

# Requirements for achieving sustainable integration between historical areas and existing Egyptians cities.

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## Abstract

Historical areas are considered one of the urban heritage components due to their historical, cultural, and civilizational value, which connects the current society to its historical roots. Considering the existing cities as dynamic entities that are growing urbanely and demographically, their continuous growth has had a great impact on those historical areas. Some of those areas become suffering from various problems such as the deterioration of their urban fabric, and the failure to align their ancient entities with the current and future requirements of the city. This results in increasing in the pressure on the urban centers within which they are located, causing these centers to lose their primary service function.

This research paper aims to identify the requirements for preserving historical areas to achieve their sustainable integration, in order to provide guidance to the relevant planning authorities when implementing preservation projects. Therefore, the research included a theoretical study to define historical areas and their urban surroundings, as well as the concept and dimensions of the aimed sustainable integration. It also examined and analyzed some previous case studies to establish an initial list of the requirements for achieving the sustainable integration which the research aimed for. Then analyzed the results of an expert survey conducted by the researcher to determine the primary impact degree of each requirement related to different dimensions of development. According to these findings, the research identifies the most important requirements that contribute to achieving the targeted sustainable integration in historical areas, based on their priorities. Finally, the research concluded with some significant results and recommendations.

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## 1- Introduction

### 1-1 Research problem:

The main problem of the research lies in the lack of clear determination of the sustainable integration requirements between historical areas and existing Egyptians cities. as well as the absence of the indicators to measure the extent of integration between these areas and the existing city. This often leads to the unsustainability of conservation projects in these areas, making them incompatible with the current and future urban requirements of the existing city.

### 1-2 Research objective:

The research aims to identify the requirements that help achieve sustainable integration between historical areas and their urban surroundings. This will be done by identifying and achieving the four dimensions of sustainable development (environmental, social, economic, and urban) and determining the priorities for implementing those requirements. These findings will then be applied to the reality of the Egyptian case in a way that makes those historic areas keep pace and are integrated into the city's current and future urban requirements, through:

A – Attaining to put some indicators to measure the extent of achieving sustainable integration in historical areas according to the dimensions of sustainable development, as well as

determining the requirements for sustainable integration from an analysis of the theoretical basics and some previous experiences.

B - Providing an indicative plan to the competent planning bodies, including the four dimensions of integration and their indicators to enable the possibility of measuring the extent to which any historical region achieves such indicators. Moreover, presenting the necessary requirements for each indicator arranged according to its priorities.

### 1-3 Research hypothesis:

- The research assumes that sustainable integration in historical areas cannot be achieved through the urban dimension only, but by manipulating the environmental, social, and economic sustainability dimensions in addition to the urban dimension.

- The succession of the operations for preserving the historical areas requires a clear plan that includes the four dimensions of achieving sustainable integration with the priorities for their application, as well as a clear determination of the necessary requirements to facilitate the possibility of their application, implementation and follow-up.

#### 1-4 Research methodology:

The research paper follows the descriptive analytical survey theoretical approach.

- The theoretical approach involves studying historical areas, their urban surroundings, the concept of sustainable integration of historical areas and the dimensions of sustainable environmental, social, economic, and urban integration.

- The analytical approach analyzing involves analyzing some previous experiences to develop historical areas in order to achieve sustainable integration. These experiences include Beirut in Lebanon, Dereiyah in Saudi Arabia, Warsaw in Poland, the Lemarais neighborhood in Paris, France, and the Darb al-Ahmar area in Egypt.

- The surveying approach is shown through a questionnaire, in which a special questionnaire is conducted for specialists to determine the impact degree of each of the primary indicators of the various dimensions that is related to the (environmental, social, economic, and urban) development. That is to reach the most important requirements that help achieve sustainable integration of historical areas and determine priorities for their implementation.

