Urban Pathology in Residential Neighborhoods: A Case Study in Dahana and Qanbar Ali Areas

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Abstract. The metropolitan cities especially the residential areas in the centers of the old cities suffer from several problems that reflect their urban pathology. These problems have clearly affected the quality of urban life and hence the satisfaction levels of inhabitants. Accordingly, the current research attempt to identify the most important indicators that deal with the concept of urban quality related to the living in old residential areas. In addition, the research evaluates the extent of application of these indicators on the study area to reach a remedy using the most recent trends concerning the planning side and scientific means as a practical application. The adopted study area is a part of the important historical areas of Baghdad (capital of Iraq) and is part of its historical center. A questionnaire-based field survey has been conducted to collect residents’ opinions and satisfaction levels regarding a variety of urban living indicators. The exploratory and descriptive analyses of the responses reflected the overall dissatisfaction of the residents. In addition, the study has examined the extent to which smart urban quality characteristics are achieved in the study area. The results revealed that most of these indicators are weakly verified.

1. Introduction
The current research deals with the explanation of the concept of urban pathology and the ways to compare the body of the city to the human being’s one when they experience a disease. Many urban centers have been experiencing an imbalance in the residential environment which in general reflects a symptom of what is called urban pathology. The objective of the research is to diagnose urban pathology in city centers, identify its most important causes and indicate the effective treating approaches. The research hypothesizes the existence of a set of factors (social, economic, environmental, physical and institutional) that may cause urban pathology in urban centers. Questionnaire-based field surveys were adopted in line with several analytical and descriptive analyses to diagnose and identify the most important causes of the problem. The questionnaires have aided in measuring the satisfaction of the residents regarding their environment.

2. The Theoretical Side
2.1. Urban pathology
There are several scientific studies that have attempted to compare the disease in human body to that in a city; in that the illness starts in specific part of the body and then may move to the rest of the body. The general negative effect is the clear imbalance in the functions of that body (the city). The reasons behind comparing the city to the human body can be summarized as follows [1]:

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1- Human body has specific characteristics and functions for each part of it.
2- The being is an independent individual with specific limits and a specific size.
3- As in the city, human body does not change its size by expanding or swelling or adding extra unlimited parts, instead it rebuilds itself, regulates its shape and changes its size up to certain borders and thresholds.
4- As in the city, the change in human body shape is attributed to essential changes and is not easy to divide it internally since it has different parts. These parts are closely related with each other.
5- The overall function of the body is as complex as the city and cannot be understood simply by understanding the nature of other parts.

Figure 1 below shows an image resembling the human body’s living organisms within the overall layout of the city (organic city) [2].

Figure 1. An image representing the comparison of the living organisms of a man in the layout of the city [2].

Urban pathology is a serious phenomenon that has emerged with the developments occurred due to the excessive urbanization in cities along their historical development; specifically, with the development in industry and the resultant overpopulation in city centers. The spatial proximity of activities, especially commercial and administrative ones, has affected the typical housing function of the center, as the residential areas start to suffer from the invasion of other functions, especially the commercial one. Urban pathology is also appraised as the imbalance in the urban environment that includes the spatial, social and economic structure due to the effects of excessive expansion and rapid growth in cities [3]. According to [4], urban pathology is also described as human pathology that suffers from oppression in the city - the city where the daily life turned into a state of suffering due to pollution of all kinds. Urban pathology also may include political and economic diseases that have led to negatively affect well-being and the life quality.

2.1.1. Factors causing the spread of urban pathology in city centers
The city center is particularly important for communities and their countries. Historically, it is the economic center of cities. It includes the administrative, political, intellectual, cultural and recreational
activities of the city as a whole [5]. The city center may also called the Central Business District (CBD) that represents these activities. The concept of down town may represent the beating heart of the city center that is the focus of civil life [6]. Down town retail is a term that reflects the inclusion of city center of main buildings, most notably shops, stores, offices, clubs, banks, hotels, cultural centers, museums and civil and political centers that govern the city locally.

Urbanization is also one of the main causes of the prevalence of urban pathology. The concept of urbanization refers to the proportion of population living in urban areas (cities) and thus must be distinguished from urbanism. Urbanism has many implications related to the people’s lifestyle whereas urbanization is the process by which people move from villages and rural areas to the cities. Urbanism is the product of the process of urbanization and can be measured by two main indicators: the number of city residents and the number of cities [7]. Urbanization is related to the concept of urban system, which is a group of human urban centers with their multiple natural and human characteristics that consists of a system of mutual different structural, functional and site relations with each other forming the so-called urban pyramid. This pyramid reflects a high rate of urbanization and also closely related to manufacturing and technological development.

