Architecture and urban of the Islamic Arabic city "Study in unlimited their properties"

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Abstract. This research relates to the concept of Arab Islamic cities’ characteristics as one of the most effective concepts in their planning, which are not limited in specific thoughts. The problem statement in this study is determined by crystallizing a comprehensive theoretical vision about the urban planning of Arab and Islamic cities. Moreover, the current research aims to clarifying the unlimited characteristics which are adopted in the planning of the Arab-Islamic cities. Accordingly, this study assumes that the indicators of these characteristics have a positive impact on the planning of Arab-Islamic cities. In order to address the issue and achieve the objectives, the work was to first build a knowledge framework. Furthermore, an integral theoretical framework of its characteristics which were extracted from the architectural proposals was studied. This is to be reflected in final form in four main indicators which include "engineering characteristics, environmental characteristics, aesthetic characteristics, and the social characteristics". Subsequently, applying it to selected local Arab cities to clarify their impact in the planning the urban fabric of the Arab-Islamic city. Also, to reach conclusions which are clear and in control of the process of planning according to all indicators of extracted characteristics.

1. Introduction

The religious aspect plays an important role in the planning of the Arab-Islamic cities, but it is not the only influential feature in its planning. The Arab Islamic cities include other characteristics, the most important of which are: "Engineering, environmental, social and aesthetic." Despite the previous literature, these characteristics, however, touched on them succinctly or implicitly, as well as attacking Orientalists of the Arab Islamic city, they refused to recognize it as a colony. Thus, the problem of research in (The crystallization of a comprehensive theoretical concept of the characteristics of the planning of Arab and Islamic cities). The research aims at clarifying the unlimited characteristics adopted in the planning of the Arab Islamic cities. Finally, the research methodology is divided into five axes, the first of which is to study the concept of the Arab Islamic city in terms of four main areas: "What is it, its origin, its components, its characteristics, both intellectuals and Orientalists". The second included: discussing the concept of the Arab-Islamic city in the previous literature for the purpose of strengthening the research problem. The third focused on building the theoretical framework through the analysis of literature and previous studies. The fourth deals with projects elected for the purpose of application. Fifthly and finally, it included the presentation of conclusions and recommendations.

2. The first axis: the cognitive framework for research: The axis discusses the concept of the Arab-Islamic city in terms of four main areas: its essence, its origin and stages of development, the components and factors affecting it, and its characteristics in both intellectuals and orientalists.

2.1 What is the Arab-Islamic city:
The paragraph explains the concept of the city of two main aspects, namely:

- **The city from the Arab and Islamic perspectives**: The root of the word of the city, as some linguists refer to (Dan, denounces) any domination and rule, and it gives the meaning of stability and rooting in the eyes of other linguists as the cities of (established and settled). The city is mentioned in the Holy Quran, as the Almighty said: "A man from the far side of the city is a man who seeks" (Yas, 20), indicating the spatial dimension of the city and its geographical significance and its impact on the two dimensions: career and composition.

- **The city from the urban perspective**: It is a "social, cultural, urban, and economic" unit that develops and grows dynamically within a specific spatial space, and operates and is connected to a different system from one city to another [Karakja, 2012, p. 310-311].

2.2 **The emergence of the Arab Islamic city and its stages of development**: Beginning with the emergence of "Yathrib" after the Messenger of Allah Muhammad and then moved to (city), as the mosque became the nucleus of urban and then developed cities and flourished thanks to the availability of cultural elements, Central, as the eighth, ninth and tenth, where more than (200) Arab Islamic cities were established, including Basra in 14 AH, Kufa in 17 AH and Baghdad in 145 AH [Sabri, 2012, p. 3-5]. The Arab Islamic city has gone through three basic stages:

- **Stage of origin**: This stage is predominantly military.

- **The stage of maturity and prosperity**: the stage in which the area of urban space is divided with the opportunities to harmonize the activities in practice.

- **Stability stage**: Civil institutions are visible and stable in their functional structure according to seven basic uses: "religious, commercial, residential, military, industrial, health, and service." [Karakja, 2012, p. 313].