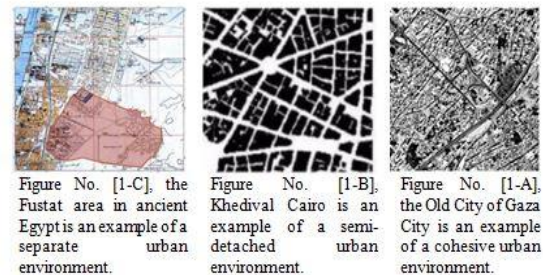
#### 2- Historical areas, their urban surroundings, and the dimensions of their sustainable integration:

**2-1 The concept of historical regions:** A region of historical value can be defined as the region that represents a specific historical era that arose during different times. These areas contain urban values represented in their architectural and urban elements, especially those that contain architectural values represented in their various components and details. These areas are characterized by the high consistency of their heritage buildings, which gives them distinction from other areas in terms of the urban fabric, the layout of building materials, heights, shapes of blocks and decorations with their relationships, the colors and lines used (1). Some historical areas are distinguished by their spatial location in the city, such as (the city center, on the outskirts of the city, and the entrances to the city), which gives them functional importance and thus visual characteristics that need to be studied to develop and achieve a balance between their functional needs and aesthetic qualities (2).

**2-2 The urban perimeter of historical areas:** These are the urban areas that are surround or adjacent to ancient historical areas. The urban environment of the historical areas usually suffers from many problems, including the deterioration of infrastructure, basic networks and the insufficiency of services to meet the needs of the residents of these areas. Because of the urban changes that occurred and continued over the decades, as residential buildings and houses were renewed for low-income people and new immigrants, obvious change has occurred at the land use map (3).

The patterns of the urban environment of historical areas are divided into three patterns (4): They are as follows:-

- The cohesive urban environment results from the adhesion and cohesion of buildings so that there are no spaces except courtyards and skylights. This style prevails in historic Cairo in Egypt, and the old city of Gaza City in Palestine, Figure No. [1-A].
- The semi-detached urban environment results from the urban fabric in which buildings and facilities are gathered in a distinct urban formation and that differs from the surrounding urban area (both urban and architectural). An example of this is the Khedival Cairo area, Figure No. [1-B].
- The separate urban environment exists in the form of separate groups or elements, which achieves the highest visual distinction (5). An example of this is the Fustat area (6), Figure No. [1-C].



**Figure (1):** Examples of different patterns of the urban surroundings of historical areas.

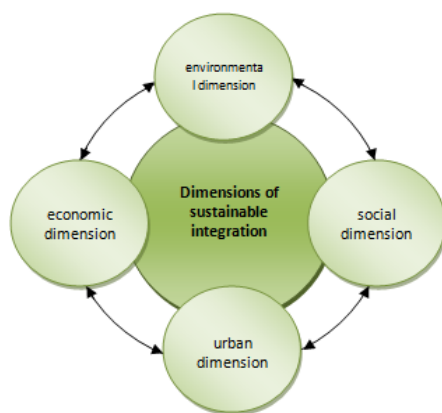
#### 2-3 The concept of sustainable integration of historical areas:

Sustainability is generally defined as “the ability to continue or survive” (7). It is also defined as “the process of balancing the urban, economic, social and environmental aspects, in a way that ensures the preservation, benefit and development of resources. It increased reliance on planning, management, participation and local support” (8). Urban integration in historical areas represents achieving compatibility between the various functions and the uses between historical and contemporary architecture in light of current and future requirements as well as achieving integration between the traditional and contemporary built environment within its urban surroundings. It is also an attempt to restore links among different aspects of development (9). This can be achieved by finding a balance between the material and moral cultural heritage in a way that ensures achieving compatibility between historical areas and the contemporary urban environment. This can occur through achieving various functions while preserving the attractiveness of the place with its historical nature (10).

In light of the previous definition of both integration and sustainability, it is possible to attain a definition of sustainable integration as sustainable development that includes the social, economic, environmental and urban aspects. This leads to the

improvement of the urban environment in the historical region itself, which extends to include the surrounding environment. This is achieved through the possibility of re-employment, use and compatibility with the current existing city situation, as well as performing a specific functional role for the city. This allows the city to keep up with its current and future urban requirements.

