

The Morphology of Tripoli's City Center

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Abstract :

Tripoli is one of the most famous cities of the northern coast of Africa since pre-Christ eras. Because of its geographical and strategic importance, Tripoli was a shift point of the trading process between Europe and Africa. Its land witnessed many civilizations and invasions. This fact significantly influenced its physical and social structure.

This paper discusses the spatial features of Tripoli's center through studying the morphological characteristics of the spatial core of the city through different stages. This city witnessed great changes and developments in its urban structure due to configurational differences resulted from the process of urban development and growth, particularly with the advent of the 20th century up to our present day.

The paper adopted the method of space syntax theory as a technique for analysis and comparison among the space systems of the study area. It also applied the techniques of axial maps through using (Arc View GIS 3.2) application in order to find out the mathematical and measuring indications of the paper's results which will be interpreted into designing indications to be used in explaining the urban configuration of Tripoli's center.

(1) Historical Background :

Tripoli (which was known as Oea at the Roman era) is located on the southern coast of the Mediterranean Sea. It had been a switch point (for caravans coming from the desert in the 7th century B.C.) from where goods and African products were transferred to Europe and eastern Mediterranean cities. This fact encouraged the Phoenicians to establish several ports for their trade ships. Consequently, many markets and workshops were founded in this city.

Because of its strategic significance, the Romans occupied Tripoli in 146 B.C. and it became the political capital of three major Roman

cities of the Libyan coast (Oea, Leptis, Sabratah) . In the 4th century A.D. its constructions were destructed and demolished by the Vandals. Tripoli didn't witness further construction until the Byzantine era which lasted up to the 6th century A.D. The Byzantines were only interested in enhancing Tripoli's walls and castles.

In the 7th century A.D. Tripoli was conquered by moslem Arabs. At this stage, the city witnessed a development in its infrastructure. Many exterior wall gates, markets, trade shops, mosques and housing constructions were founded. As a result the trade movement and population within Tripoli increased.

In 1510 A.D., Spaniards occupied Tripoli. Their major concern was to renew walls and castles and to establish towers. They were also interested in the gates of the city for military and civil purposes; therefore gate names such as Znata Gate, Al-Bahr Gate, Al-Hawarah Gate, etc. appeared.

Tripoli regained its flourishing in the Ottoman Empire era (1551-1911 A.D.) after defeating Malta Knights. During this era, the city witnessed a development in providing social and administrative services. The Ottomans were very interested in the constructional aspects. They built hospitals, court houses, mosques, trade schools, arsenals and they improved the city walls and its castles. They also encouraged interior and exterior trade exchange which led to a great economic flourishing in Tripoli.

As of 1911 till 1943 (i.e. during the Italian occupation), the number of Tripoli's population increased. Thus, the need for public service facilities and establishments became massive. Fast technological development (which the world witnessed) urged for demolishing the city walls and it witnessed modern urban manifestations such as major wide cities and central areas with markets, trade shops and public parks.

During the British administration period (1943-1951), development in Libya was very limited. The only change was the return of the original Libyan residents to their cities. This process continued until Libya became an independent country. At late 1960s, oil was discovered in Libya due to which the economic conditions were enhanced, population growth rates increased and living standards developed. Therefore, the need for an increase in the infrastructures and the administrative and service establishments emerged. Gradually, Tripoli began to expand massively up to our present day, so it included a vast area of the Tripoli region which overlooks the Mediterranean. It became the administrative and the political capital locally, regionally and nationally.

(2) Morphological Characteristics of Spatial Core :

This paper aims at studying the morphological characteristics of the spatial core of Tripoli through different chronological stages. This study will be conducted by using the technique of analysis and comparison of the axial maps of the spatial system of Tripoli for consequent periods, i.e. 1890s, 1910s, 1940s, 1980s, 2000s. The integration core will be applied to these axial maps which are represented by the axes of the most integration values in the system. These axes represent 10% - 25% of the total amount of the spatial system.

The results of the syntactic analysis of the integration core of Tripoli during the Ottoman era (1890s) indicate that the core concentrates in the major and most straight axes which connect the gates of the city through the organic urban structure with the city center; and some other axes that parallel the city walls, as illustrated in figure (1). These axes organizes the public landuses such as markets, hotels, cafes, mosques and schools which, in turn, increased the through-movement due to the movements of merchants and visitors.

In the 1910s, and as a consequent of the continuous population increase and the great technological development, city constructions expanded beyond the walls of the city which influenced its core. The results of the analysis show that the integration core shifted towards the city edges, especially the south western edge as illustrated in figure (2). This fact resulted in removing parts of the city walls.