2.3 **The components of the Arab-Islamic city**: What is it derived from the urban fabric, which consists of four basic units, namely:

- **Mosque**: The mosque is one of the most important religious events in the Islamic city. It has dominated the best sites, taking a central position, which made it the nucleus of composition, and requires the interdependence and integration with the road network on one hand and adjacent with the House of the emirate or the palace on the other.

- **The market**: The markets represent the interaction between the spiritual and physical sides, which is attributed to their spatial connection to the mosque, and its advantages: the human scale, the homogeneity of building densities and accessibility from all sides of the city through the pattern of the radial streets associated with the city's general structure, Arabic Islamic. [Muhammad, 2016, p. 600-605].

- **Residential neighborhood**: Residential use occupies 70% of the total area of the Arab Islamic city. The residential shops took the form of the sector in the stage of development and then developed into specialized shops distributed in a ring around the religious and administrative nucleus of the city. It is residential and sometimes meets or contains other uses such as educational, health and service institutions.

- **Streets**: An important means of communication and movement of motor and visual, and characterized by several characteristics, including: the integration of movement systems from the year to the special, integration with the urban fabric of the city as classified to external ways ending at the city wall and the internal branch to the main, which are distributed to a group of Secondary roads and ends with the runway [Al-ataabi& Alhelli.2018.p7.10].

Finally, three important factors must be mentioned in the design of the Islamic city fabric: First, the climate factor, as the hot, dry climate of the city has been reflected through design treatments, such as swimming pools and the inner courtyard. And second, the social factor, since the conservative society imposed the trend towards the inside and shut off. And the religious factor, emphasizing the realization of privacy between men and women; the appearance of the Haram al-Haramlik and Al-Salamql in the
2.4 Characteristics of the Arab Islamic city:
The common understanding of the characteristics of the Arab Islamic city is to limit it to a one-sided, religious-only framework. Europe has erased it from the history of the world's architecture. This has led to its being attacked by Orient lists and not recognized architecturally [Al-ataabi, 2019.p14-15]. From intellectuals and orient lists:

- The characteristics of the Arab-Islamic city among the intellectuals: They describe it as "infinity", as it is not bound by the upper and lower limits and characterized by Arab and Islamic cities.

- The characteristics of the Arab-Islamic city of Orient lists: They describe it as "limited", since it possesses high and low limits that cannot be overcome. Thus, Arab cities cannot be described as architecture because they are restricted to the religious aspect only [Zaki, 2018].

From the above, the procedural definition of the Islamic Arab city can be presented as "human cities reflected in Islamic thought in its planning processes through the changing form and the fixed content as a case of the inherent or acquired commitment to that belief". Through a review of the previous literature mentioned above, Arab Islamic cities is to define their planning processes in the religious aspect while it is full of the principles of "engineering, aesthetic, environmental and social" which made it not taught by some and criticized by others; as the main indicators, as shown in the second axis of the research.

3. The second axis: Building the theoretical framework: This topic deals with the introduction of a series of previous studies to determine the main and secondary indicators of the characteristics of the Arab Islamic city.

3.1 Mohammed's Study, "The Influence of Social Factors in the Planning and Architecture of Arab and Islamic Cities", 2016.
The study examined the close relationship between the doctrinal systems of the Islamic society and the characteristics of the Arab cities, as they refer to two characteristics: First, containment, housing efficiency is an important element in the morphological composition of the Arab Islamic city. And the residential house is the basic unit of the Mahalla, and the most important characteristic of this urban pattern of the Arab Islamic city is the containment, which means urban approach of people and buildings of each other, unlike the explorations that diverge from Elements that exist in the urban space. Secondly, it is concerned with assembling the architectural units according to a specific system that preserves the sanctity of the dwelling, studying the relationship of the urban unit visually with its neighbors, as well as studying the height of the buildings and the sidewalks. We conclude from the above that the horizontal extension and limited vertical construction concerned the specificity of Islamic architecture, while the convergence ensures the containment at the level of structural units in the Arab Islamic city, which confirms the reflection of social ideology on the mechanisms of design of Arab Islamic cities.