**2-4 Dimensions of sustainable integration:** To achieve sustainable integration between historical areas and their urban surroundings, preservation operations must be comprehensive for all sectors of the environmental, social, economic and urban community as preservation and development operations cannot achieve their desired goal by developing one sector without the other. Consequently, the planning process must be holistic, taking into account all four dimensions of development in a harmonized manner within the community, as delineated in Figure [2]."



**Figure(2):** Dimensions of sustainable integration

Based on this premise, the research paper incorporated an examination of development plans devised for various historical areas and analyzed the extent to which they achieved the four dimensions of sustainable development. These dimensions encompass the environmental, social, economic, and urban aspects. Each one of them comprises a set of indicators and essential requirements necessary for realizing sustainable integration of these historical areas within their urban surroundings in established cities. Each dimension will be detailed below.

**2-4-1 The environmental dimension:** It is considered one of the most important factors influencing sustainable development. It is related to the study of climate elements, building materials, providing a healthy environment for the population and the harmful impacts of modern urbanism on the surrounding context on historic building ...etc. It serves as a restriction on human development, and is mainly directed towards the use of natural and environmental resources which can be tracked and measured. The sustained focus on this dimension is imperative, as it directly addresses the fundamental requirements for the survival and well-being of humanity.

The environmental dimension of sustainability requires conducting environmental impact assessment studies for conservation projects and developing development plans in accordance with climate and environmental requirements such as congestion rate, noise level, air pollution, etc. It also requires implementing climate treatments according to studies, using building materials and environmental and local construction methods, Developing service networks and rehabilitating them to accommodate users' needs, providing a safe and healthy environment for residents of historical areas, as well as paying attention to environmental awareness and education for residents (12).

**2-4-2 The social dimension:** It underscores the need to enhance the quality of life for all citizens by raising basic levels of income and achieving social justice. It ensures that all segments of society have fair access to education, livelihood opportunities, and resources. Therefore, the social dimension is closely related to the imperative of considering cultural heritage as a part of sustainable development (11). The social dimension of sustainability encompasses the achievement of the following (12):

- Taking care to raise the standard of the individual living through preservation plans and projects. That can happen by creating technical cadres specialized in preservation, establishing social forums that include those concerned with architectural heritage affairs, and encouraging and highlighting distinguished preservation projects through media support as well as holding periodic exhibitions for them.
- Developing cultural awareness of the architectural heritage and supporting a sense of belonging to the heritage and the place through the stages of education and various media, cultural means (such as books, exhibitions, seminars and lectures), civil society associations, governmental and non-governmental organizations, specialized periodicals in preserving the architectural heritage and inviting specialists to showcase their experience in preserving the architectural heritage. This includes training local cadres from the historical areas in restoration and maintenance work through courses and training centers, as well as developing policies to raise public awareness of the importance and value of the architectural heritage within the preservation system
- Preserving inherited traditions emphasizes the importance of the presence of these traditions within an urban environment and their role in serving the social dimension. As some of these urban entities transform into monuments over time, their preservation become an implicit expression of the outcomes of a previous social structure.

**2-4-3 The economic dimension:** It is considered as a crucial requirement for meeting human needs and improving the sustained living conditions of citizens. Historic buildings have now assumed a vital role in promoting economic growth through urban revitalization. The urban heritage attracts tourists,

particularly in heritage cities, thereby bolstering the national and local economy. Consequently, sustainable cultural tourism has become a central theme in major research projects(11).

The economic dimension includes many requirements, which improves the level of the local economy and develops the financial return by tourism investment in the region and historical buildings. It also develops traditional industries and crafts in a way that helps them to continue and survive, employs local workers in the field of preserving historical areas, and establishes institutions to finance small-scale projects in order to support historical area facilities. It also helps to support the owners of architectural legacies through a grant or soft loan to assist them in the process of preserving the architectural legacy or through exemption from real estate taxes on the building, and establish craft training and shopping centers and for craft products.

