrounding areas. It shows that the most integrated area in the center is the February 17 street and Tripoli street and the secondary streets connected into these two streets. The inner loop or ring roads composed of several roads is also found to be the most integrated. The Haraty street and the streets connecting the main roundabout to the city center are found integrated.

Figure 8. AL-Khums city- global integration

AL-Khums city -Intelligibility: Rn vs. C

Another interesting feature for AL-Khums city is the intelligibility indicator, it was (0.3286) in AL-Khums city, it is very high, more than all cities; European, Arabic and American Table (1) . Intelligibility means that the observer can understand all spaces of the city by seeing a few and limited spaces. Thus, the spatial structure of AL-Khums city needn't a lot of steps to understand the whole parts of the city. Figure 9.

AL-Khums city -SYNERGY: R3 vs. Rn

This indicator represent correlation factor between global integration value and local integration value. This means do spatial structures support or impede the flow of movement between local level and global level (inhabitants & visitors). This indicator also shows the support of the city integration and cultural exchange between the users of urban space or not. AL-Khums city registered high value; they have even exceeded American cities, where it was (0.7128). This means that the structures of the space of the city strongly support positive interaction between inhabitants and visitors. It is reflected in the existing relations between tourists and residents because the presence of Leptis Magna, visitors has become a familiar part of city combination.. Figure 10.

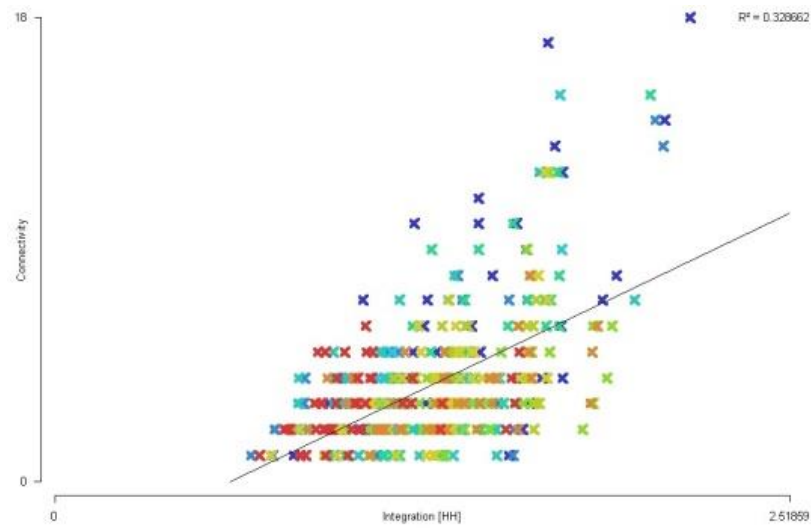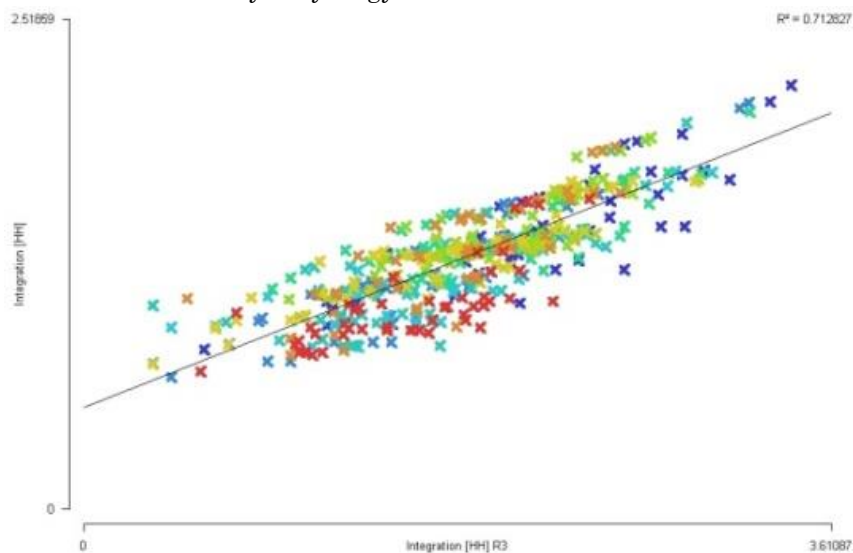**Figure 9.** AL-Khums city -Intelligibility: Rn vs. C