Urban growth merely indicates an increase in the population in urban regions, and it is numerically different between urban places [8]. It also illustrates many of the factors that contributed to the complexity of life in urban society and to the development of social and educational institutions and other in terms of quantity and quality. It also may show the population increase rate, due to high fertility rate or internal and external migration. Urban growth is usually accompanied by the horizontal and vertical expansion of urbanization in order to meet the basic needs of the population of various services [9]. Urban growth in the demographic sense means the growth of the urban population whereas urban growth in its urban sense means the expansion of urban structures in general and cities in particular. The negative effects of urban growth can be summarized into two aspects [10]; (1) uncontrolled urbanization and expansion due to the rapid increase in population, (2) altering the basic functional sectors of the city.

The urban system is constantly subjected to kinds of transformation (spatial dynamics) which are a result of the growth factors in the city centers as indicators of the phenomenon of urban growth in its contemporary concept. The most important of which are the deterioration in the status of cities and the emergence of a clear spatial imbalance. All these factors have become stressful, repellent and influential in the residential blocks in these central areas that suffer from neglect, urban decay and economic problems. For example, house owners in city centers suffer from several problems such as [11]:

1- Urban decay of buildings because of the aging and climatic factors.
2- Problems experienced by the family inside the house itself such as overcrowding and lack in housing services.
3- Social problems in the residential area due to the overlap of several activities and hence the lack of the audio and visual privacy.
4- Deterioration of the internal and external roads and streets in the residential areas.
5- Difficulty of movement within these areas due to their narrow roads and high population density, shoppers and visitors.
6- Environmental problems, especially lack of waste management as well as air and water pollution.

2.1.2. Handling the effects of urban pathology in residential neighborhoods
After the diagnosis of urban pathology in residential neighborhoods and identify the most important causes, we touch upon the most important means to address and mitigate this pathology, which is spread in several aspects in the residential environment of urban centers and the adoption of modern
policies that follow the principle of sustainability, and its most important one is the smart sustainable growth and urbanism quality.

2.2. Urbanism quality:
Applied quality can be defined as the conformity and appropriateness according to specific standards, needs and requirements [12]. As an idiom, quality is how to meet the needs and desires of people that affect their satisfaction about the services [13]. Life quality is the perception of the individuals for living situation in the context of the prevalence standards and values in the society [14]. According to the Urban Design Guide [15], urban quality is the policy or management for excellent planning and development taking into account the principles of good and sustainable planning for the development and improvement of the city to achieve spatial sustainability and high-quality and attractive urban environment that work on cohesion and social interaction according to mechanisms that support comfort, safety, security and well-being. There are several objectives for urban quality [16], examples include: (1) achieving medium and sustainable density of residential neighborhoods, (2) creating a cohesive urban structure, (3) creating an integrated neighborhood to achieve sustainability and diversity, (4) enhancing transport services and infrastructure, (5) focusing on the development of mixed-use residential neighborhoods and (6) supporting new residential community.

2.3. Sustainable smart growth:
According to [17, 18], smart growth is the development that serves the economy, society and the environment. Smart growth works on creating the optimal location to accommodate development, supporting economic and business, providing housing units for different incomes, encouraging clean transportation, creating a sense of place, and providing a clean environment [19].

2.3.1. Smart growth trends
1- Smart growth for manage growth
Smart growth is a tool to manage growth and counter the negative effects of urbanization by finding solutions to these problems through the reactivating of the city center and increasing the population density and managing the infrastructures to control the growth [20, 21].

2- Smart growth as a policy
Smart growth is a set of policies that includes a set of goals that attempt to treat urban sprawl; to limit outward expansion, encourage high development densities, encourage mixed land use and public transport, revitalize and reactivate old areas, maintain open space, and promote affordable housing [22, 23].

3- Smart growth / as a strategy
Smart growth is a planning strategy that includes a set of factors aimed at decreasing the costs of providing public infrastructure and services, improving accessibility and reducing per capita vehicle travel, and minimizing transportation costs. It also aids in the integration of residential neighborhoods economically and socially, providing affordable housing [24].