**2-4-4 The urban dimension:** It aims to achieve comprehensive and sustainable urban development in historical areas through various measures:

- Architectural Heritage Documentation: By establishing an integrated system to document valuable properties and setting clear guidelines for dealing with these buildings.
- Preservation of Visual Identity: By preserving the visual identity of each historical area.
- Heritage Protection Studies: By conducting studies to protect and preserve architectural heritage, determining appropriate approaches for dealing with it and its urban surroundings.
- Rehabilitation of Historical Buildings: By rehabilitating historical buildings to prevent structural deterioration and repurposing them as museums, hotels, restaurants, or exhibitions, depending on the needs of the area.
- Rehabilitation of Plazas and Urban Spaces: By revitalizing squares and urban spaces.
- Improvement of Street Networks: By enhancing the street network, including main and secondary roads and pedestrian pathways.
- Street Lighting: By upgrading street lighting and providing special lighting for historical buildings to highlight their significance.
- Parking Facilities: By improving parking areas.
- Activity and Usage Reorganization: By reorganizing activities and usages within the area to align and integrate with prevailing activities and uses in the surrounding urban context.
- Land Use Map: By studying land use patterns and identifying available land for development.
- Integration with Technological Advancements: By connecting and integrating historical areas with technological advancements.
- These actions collectively contribute to the comprehensive and sustainable urban development of historical areas while preserving their cultural and architectural heritage.

### **3- Previous Experiences:**

Some international, Arab, and local experiences were presented and studied to identify the most important requirements and indicators that help achieve sustainable integration in historical areas. And assess to what extent each experience fulfilled the four essential dimensions of sustainable integration. These experiences were chosen due to their similarity to the economic, social, environmental, and urban circumstances in Egypt's historical areas, making them relevant to the research objectives. The experiences of the city of Beirut in Lebanon and the Dereiyah neighborhood in Saudi Arabia were chosen because they are Arab countries that are similar to Egypt in some economic, social, environmental and urban conditions. Additionally, two international experiences were chosen which are Warsaw in Poland and Le Marais District in Paris. These international experiences are pioneering examples that have achieved success in the development of historical areas. Finally, the experience of Al-Darb Al-Ahmar District in Egypt was also included, as it addressed the four targeted dimensions of development in the research.

**3-1 Introduction to previous experiences:** The historical background, problems of the region and the objectives of the development project were presented for each experience.

#### **3-1-1 Experience of developing the Darb Al-Ahmar area in historic Cairo, Egypt:**

It is considered one of the most important local experiences in which preservation projects and initiatives were undertaken. It serves as a model for implementing community development programs to uplift historically deteriorated areas in terms of urban, social, economic, and environmental aspects. This was achieved through the collaboration of various governmental and non-governmental entities, as well as local residents (24).

**Firstly: Historical background:** The area is considered one of the most important and oldest areas within the Historic Cairo District, as it contains many antiquities, which include 65 Islamic antiquities registered by the Supreme Council of Antiquities, in addition to containing the Al-Azhar Mosque, in addition to a large number of unregistered buildings of a distinct architectural character. The region also contains many commercial economic activities and traditional industries associated with the region, such as: the tent industry, marble works, handicrafts, copper and leather goods, carpentry and mother-of-pearl works (24).

**Secondly: Challenges faced by the historical area:** The region suffered from several problems, including (25):

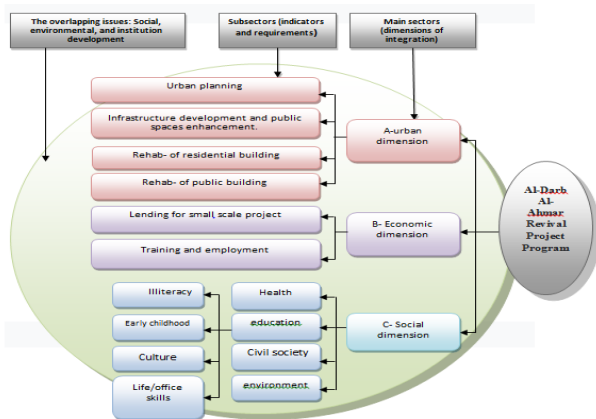
- Social problems represented by the decline and decline of the social status of the residents of the historical region due to the migration of the original population towards newer urban areas, and the replacement of new residents who are the product of internal migration from rural to urban areas.
- Deterioration of the urban environment: The condition and planning of buildings have deteriorated, and pollution has spread. Economic, social, and environmental problems

have escalated, and there is a lack of adequate services, especially healthcare services.