Figure 10. AL-Khums city - Synergy: R3 vs. Rn

The relationship amongst connectivity and global integration is an essential pointer of how clear a urban system is for its clients; and is called as Intelligibility. synergy is the resulting value of correlation between local integration and global integration. It shows the relationship between parts of the spatial framework to entire framework. These parameters can measure the spatial configuration. The urban spaces of AL-Khums city have a higher values of Intelligibility and synergy may due to the strong cultural definition of its users. Table 1.

AL-Khums's global and local integration analysis show that the strong central main roads. These roads are distinguished significantly in the Axial global integration map and local integration analysis, where this roads seems to shrink and shift towards the east and west entrances. This indicator represent

correlation factor between global integration value and local integration value. This means do spatial structures support or impede the flow of movement between local level and global level (inhabitants & visitors) This indicator also shows the support of the city integration and cultural exchange between the users of urban space or not. AL-Khums city registered high value; they have even exceeded American cities, where it was (0.7128). This means that the structures of the space of the city strongly support positive interaction between inhabitants and visitors. It is reflected in the existing relations between tourists and residents because the presence of Leptis Magna, visitors has become a familiar part of city combination.

Table 1. Averages of some of the different cities in the world cities

Cities	Cases	Axial size	Connectivity C	Local integration R3	Global integration Rn	Intelligibility Rn / c	Synergy Rn /R3
U.S Cities	12	5420	5.835	2.956	1.61	0.224	0.559
Euro Cities	15	5030	4.609	2.254	0.918	0.137	0.266
English Cities	13	4440	3.713	2.148	0.720	0.124	0.232
Arabic Cities	18	840	2.975	1.619	0.650	0.231	0.160
Libyan Cities	6	1416	3.53	3.53	0.904	0.192	0.369
Ghadames City	1	744	2.7	2.7	0.558	0.122	0.227
							prepared by Alagori farag 2002
Khums city	1	486	3.745	1.842	1.293	0.3286	0.7128

Sources: Blue part: Alagori farag ,2002 based Bill Hillier, theory of the city as object.& Orange part: prepared by researcher based empirical work.

Conclusion

The most important means of social relationship is the space. In this regards, space could be at any scale from the largest one down to a specific unit, but apart from the scale, it should create social relationships. New improvements in urban areas around the globe, tend to come back to traditional urban values and restore human scale sizes; a human versus autos campaign. As the principle habitat of the people, the urban space alongside its surrounding are central affecting component keeping in mind the end goal to create correspondence with others. This would likewise produce powerful connection amongst space and the feeling of identity. At last, the improvement of social connections in urban scale ought to start with cautious thoughtfulness regarding particular spaces by actualizing utilizing interaction configuration approaches. Our built environment can be structured to empower or debilitate social interactions. From this research, an effort is made to make explicit the spatial configuration as concealed spatial rules or principals of urbanism in libyan built environments, so as to evolve a humane approach towards spatial design of emerging built environments in urban libya. More detailed analysis is required to exactly assess the user preferences, but this study is representative of its possibility. Also, the study can be furthered for number of cities. This research aimed to compared and analyzed in relation to the urban spatial structure

through the syntactic analyses. This study has found that the AL-Khums city spaces support visitors to recognizing the spatial structure and finding ways to their destination since it has a high level of clarity of spatial structure or intelligibility and high level of synergy. AL-Khums city has the strong cultural definition of its users because it has a higher values of Intelligibility and synergy. This means that the structures of the space of the city strongly support positive interaction between inhabitants and visitors. It is reflected in the existing relations between tourists and residents because the presence of Leptis Magna, visitors has become a familiar part of city combination. The study has established that built environment and the urban spatial organization can affect human interaction in relation to the thematic characteristics of attractions .It also has suggested that it is necessary to create spaces which have highly integration and connectivity with the urban structure and to establish additional attractions, especially on places with low integration and connectivity to improve their intelligibility and accessibility. Also expansion of the communication and social interaction causes to expand culture, exchange of thoughts and feelings through communication and social interaction.

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