2.3.2. Principles of smart Growth:
Of the key smart growth principles mentioned by the Smart Growth Network are: creating a range of residential opportunities and options, developing walking neighborhoods, promoting strong sense of place, promoting land use mixing, making development decisions predictable, fair and cost-effective, and providing a variety of transportation options. The principles of smart growth are also defined as a form of development that includes multiple use, high-density planning, sustainable transport and the establishment of environmentally-friendly walking paths within the city landscape [25].

2.3.3. Smart Growth for Residential areas:
According to [26], smart growth calls for high-density, pedestrian-oriented, mixed-use development, compact cities, suburbs surrounded by agricultural land and open spaces. Two of the main objectives of smart growth is to reduce the spread of low-density housing development and developing commercial activities along arterial roads. Similarly, it was referred to the relationship between affordable housing and smart growth through the adoption of laws that encourage new developments of affordable housing [27]. In addition, the study also emphasized the principles of mixed use, bringing housing closer to work, solidarity, activating existing neighborhoods, community participation, and achieving a sense of neighborhood by availing affordable, smart and sustainable neighborhoods.

2.4. The relationship between urbanism quality and sustainable smart growth

Recent trends in urban planning include the integration of urban quality indicators with smart growth as the adopted mean to implement these indicators. Smart growth refers to the reshaping of the whole urban form and adopting land-use preferences by focusing on the economic and environmental dimensions of spatial organization. Smart growth includes indicators that can be used in all cities to ensure the social and economic sustainability required by urban renewal [28].

3. Applied practical aspect: Study area (Qanbar Ali and Al-Dahana/ Al Rusafa Historical Center)

3.1. Description of the study area (historical introduction):

The study area is part of the important historical areas of Baghdad (capital of Iraq) and is part of its historical center which has been developed during several time stages. These stages have added new landmarks and morphology that changed its urban composition, the most important characteristic of urban historical centers is their distinctive symbolic value and its cultural and scientific history as Baghdad was a focal center for science, art and culture. Previously, before the initial planning of Abu Jaafar al-Mansur for Baghdad, Baghdad was mentioned in the Chaldean and Babylonian blogs as well as the Assyrians and some Arab blogs before and after Islam. The researcher has chosen two residential areas, Qanbar Ali area and Al-Dahana area which are located in the center of Baghdad (Al-Rusafa neighborhood at Al-Jumhuriya), where the two areas are located on two main streets, namely Al-Jumhuriya Street and Al-Kifah Street, and surrounded by a historic street and a historical market. The aim is to diagnose and explore the satisfaction of the quality of the residential area according to the indicators that were derived from the theoretical framework. Figure 2 shows the location of the study area.

It is useful to highlight the features of Al-Rusafa urban area and its most important symbols and landmarks. The city is a mix of economic and social relationships that are regulated by customs, legislation and laws implemented by the state. In the near past, Baghdad was established as a result of markets that grew up at the intersection of roads and rivers, these intersections were the basis of commercial centers establishing two poles, one at the Babylonian dam in Karkh region and the other at the Zinderud monastery in the region of Al-Khilani. The study area was previously surrounded by Baghdad wall in the east, as well as the historic Tuesday market within it, which dates back to the Kingdom of Eshmunna, as markets were backbone of the city. Figure 3 illustrates the urban land uses in the study area previously and currently.
Figure 2. A map shows the location of the study area (Source: the researchers based on GIS2019 program).

There is a clear change in the use of urban land in the study area and based on the results of the field study that there is a significant imbalance in commercial use which has affected the residential use. The proportion of land use previously and currently are shown in Table 1 and Table 2 respectively with land use ratios.
Table 1. Land use rates previously (Source Researchers effort: field study, 2018, 2019)

| Land use       | Area is sqm | Percentage of each use |
|----------------|-------------|------------------------|
| Mixed use      | 68803.99    | 12.54%                 |
| Commercial     | 36560.79    | 6.67%                  |
| Public services| 23492.98    | 4.28%                  |
| Residential    | 135655.10   | 24.73%                 |
| Industrial     | 4143.41     | 0.76%                  |
| Open spaces    | 6958.43     | 1.27%                  |
| Parking        | 29861.12    | 5.44%                  |
| Transportation routes | 243038.09 | 44.31%            |
| Area of study area | 548513.90  | 100.00%               |

Table 2. Shows current land use ratios (Source Researchers effort: field study, 2018, 2019.)