- Deterioration of basic infrastructure networks: Infrastructure networks have deteriorated, road networks are congested, and they suffer from narrow widths, winding paths, and lack of pavement
- Insufficient funding for housing projects and infrastructure improvement: There is a lack of funding for housing projects and improving the infrastructure. It is also insufficient to meet the needs of the area.
- Residents of the area have suffered from poverty, unemployment, and illiteracy.

**Thirdly: Project objectives:** The project aims to achieve the following:

- Create a set of activities to achieve sustainable economic and social development.
- Improve housing and environmental conditions in the Darb Al-Ahmar community and enhance the living conditions of its residents.
- Restore and rehabilitate a number of residential buildings.
- Develop public spaces alongside intensive social and economic development programs, in addition to vocational training for the residents.
- provide easy small loans
- Restore a number of historical and archaeological buildings in the area (25).
- The programs of the Darb Al-Ahmar project are divided into three main sectors, each of which is further divided into sub-sectors, in addition to some overlapping issues, as shown in Figure [3].



**Figure (3):** Programs and sectors of the Darb al-Ahmar area revitalization project according to the implementation plan (23).

Based on the above, it is evident that most previous experiences share common challenges faced by historical areas. These challenges encompass social issues, such as the migration of original populations leading to the deterioration of the historical area. They also include urban problems, such as the loss of many historical buildings within the area, either due to wars or a

lack of attention to historical regions. It results in the demolition and removal of many of these historical structures. Furthermore, environmental and economic issues have also had a negative impact on these areas.

### 3-1-2 Experience of developing the historical area in Beirut, Lebanon:

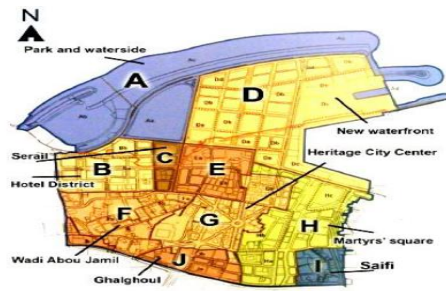
**Firstly: Historical background:** The history of Beirut dates back to nearly five thousand years, and throughout its history, the city has witnessed numerous wars, both civil and external, resulting in extensive destruction within its historical city center.

**Secondly: Challenges faced by the historical area:** The historical area of Beirut has faced several challenges, including:

- Civil wars: Civil wars led to the complete destruction of the historic center of Beirut, resulting in the destruction of approximately 900 historical buildings and the loss of the historical city center's role as the capital of Lebanon (13).
- Migration of original residents: The original inhabitants of the historical city center migrated due to these wars.
- Urban fabric disruption: The urban fabric experienced disruptions due to irregular building heights within the same street and modifications to building facades that did not align with the historical character of the area (14).
- Environmental issues: One of the most significant environmental problems was the presence of a waste dump extending over an area of 250,000 square meters in the sea off the coast of the historic downtown area, rising 14 meters above sea level. This had negative environmental impacts like polluting the sea and posing health risks to the city's residents (13).
- Economic Problems: Economic issues arose due to the disappearance of the old markets in downtown Beirut, which were historically the economic foundation of the area (14).

**Thirdly: Objectives of the development Project:** The Lebanese government entrusted the private sector (Solidere Company) with the Beirut Central District reconstruction project in 1994. It is considered one of the largest ten projects globally. Its main objectives include (15):

- Dividing the city center into ten sectors which encompasses the historical area and a newly developed zone to be built over the landfill facing the sea, as shown in figure [4].
- Preserving the heritage identity and integrating diverse activities.
- Transforming the historical city center into a vibrant and active hub 24/7.
- Responding to make forces and requirement.