During the 1940s, those city edges and main gates were turned into focus points where the integration core was concentrated in the axes stemming from those focus points forming the axes of the main urban growth of the settlement in all the directions of the region, as illustrated in figure (3). They were especially represented by the axes branching at the south eastern gate (Al-Manshiyah Gate) and the western gate (Al-Jadeed Gate).

In the 1960s, the urban growth increased due to economic reasons. The city gradually expanded to include vast areas of the Tripoli region until early 1980s when the integration core was concentrated in the new urban pattern which surrounds the southern part of the old city. The integration core was divided between Al-Khadra Park which overlooks Al-Manshiyah Gate and its radial streets (such as Al-Azeeziyah Street, 1st September Street, Mezeran Street and Al-Wadi Street) and Al-Sweehly Square which parallels the city's south western edge and the grid structure surrounding it. Thus, Omar Al-Mukhtar Street and Al-Rasheed Street became the connecting axes of these two distinguished focal points. Many administrative and state establishments, religious and cultural buildings, medical and public service buildings, recreation facilities and shops and markets were centered within this core of the city.

During the 1980s up to the advent of the 21st century, Tripoli gradually and largely expanded. Consequently, the need for more administrative and service facilities appeared. And because of the

functional important that the city core has, it became a center of attraction for these facilities and many other activities and it also created new facilities to meet the needs of the inhabitants locally and regionally. We can see that the integration core maintained its position but it increased in size, as it expanded towards the eastern part of the city (Dhahra) and towards the southern part until the main street (Al-Jamhoriyah Street now) which separates the city core from the rest of the city.

Hence, Tripoli's central service area boundaries can be defined. These boundaries were confirmed by the future studies of the latest urban development plan of the city (1980-2000). This will help in studying the structural characteristics of the city center separately from studying the city as a whole.

(3) Tripoli's City Center :

Tripoli's city center represents the vital core of the region on the local and national levels. It is the center of the economic, social and cultural life of the urban community which was formed as a result of these dynamic processes of the urban structure through different times. The city center moved from the old city and its organic pattern to the urban grid pattern and it settled in the area with the functional importance.

In our present day, Tripoli's city center is located between the beach strip from the north and Al-Jamhoriyah street from the south; and it includes Al-Dhahra region from the east and the old Souk Al-Thulatha region from the west. This center is distinguished by attractiveness and variety in its functions and activities. It is dominated by the commercial, social, cultural, administrative besides the housing services; and it is accessible from all parts of the settlement. It includes the public

communications station in the north western part which connect the city with a net of transportation lines.

(4) Global and Local Measure :

The global measure is represented by the integration value. It is one of the techniques of the space syntax theory which expresses the relative depth of space according to all spaces of the axial map. It is also used to study the most and the least integrated spaces of the spatial system of Tripoli's city center separately. The results of the syntactic analysis indicate that the average of the degree of integration for the spatial system is (0.952). This shows that the system is dominated by integration , as illustrated in figure (5). The most integrated axes are concentrated in the urban mass which extending from basic axes of the old city (the crafts and folkloric markets such as Al-Musheer market) to Al-Khadra park and the radiant axes branching from it, and the grid urban pattern which surrounded Al-Sweehly square extending to Al-Nasr street in order to form the economic center of the city.

The less integrated axes are to concentrate at the edges of the central area of Tripoli where basically dominated by the state service buildings; and the educational and sport facilities in addition to the residential ones.

Locally, the results of the syntactic analysis show that the average of the connectivity value of the spatial system is (3.66). This indicates that the spatial structure of Tripoli's city center has high accessibility.

(5) Intelligibility :

The degree of intelligibility expresses the possibility of containing a moving person within the global structure of the spatial system. Tripoli's spatial structure has a variety of urban structural patterns which

ranges from the organic pattern in old city and growth axes of radial pattern and the grid pattern which mediates the major axes.

Measuring the intelligibility degree of Tripoli is done by the coordination style through the determination coefficient (R^2) between the local integration and the global integration (whose value is 0.351 as shown in figure(6)) on the one hand, and the correlation coefficient between the connectivity and the global integration (whose value is 0.210 as shown in figure (7)) on the other.

The above statistic results show that the spatial structure of Tripoli's center has an average degree of intelligibility due to the formal differences in its urban patterns.

(6) Conclusion :

Organic pattern , main squares, grid pattern, and radial axes. These are the syntactic components for spatial structure of Tripoli's city center. These components were resulted from economic and social process of urban configuration by the course of time.