3.2 Study of the majority, decorations and their role in Islamic architecture, 2012.
The study presented the art of decoration in the Arab Islamic architecture as an aesthetic and treatment of the Muslim architecture for several reasons. First, it is an effective treatment to show interest in the place, space and building that the Muslim wants to show his interest in; the sanctity of the mosque or the generality of the market; the accuracy of the decoration, its beauty, its richness and its type are related to the importance that the architect wants to add to space. Secondly, it is a successful treatment of the division of surfaces and thus of space into a network of small units interconnected by human standards, whether they are plant, animal, geometric or written. Thirdly, the decoration in Islamic architecture is a reflection of Qur'an images that describe the verses of God on earth as "the infinite nature and diversity" as well as the oneness. Fourth, the decoration is one of the most effective treatments to reduce the effects of bad weather such as heat and light intensity. It is designed on an additional surface that acts as an appropriate thermal insulation. It also reflects light and dispersion in...
different directions to reduce the annoying brightness to the eye. We conclude from this that the art of decoration in Islamic architecture as an aesthetic characteristic refers to the high craftsmanship and precision in the manufacture and workmanship.

3.3 Sargani Study, *Architecture in Islamic Civilization*, 2010.
The study explained the art of building techniques in Arab Islamic architecture as a distinctive aesthetic characteristic. It was classified first by the domes. The Arab architects excelled in the construction of the large domes. They succeeded in their complex calculations, which rely entirely on the analysis of cortical structures (SHELLS). The mosque in Kairouan, and its Dome of the Rock Mosque in Palestine and second columns, designed as crowns and pointed hoops, until the so-called building decades science appeared. The third is the muqarnas, which means the lower parts of the ceiling, and the mornings, which are the interiors used in the niches and the ceilings, while the external ones are used in the minarets, the doors of the palaces and the balconies. And the four marsh beats, a technology that reduces light intensity and enables women to watch outside without betting. And five contracts, including the blown contract and the three openings and the splintered, tapered and released, and circulated its use in Islamic architecture and then quoted by European builders in their churches as six dams and arches. Waterways, bridges and canals are a great technique for planning and implementation. Water passing through the canals gives an additional aesthetic dimension to Islamic architecture. And the seven castles are one of the most important additions that the West took from the Arab-Islamic architecture. The West did not know anything but the circular pattern in its design. Since the entry of Andalusia Muslims, the models used in the building have changed to the Arab model, which is predominantly square and is equipped with towers for observation and defense purposes. We conclude from the above the multiplicity of building techniques in the Arab Islamic architecture, which gives them unique aesthetic characteristics as well as their basic environmental and social functions.

3.4 Al-Ani, "*Rhythm in the traditional facades of the alleyways in the ancient city of Mosul*", 2010.
The study discussed the rhythm as one of the distinctive architectural characteristics of the Arab Islamic architecture, indicating that the rhythm is based on the repetition of the elements both horizontally and vertically, so that this repetition does not occur in a simple way but rather indicates a rhythmic continuity of movement that the viewer's eyes and mind can follow on a path or within composition or at a full city level. The most prominent types of rhythms used in the Arab Islamic city are: First, the rhythm is heterogeneous, where the gradations vary in the elements, which gives direction to the rhythm and dominance of some parts. And secondly, the rhythm rhythm, where it overlaps more than one levels with each and each of them a rhythm different from the other by doing one of the background or front of the other. And thirdly is the directional rhythm, which has a variance of vertical, horizontal or slanted type. The study classifies the engineering rhythm of the Arab Islamic city on two levels: the first is the engineering cadence at the facades level, and requires the achievement of "unity, diversity, gradation, and difference." And the second is the geometric rhythm at the horizontal level (diagrams), and requires the achievement of unity and gradation of (general - semi - public - semi - private - private). We conclude from this that the Arab Islamic city is based on a geometric rhythm on the horizontal and vertical levels and in various varieties including heterogeneous, oblique and directional.