**Figure (4):** Dividing the central Beirut area into ten sectors according to the 1994 plan <sup>(14)</sup>

### 3-1-3 Experience of developing the historic Dereiyah in Saudi Arabia:

**Firstly: Historical background:** The historical Dereiyah played a pivotal role in the political history of the Kingdom of Saudi Arabia, as it served as the capital of the first Saudi state. However, the disappearance of Dereiyah's urbanization in the early 19th century left much of it abandoned. The development program for historical Dereiyah integrates urban, cultural, economic, and social dimensions with the environmental development requirements of Wadi Hanifa, forming a model for oasis urbanization, as illustrated in figure [5].



**Figure (5):** The historic city of Dereiyah in Saudi Arabia <sup>(16)</sup>

### Secondly: Challenges faced by the historical area:

Historical Dereiyah faced several problems, including <sup>(17)</sup>:

- Rapid urban growth with little attention to historical preservation, leading to the loss of many historical buildings, demolition, and removal.
- The migration of original residents from the area and the settlement of foreign labor and low-income citizens, resulting in the deterioration of the area and its transformation into negative environments in terms of social, health, and economic aspects.
- An inefficient infrastructure network with chaotic routes.
- Lack of regulations for the development of surrounding areas in terms of ownership, planning, design, restoration, and removal.
- Poor organization of traffic and its relationship with parking, as well as a lack of gathering and waiting areas.

**Thirdly: Project development objectives:** The development project for Dereiyah aimed to achieve several objectives, including <sup>(17)</sup>:

- Developing Dereiyah as a cultural center that radiates the cultural message of Dereiyah at the local, national, and global levels.
- Transforming historical areas into major cultural and civilizational centers at the national level.
- Developing Dereiyah as a model for oasis urbanization and utilizing its historical neighborhoods as the nucleus and hub for urban and cultural development.
- Preserving the urban fabric of the historical area, repurposing it to serve various activities, and providing the foundations for cultural, social, and economic development.
- Preserving the region from deterioration and achieving sustainable development by preserving natural environmental elements.
- Promoting economic development through agricultural, touristic, and recreational activation, as well as encouraging local crafts and industries.
- Encouraging private investments to participate in the development program.
- Registering the Al-Turaif district in Historical Dereiyah as a UNESCO World Heritage site.

### 3-1-4 Experience of the historic district of Warsaw:

**Firstly: Historical background:** Warsaw, the capital of Poland, is distinguished by its rich urban fabric, most of which was severely damaged during World War II. The experience of rebuilding the city's historical center is considered one of the most significant European experiments that preceded Arab experiments in rehabilitating ancient cities by more than a quarter of a century. The city is located on the Vistula River, with a history dating back to the ninth and tenth centuries <sup>(18)</sup>. Its urban fabric is characterized by a regular strip in which buildings are connected on both sides, forming continuous urban walls, as shown in Figure [6]. The street network was a mixture of perpendicular grid and irregular radial patterns <sup>(19)</sup>.



**Figure (6):** Historical buildings in Warsaw city center <sup>(19)</sup>

**Secondly: Challenges faced by the historical area:** The city suffered destruction as a result of wars, and after the end of World War II, it witnessed economic, social, and urban disturbances.

**Thirdly: Objectives of the development Project:** The revival of the historical center of Warsaw was a comprehensive project that was consistently implemented under the supervision of the Reconstruction Office from 1945 to 1951. Its objectives included:

- Utilizing the structures and undamaged buildings built between the fourteenth and eighteenth centuries.
- Developing the street network and squares that date back to the Middle Ages, including the Main Market Square and the city walls <sup>(20)</sup>.

**3-1-5 Experience of developing the historic Le Marais district in Paris:**

**Firstly: Historical background:** The 1789 revolution and its consequences were the fundamental components of the French concept of heritage preservation. The French Revolution led to a rampant intellectual revolution that increased interest in architectural and urban heritage. Paris is considered a living and continuous example of urban renewal and revitalization. Since the late 19th century, when Haussmann opened new streets and expanded the city's circular roads and main thoroughfares, Paris has been known for its modifications in urban planning to accommodate the requirements of modern life <sup>(22)</sup>.