| Land use       | Area is sqm. | Percentage of each use |
|----------------|--------------|------------------------|
| Mixed use      | 51474.31     | 9.38%                  |
| commercial     | 100868.08    | 18.39%                 |
| educational    | 7845.99      | 1.43%                  |
| religious      | 4777.00      | 0.87%                  |
| residential    | 107413.96    | 19.58%                 |
| Open spaces    | 6945.36      | 1.27%                  |
| parking        | 26151.12     | 4.77%                  |
| Transportation routes | 243038.09 | 44.31%            |
| Area of study area | 548513.90  | 100.00%               |

3.2. Results of the field study

The urban quality is achieved by determining the satisfaction of the residents in the residential areas and therefore it was necessary to measure the satisfaction of the residents based on the prevailing conditions in order to assess the extent to which the housing quality is achieved. The researcher decided to focus on important indicators to measure the current satisfaction level of the residents using main and secondary questions based on triple Likert scale. Then extracting the weighted medium as well as the arithmetic average. The number of families reached is 62 which was determined by selecting a simple random sample for the two residential areas according to the following equation:

\[ n = \frac{(p \times (1-p))}{((SE ÷ t) + [1-p) ÷ N])} \]

where community size = N, the standard score corresponding to the significance level 0.95 and t = 1.96, the error rate is equal to 0.05, property availability and neutral ratio = 0.50 p.

4. Analysis of residential quality indicators

4.1. Results of satisfaction levels

According to Table 3 and after analyzing the satisfaction rates according to the questions listed in the questionnaire form for the secondary and main indicators of residential quality, it was found that the arithmetical average of all the questions is (0.5). This indicates a poor level of special answers and that in return reflects the dissatisfaction of the population with the quality of housing in Dahana and Qanbar residential regions.
Table 3. Satisfaction level results for main and secondary quality indicators*

| Main indicator | SL. NO. | Questions for secondary indicators                                                                 | Good | Average | Poor | weighted average | Sample number | Satisfaction rate |
|----------------|--------|-----------------------------------------------------------------------------------------------------|------|---------|-----|------------------|---------------|------------------|
| Smart Quality Index in Residential areas | 1      | What is your assessment of your current housing unit?                                                | 9    | 20      | 33  | 1.6              | 62            | Poor             |
| 2              |        | What is your assessment of number of rooms in the housing unit?                                      | 9    | 22      | 31  | 1.6              | 62            | Poor             |
| 3              |        | What is your assessment of the area of the housing unit?                                             | 8    | 20      | 34  | 1.6              | 62            | Poor             |
| 4              |        | What is your assessment of your housing unit design?                                                 | 12   | 26      | 24  | 1.8              | 62            | Average          |
| 5              |        | What is your assessment of the overcrowdedness in your housing unit?                                | 8    | 14      | 28  | 1.6              | 62            | Poor             |
| 6              |        | What is your assessment of the building materials of your housing unit?                             | 12   | 10      | 38  | 1.6              | 62            | Poor             |
| 7              |        | How satisfied are you with aesthetics of your housing unit?                                         | 9    | 18      | 35  | 1.6              | 62            | Poor             |
| 8              |        | What is your assessment of the multi-purpose usage of the housing unit?                             | 8    | 11      | 33  | 1.5              | 62            | Poor             |
| 9              |        | What is your assessment of the social status and the relations between the residents and commercial shops owners in your housing unit? | 13   | 16      | 33  | 1.7              | 62            | Poor             |
| 10             |        | Is there an infrastructure to avoid the natural and un-natural hazards (terrorism, disparity of spatial infrastructure, lack of coherency among individuals, squatters and the loss of safety and security)? And how flexible they are in solving the problems in your housing unit? | 7    | 12      | 43  | 1.4              | 62            | Poor             |
| 11             |        | What is your assessment about the current change of the place’s identity where you live, as it considered a historical place with high spiritual and personal value? | 10   | 15      | 36  | 1.6              | 62            | Poor             |
| 12             |        | What is your assessment about your region’s facilities for people with special needs?               | 2    | 6       | 54  | 1.2              | 62            | Poor             |
| 13             |        | What is your assessment about your region’s infrastructure services for telecommunications, transportation or surveillance cameras? | 5    | 20      | 37  | 1.5              | 62            | Poor             |
| 14             |        | What is your assessment of the urban situation and the visual sight in your area?                  | 2    | 13      | 47  | 1.3              | 62            | Poor             |
| 15             |        | What is your assessment of construction status of the streets and their validity?                  | 11   | 14      | 37  | 1.6              | 62            | Poor             |
| 16             |        | What is your assessment of streets of your residential area (lightening of lampposts, stone bench, waste bins, green areas, and kids’ area)? | 4    | 16      | 42  | 1.4              | 62            | Poor             |
| 17             |        | What is your assessment of the basic services provided to you such as electricity, drinking water, sewage services in and Kerbside collection your residential area? | 11   | 14      | 37  | 1.6              | 62            | Poor             |
| 18             |        | What about the accessibility to the public services?                                                | 8    | 34      | 20  | 1.8              | 62            | Average          |
|                |        |                                                                                                    |      |         |     |                  |               |                  |
|                |        | Arithmetic average                                                                                 | 8.2 | 16.7    | 35.7| 1.5              | 62            | Poor             |
By analyzing the results of the indicators according to the sequence in Table (3) the following findings have been revealed:

1) What is your assessment of your current housing unit?
The residents’ answers to the question expressed clearly their dissatisfaction of their current housing level. The result of the weighted average was about (0.6). This dissatisfaction was specifically because of the small and deteriorated housing units and the lack of basic elements of housing quality.

2) What is your assessment of the number of rooms in the housing unit?
The residents’ answers to this question reflected their poor satisfaction level with weighted average of about 0.6. This dissatisfaction is because of the over crowdedness, small area and the small number of rooms.

3) What is your assessment of the area of the housing unit?
The residents’ answers reflected their poor satisfaction with the weighted average of about 0.6. This is because of the small area of unit accompanied relative to the high number of residents. Parts of the housing units were transformed into commercial use due to the rising into property value.

4) What is your assessment of your housing unit design?
The residents’ responses to this question expressed their medium satisfaction level with weighted average of nearly (1.8).

5) What is your assessment of the over crowdedness in your housing unit?
The residents showed their poor level of satisfaction with 0.6 weighted average, mostly because unit area is very small and not enough to all household members - especially that most of residents are of two families.

6) What is your assessment of the building materials of your housing unit?
The residents’ answers to this question expressed their dissatisfaction with average of 0.6. This is because of the obvious wear of units and the continuous use over time in addition to humidity and groundwater which affect the building materials causing erosion and partial collapse to the unit which is a safety issue.

7) How satisfied are you with aesthetics of your housing unit?
The residents revealed a poor level of satisfaction. The residents complained and expressed their uncomfortableness because of the obvious deformation of the residential environment they live in.

8) What is your assessment of the multi-purpose usage of the housing unit?
The residents had poor level of satisfaction and the weighted average was about1.5. This is due to the obvious invasion of commercial use within some dwelling units leading to usage disorder inside the dwelling unit that directly affecting the residents.

9) What is your assessment of the social status and the relations between the residents and commercial shops owners in your housing unit?
The residents expressed their medium level of satisfaction with 1.7 weighted average. Whereas there is a sort of societal consensus among the residents, sometimes there is a disagreement between them and the commercial shop owners as their shops were essentially assigned to be dwelling units.

10) Is there an infrastructure to avoid the natural and un-natural hazards (terrorism, disparity of spatial infrastructure, lack of coherency among individuals, squatters and the loss of safety and security)? How flexible are they in solving the problems in your housing unit?
The residents answered the question with (Poor Level) expressing their dissatisfaction and the weighted average was about1.4 as such infrastructures and services were very limited.
11) What is your assessment about the current change of the place’s identity where you live, as it considered a historical place with high spiritual and personal value?
The residents’ responses stated a poor level of satisfaction (0.6). They showed their dissatisfaction for the current negligence towards the historical area which considered a part of their residential region. In particular, the heritage houses, which reflect the identity of the historical area. According to the field observations, there were encroachments on some of these houses by changing their features using modern building materials which led to the visual distortion.

12) What is your assessment about your region’s facilities for people with special needs?
The residents expressed their medium level of satisfaction with 1.2 weighted average as they lacked some services in their neighborhood.

13) What is your assessment about your region’s infrastructure services for telecommunications, transportation or surveillance cameras?
The residents’ satisfaction was low with weighted average of around (1.5), that is because of the lack of such services.