3.5 Al-Bahnasi, "*Islamic Architecture and its Characteristics in Teaching Curricula*", 2003.
The study discussed the architectural characteristics of the architecture of the Arab-Islamic city. The most important of these are: proportionality, and the ratio of the architectural dimensions of the architectural composition to each other. The ratios relate to the functional, aesthetic and structural aspects of the building, while proportionality is concerned with the process of adjusting and balancing the composition according to specific design principles. The study shows two types of ratios that focus on Islamic architecture, namely: the golden ratio and depends on the division of length to width to equal value (fixed) 1.618, and the human scale and depend on the proportions derived from the human body, such as arm and foot. Secondly, unity and diversity; the architecture of the Arab city was engineered to the Islamic faith, which distinguished its unified identity emanating from oneness of the Creator. However, the different customs and civilizations in the Arab world led to the emergence of
distinct characteristic of the architecture of each Arab city. And thirdly, compatibility and the harmony of the architectural form with the functional content; and therefore, will vary the architecture of mosques from schools, housing, hospitals, palaces, markets and cemeteries. We conclude from the above that the study identified three distinct architectural characteristics of the architecture of the Arab-Islamic cities: proportion and proportionality, unity and diversity, and compatibility.

3.6 The judge's study, "Islamic Architecture in Egypt (theory and practice)", 1998.

The study explained the effect of the hot climatic environment on the architecture of the Muslims, as it touched on a series of environmental architectural treatments that required it to become characteristic of the architecture of the Arab Islamic city. These treatments are: First, the direction of the interior. and secondly the integrated urban fabric, that the adoption of the cohesive fabric in the collection of buildings in the city results in reduced exposure to external surfaces of the sun as well as shading some of the neighboring buildings; thus, thermal energy window into the building is limited. Thirdly, the winding organic streets helped protect pedestrians from the sun as they traveled through the different parts of the city during the day by shading the corridors due to their narrowness and many curvatures. They helped to block the movement of the wind loaded with dust as well as reduce its speed in city streets during the night and for long periods during daylight hours, which helps to temper the temperature of these spaces. The external walls on these streets were mostly deaf with small openings, especially on the ground floor, with the aim of ensuring privacy as well as protecting against reflected solar radiation. The study also touched on the architectural elements of the environment, and their importance in temperature control, light movement and airflow: Mashrabiyyat, Shanashil, and Albadair. We conclude from this that the real meaning of the planning of the Arab-Islamic cities is to create an environmentally suitable place for human activity through a series of treatments and architectural elements adapted to the environment.

Table 2-1. Shows the main and secondary vocabulary of the theoretical framework, (Source: Numbers).

| Key Vocabulary | Secondary Vocabulary | Possible Values | Symbol |
|----------------|----------------------|-----------------|--------|
| Engineering characteristics | Proportionality & proportionality | Golden Ratio | X.1.1.1 |
| | | The human scale | X.1.1.2 |
| Rhythm | Levels | Rhythm on the level of interfaces: "Unity, diversity, gradation, and difference". | X.1.2.1 |
| | | Rhythm on the horizontal level: Requires "unity, gradation". | X.1.2.2 |
| | Types | Heterogeneous- Tabari- Directional. | X.1.2.3 |
| Compatibility | | Formal compatibility | X.1.3.1 |
| | | Functional compatibility | X.1.3.2 |
| Architectural processors | Inward Orientation (inner courtyard) | | X.2.1.1 |
| | Coherent urban fabric | | X.2.1.2 |
| | Street organic winding | | X.2.1.3 |
| | The exterior facades are semi-deaf | | X.2.1.4 |
| Environmental architectural elements | Foodstuffs | | X.2.2.1 |
| | Al-Shanashil | | X.2.2.2 |
| Aesthetic properties | Art of decoration | Plant decoration | X.3.1.1 |
| | | Animal decoration | X.3.1.2 |
| | | Engineering decoration | X.3.1.3 |
| | | Written decoration | X.3.1.4 |
| Art Building Techniques | The domes | | X.3.2.1 |
| | Columns | | X.3.2.2 |
| | Muqarnas | | X.3.2.3 |
| | Contracts | | X.3.2.4 |
| | Dams and arches | | X.3.2.5 |
| | Castles | | X.3.2.6 |
| Social characteristics | Containment | Degree of convergence | X.4.1.1 |
| | Inclusion degree | | X.4.1.2 |
| | Privacy | Collection systems of urban units | X.4.2.1 |
The study will require a qualitative measurement. All of the items presented by the researchers will be standardized in an attempt to reach the integrated picture of the characteristics of the Arab Islamic cities by knowing the extent of their vocabulary achievement, depending on the symbol (1) indicating that it has not been achieved, as shown in Table (4-1).