**Secondly: Challenges faced by the historical area:** After the original inhabitants abandoned the old district, it deteriorated, and became inhabited by impoverished artisans. Various industrial uses proliferated within the confines of the private mansions. All available ground floor spaces were used for workshops and factories, also additional stories were added to the private gardens. With the growth of crafts based on industry and an increase in population density, the existing buildings were divided, and additional stories were constructed, leading to the deterioration of the area and historical buildings, as shown in figure [7].



Figure No. [7], Le Marais district in Paris <sup>(21)</sup>

**Thirdly: Project objectives:** Several objectives were established to preserve the historical areas, including:

- Preserving architectural and historical heritage.
- Maintaining the vitality of the neighborhood.
- Using indoor spaces as public gardens or green areas.

- Creating open spaces and preventing the construction of any unwanted buildings.

**3-2 Analysis of the dimensions of sustainable integration in the previous experiences:** The previous experiences have been analyzed extensively in terms of their application of the dimensions of sustainable integration, including environmental, social, economic, and urban dimensions. This analysis happens to identify common indicators among these experiences.

**3-2-1 Analysis of the environmental dimension:** The previous experiences have yielded elements and requirements of integration in the environmental dimension, as outlined in the attached Table [1].

**Table (1):** Elements and requirements for achieving the environmental dimension in the previous experiences.

	Beirut Experience	The Diriyah Experience	Warsaw, Experience	The Le Marais Experience	Al-Darb Al-Ahmar Experience
Environment dimension	Developing open spaces and increasing green areas. (18)	Utilizing the environmental assets of Wadi Hanifa to support tourism and cultural activities.			Focusing on regulatory and environmental aspects such as rooftop gardening. And Managing solid waste removal and garbage collection processes.

By analyzing the table above, it becomes evident that there was a focus on the environmental dimension in the historic area development projects of Beirut, Lebanon, Al-Dereiyah in Saudi Arabia, and Al-Darb Al-Ahmar in Egypt. However, there was no clear emphasis on this aspect in either the Warsaw, Poland, and Le Marais, Paris, projects, despite its significance within the dimensions of sustainable integration for historic areas. The environmental dimension in the previous projects included:

- Developing open spaces and increasing green areas, as seen in the Beirut, Lebanon, project
- Utilizing the environmental assets of the historic area to support tourism and cultural activities, as evident in the Al-Dereiyah, Saudi Arabia, project
- Addressing regulatory and environmental aspects, such as rooftop gardening and waste management, as observed in the Al-Darb Al-Ahmar, Egypt, project, as shown in Figure [8].



**Figure(8) :** Images of some of the environmental programs and activities in Al-Darb Al-Ahmar project (Environmental Dimension)<sup>(24)</sup>.

**3-2-2 Analysis of social dimension:** The study and analysis of previous experiences, elements and requirements for achieving the social dimension have been extracted as shown in the attached table, Table [2].

**Table (2):** Elements and Requirements for Achieving the Social Dimension in Previous Experiences.

	Beirut Experience	The Diriyah Experience	Warsaw, Experience	The Le Marais Experience	Al-Darb Al-Ahmar Experience
<b>Social Dimension</b>	*Reviving the image of the historical city center *Restricting community participation to property owners only through their contribution to the project's capital without involvement in decision-making processes, which led to criticisms and opposition from citizens (15).	*Providing factors for the stability of the original population in historical areas and enhancing their economies. *Raising awareness among the residents and encouraging their participation in the development process (26). Coordination between various government entities, the private sector, and the local residents (16).	*Rebuilding the historical city as it used to be to preserve its identity and authenticity. *Restoring activity and life to the city after the return of the original residents. *Emphasizing community participation of the residents. *Improving the standard of living of the population and implementing an agreed-upon urban development plan.	*Community participation and cooperation among stakeholders in preservation processes, including local authorities, planners, and civil society organizations. *Social advancement of property owners and the rehabilitation of their artisanal activities in line with the preservation goal. Promoting a culture of historic preservation and raising awareness among citizens about urban heritage.	The Aga Khan Foundation collaborated with other institutions, local non-governmental organizations, provincial authorities, neighborhood representatives, local entrepreneurs, and individuals residing and working in the area (27), Figure (10). * Developing social services such as healthcare and education by raising health awareness and providing healthcare services based on the actual needs of the local residents, reducing illiteracy rates, and improving the cultural and educational situation of the community.