14) What is your assessment of the urban situation and the visual sight in your area?
The answers reflected very poor level of satisfaction with 1.3 weighted average. This is because there is a clear defect and fragmentation in the urban form as the urban decay prevailed upon the residential buildings. In addition, the distortion of urban features which led to the distortion of the general visual sight.

15) What is your assessment about the validity and construction status of the streets?
The residents’ responses reflected a very poor level of satisfaction (0.6). That is because the streets and alleyways suffer from an obvious negligence; also the presence of street vendors causes a clear restriction to the ease of movement of cars and residents alike.

16) What is your assessment of streets of your residential area in terms of lightening, stone bench, waste bins, green areas, and kids’ area?
The residents showed their clear dissatisfaction with 1.4 weighted average. The reason is the lack of such services.

17) What is your assessment about the basic services provided to you such as electricity, water, sewage and waste removal services?
The residents were very unsatisfied with as low as 0.6 weighted average as a result of the lack of providing such services either because of the large usage pressure or the aging of the infrastructure of these services.

18) What about the accessibility to the public services?
The residents’ responses reflected medium level of satisfaction with weighted average of nearly 1.8. This is because the relatively easy access to such services as they are nearby. The area is a functional, commercial and administrative center.

Figure 4 depicts a schematic illustration for the results of residents’ satisfaction levels based on the information listed in Table 3.
The photos shown in Figure 5 reflect the field conditions of two housing units, the photos reflect the multi-purpose usage, physical wear and damage, and the regression in providing services.

4.2. Test of smart urban quality in the study area
The test of the extent of verification of smart urban quality in the study area was carried out in two phases. The first was based on the survey, verification, field monitoring, observation and interviews conducted by the researcher. The second stage relied on the results of the analysis of the questionnaire for the people and shops in the study area, which relied on the same indicators derived from the theoretical framework to test the extent to which these characteristics are achieved (see Table 4).
Figure 5. The photos reflect the actual conditions of two housing units (Source: The researcher, field study 2019).

Table 4. Test the extent to which smart urban quality characteristics are achieved in the study area

| Key indicator | Propriety | High | Verified | partial | weak | Not verified |
|---------------|-----------|------|----------|---------|------|--------------|
| Smart quality of residential neighborhoods | Compatibility of land uses | | ● | | | |
| | Mixture of land uses | | | | | |
| | Design quality of new buildings | | | | | |
| | (percentage of compatibility with old buildings) | | | | | |
| | The compatibility of the skyline with buildings | | | | | |
| | Treatment of urban decay of buildings | | | | | |
| | Satisfaction with housing (adequacy) | | | | | |
| | Treatment of visual pollution of historic buildings | | | | | |
| | Quality of the urban landscape (amount of visual pollution) | | | | | |
| | accessibility (satisfaction of transport quality and availability of streets and sidewalks infrastructure) | | | | | |
| | Infrastructure provides smart services (telecommunications, freight transport, security cameras, integrated information network) | | | | | |
| | The aesthetic of the place (exterior) | | | | | |
| | Aesthetic characteristics of the place (aesthetic and symbolic values) | | | | | |
| | Availability of green and open areas | | | | | |
| | Adequacy of municipal services (purified water to drink, waste removal services, sewage) | | | | | |
| | The availability of street furniture to serve people with special needs and others (lighting, seats, on-site services) | | | | | |
| | The percentage of preserving location identity | | | | | |
Integration of urban planning and design (integration)
Flexibility in planning - the extent to which the place can cope with environmental disasters (earthquakes and floods)

5. Conclusions
Based on the previous findings, the following main conclusions can be drawn:
1. There is a clear imbalance in the environment of residential neighborhoods in the city center due to the invasion of other uses such as commercial and other administrative uses since the center has become the heart of the capital (Baghdad city).
2. The agglomeration of businesses and jobs made the center vital and vibrant; however, this negatively affected the old residential shops.
3. There is a clear social, physical, economic and environmental diseases in the residential environment as indicated by the field survey and observations.
4. There is a clear lack of urban quality at the residential areas due to the lack of services and the apparent neglect of these ancient historical neighborhoods.
5. There is a state of dissatisfaction among the residents. The responses of the questionnaire-based field survey showed a clear deterioration in the indicators reflecting urban quality in their neighborhood.
6. The results of the test conducted to explore smart quality characteristics for the residential neighborhoods in the study area revealed that the majority of these indicators are weak. Examples include quality of design, satisfaction with housing, smart services, aesthetic characteristics, and integration between urban planning and urban design.

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