This paper concluded that urban configuration of Tripoli's city center has been through three main stages. In the first stage, the center maintained its position for decades due to the fact that the growth of the city was happening inside its walls for military defensive reasons. In the second stage, the center shifted to include part of the new urban structure for technical and demographic reasons. In the third stage, the center expanded to include a vast area for economic reasons.

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Figure 1. Spatial Core of Tripoli City in 1890s

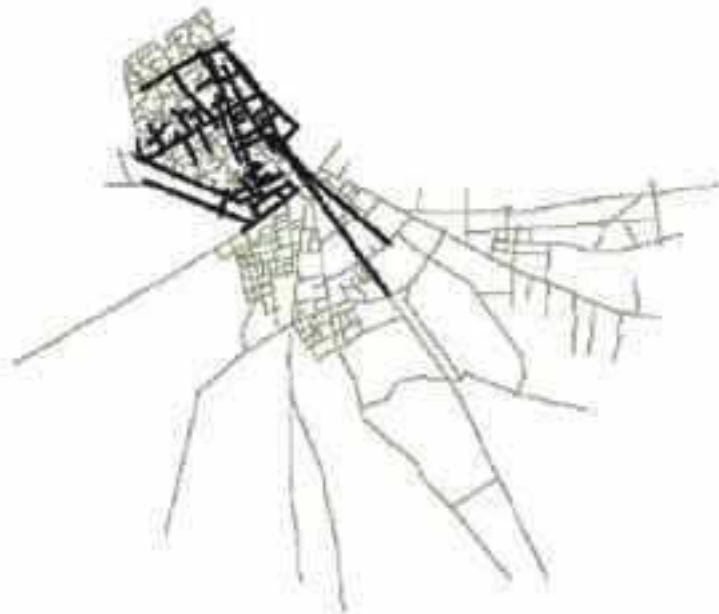


Figure 2. Spatial Core of Tripoli City in 1910s

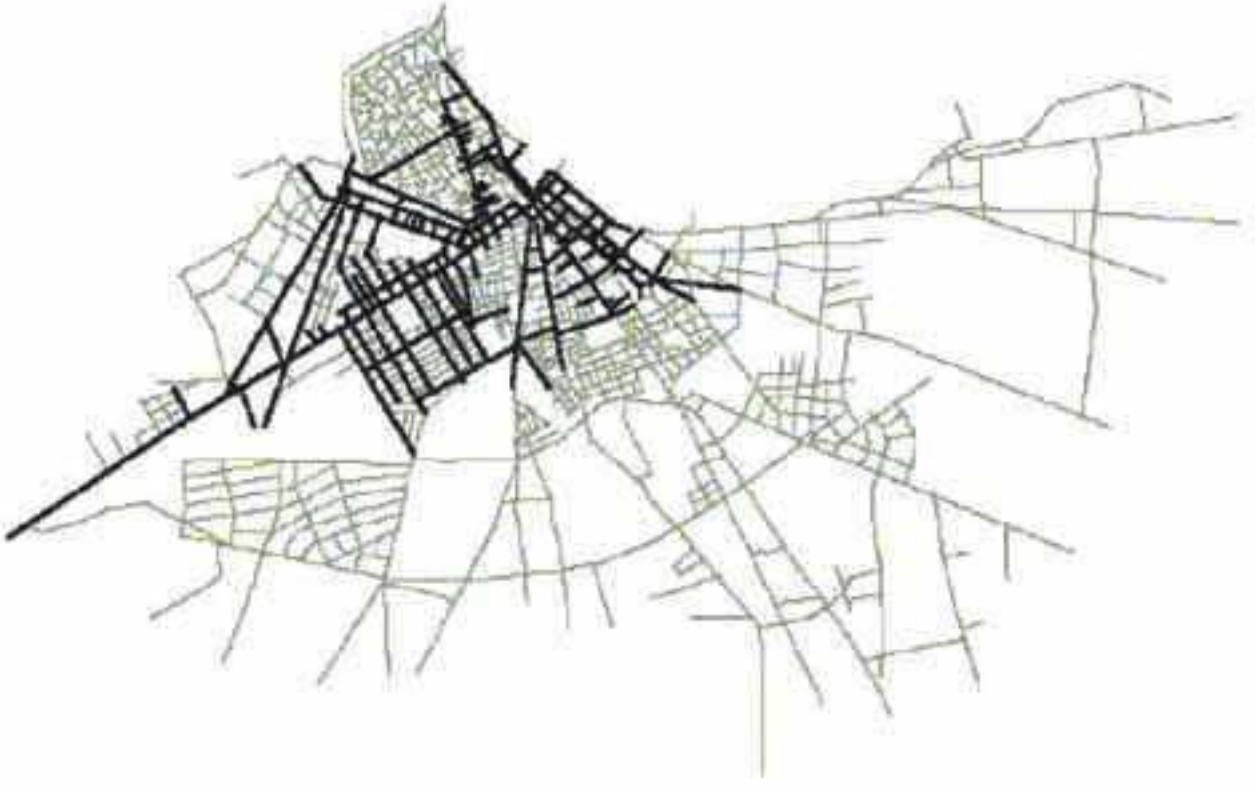


Figure 3. Spatial Core of Tripoli City in 1940s

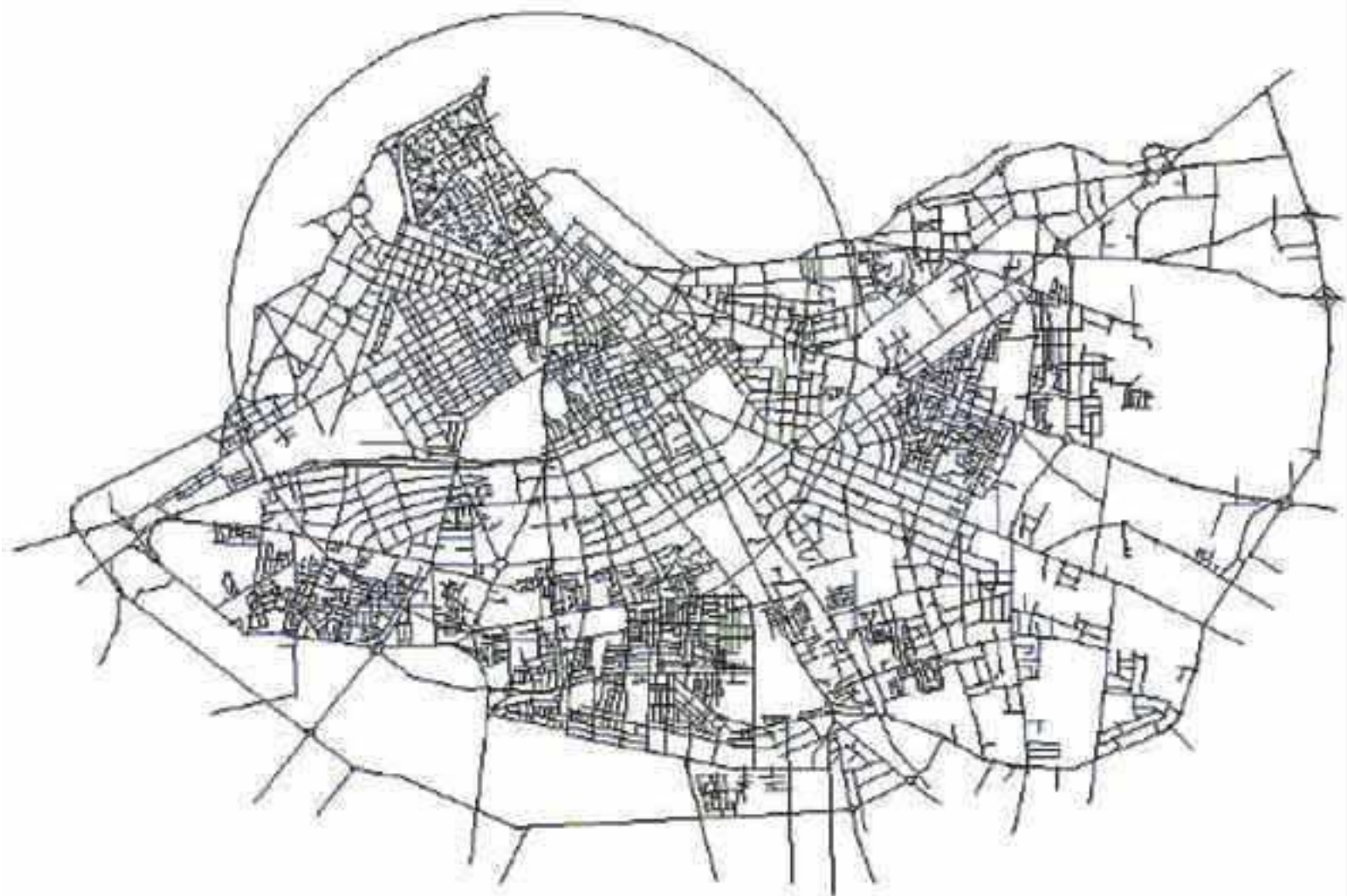