4. Application.

4.1 The City of Baghdad.

The city of Baghdad was built by the Caliph Abu Jaafar al-Mansur in 762 AD, one of the planned cities. It was first planned by ash to touch the human scale. It took a circular shape divided into three regions. This is a new trend in building Islamic cities. The city of peace was characterized by architectural architecture compared to other cities built by the Abbasids, because of its design as the capital of the succession and a center of science and learning, as well as the city's design included multiple construction techniques such as horns and environmental elements Kalashnil; the city of Baghdad was characterized by harmonious texture, hierarchical streets, overlapping land use and continuous expansion from the 1930s to the 1950s from semi-circular growth to the longitudinal extension of the Tigris River axis. Finally, it should be noted that the city includes a group of residential units built with bricks as well as heritage sites, the most important: Mustansiriya school, martyr's monument, the shrine of Imam Kadhim (peace be upon him), and the monument of the Unknown Soldier.

4.2 The City of Samarra.

The city of Samarra was built to be the capital of the Abbasid Empire by the Caliph Mu'tasim Bellah in 221 AH. The city took a long form and expanded from north to south for a length of 34 km, because there are no limits for expansion. The Tigris River is located on the western side and the Harwan is on the eastern side. From the main streets such as the Gulf Street and the larger street designed directly linked to the city center, which guarantees the efficiency of transport, and surrounded the city of Samarra or the secret of the view of a ribbed wall with a length of 2 meters and does not exceed the diameter of 680 m, built with plaster and bricks up to 7 m, and contains 19 towers and four Doors, namely: Abu al-Qattoul, Bab Al-Nasiriyah, Bab al-Maltouche and Bab al-Baghdad. Finally, it should be noted that the city includes a number of residential units built by rent as well as heritage sites, the most important: the Great Mosque of Samarra, the Malawian and the shrine of the military imams (peace be upon them). [Al-Ataabi, 2014, p. 134-136].

Table 3.1. Discussion and analysis of the two projects (A, B), (Source: researcher).
5. Conclusions.

5.1 Theoretical Conclusions:

- The planning of Arab-Islamic cities is based on harnessing unlimited characteristics in the light of the unity of absolute Islamic values.
- The existence of a relationship between the aesthetic and aesthetic characteristics; the first is a mechanism for their criticism, and we note the existence of a relationship between other ecological and social characteristics; the internal courtyard is a joint architecture that maintains privacy and achieves thermal comfort.
- The urban fabric of the Arab Islamic city is reflected in the level of the building's (3D) facades as a social or environmental need.

5.2 Practical side conclusions:

- The urban fabric of the city of Baghdad is more comprehensive of the characteristics of Islamic architecture than what is found in the fabric of the city of Samarra; it achieved 92% of the vocabulary of the theoretical framework, while the proportion of the city of Samarra to 67% only; due to the nature of Baghdad as one of the cities of capitals, which imposes not limited properties while the city of Samarra focused its military nature on the geometric characteristics.
- The results of the application showed that the Arab Islamic city was planning on the engineering characteristics as it achieved 100%, followed by the social characteristics as achieved by 75%. Also, we notice the variation in the percentage of aesthetic characteristics according to the nature of the Arab Islamic military or residential city is equivalent to geometric characteristics.

6. Recommendations.

- The research recommends benefiting from the characteristics as an organized strategy for the planning of the Arab Islamic cities because of its multi-design possibilities, due to the diversity of its mechanisms, techniques, types, elements and treatments, which are reflected in the shape of urban urbanization from both internal and external levels, as well as their direct impact in determining the degree of simplicity or complexity.
- The research recommends the need to integrate indicators of the characteristics of Arab Islamic cities in the systems of practice planning and operational, as well as the need to expand the other characteristics of the research as the characteristics of construction.

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