Figure 4. Axial Map of Tripoli City in 1980s



Figure 5. Axial Map of Integration Value for City Center of Tripoli in 2004

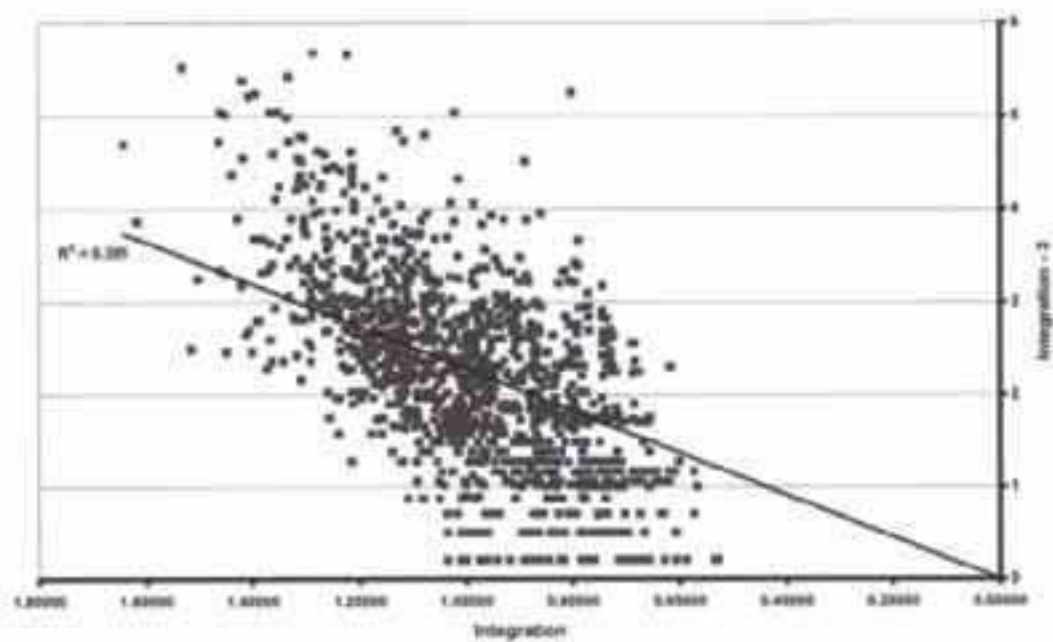


Figure 6. Scattergram of Global integration Against Local Integration for City Center of Tripoli

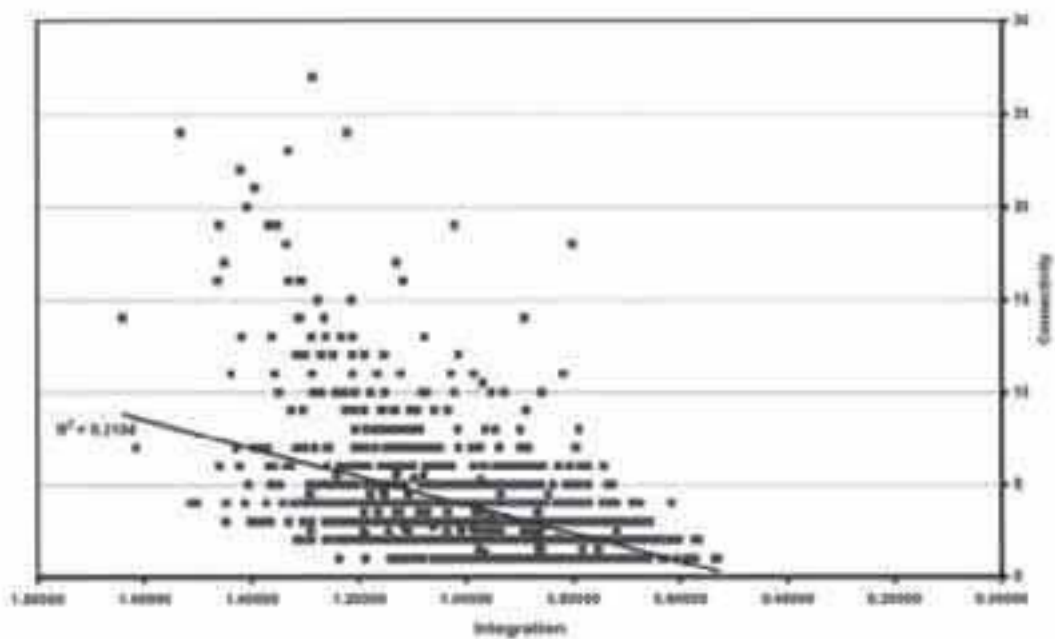


Figure 7. Scattergram of Global Integration Against Connectivity for City Center of Tripoli.