By analyzing the previous table, it's evident that all the experiences discussed in the research have focused on the social aspect in the development of historical areas. In all the previous experiences, there has been a strong emphasis on "community participation" of the residents in the historical areas in the development projects, as well as "coordination between various governmental entities, the private sector, and the residents." However, the Beirut experience limited community participation to property owners who contributed financially without decision-making power. Figure [9] illustrates community participation in the Al-Darb Al-Ahmar project. The social dimension also included several other aspects that the previous experiences individually or to a limited extent followed, such as:

- Rejuvenating the image of the historical city as it once was, as seen in the experiences of Beirut, Lebanon, and Warsaw, Poland.
- Working on the return and stability of the original inhabitants in the historical area, as in the experiences of Dereiyah in Saudi Arabia and Warsaw, Poland.
- Improving the living standards of the residents and implementing housing units according to the reconstruction plan, as seen in the Warsaw, Poland experience.

Socially uplifting property owners, rehabilitating their craft activities, spreading the culture of preserving buildings and historical areas, and fostering citizen interest in urban heritage, as seen in the Le Marais neighborhood in Paris, France experience.



**Figure (9):** Community participation in Al-Darb Al-Ahmar, a part of the meetings held with the users<sup>(23)</sup>.

**3-2-3 Economic dimension analysis:** Through the analysis of previous experiences, important measures to achieve the economic dimension in historical area development projects were extracted, as illustrated in Table Number [3].

**Table (3):** Elements and requirements for achieving the economic dimension in previous experiences.

	Beirut Experience	The Diriyah Experience	Warsaw, Experience	The Le Marais Experience	Al-Darb Al-Ahmar Experience
<b>Economic Dimension</b>	*The presence of a thorough banking system helped in the economic revival. *Allocation of financial resources based on priorities. *Focusing on large-scale commercial projects with investment potential. *Rebuilding Beirut's markets and transforming the Foch Allenby and Nejmeih areas into open shopping areas.	*Restoring many historical buildings and re-function them . *Developing a plan for managing and operating historical areas.	*Employing and investing in the central square for popular celebrations. *Reducing reconstruction costs by reusing original building materials if available. *Establishing industrial zones in the modern city and providing necessary facilities. *Increasing foreign investments and the free market economy.	*Preserving artisanal and industrial activities and rehabilitating them in line with the goal of preserving the historic city * Availability of financial resources for planning and implementing government and non-governmental agencies.	*Facilitating microloans. *Involving investors and international organizations in establishing small projects to increase employment and training opportunities. *Expanding the establishment of small craft workshops contributing to the production of artisanal and tourist products. * Focusing vocational training for citizens on professions related to the rehabilitation of old houses(24)

The previous table illustrates that all the experiences covered in the research have shown a focus on the economic dimension to achieve sustainable integration in historic areas. It is evident that there are recurring points that the experiences followed, such as:

- Repurposing historic buildings and areas for economic investment, as seen in the experiences of Al-Dereiyah in Saudi Arabia and Warsaw in Poland. In Al-Dereiyah, the General Authority for Tourism and Antiquities managed and operated the At-Turaif neighborhood, attracting economic and touristic investments for the entire Al-Dereiyah area. Similarly, the central square in Warsaw was employed and utilized for popular celebrations.
- Preserving craft and industrial activities, as well as expanding the establishment of workshops that generate income to stimulate the area's economy, as seen in the experiences of Le Marais neighborhood in Paris and Al-Darb Al-Ahmar in Egypt, Figure [10].
- Facilitating microloans and establishing a sound banking system to develop small-scale projects and increase employment opportunities. It can be observed in the experiences of Beirut in Lebanon and Al-Darb Al-Ahmar in Egypt.



- Providing financial resources to planning and implementing authorities and distributing them according to priority, as practiced in Beirut and Le Marais neighborhood.

The economic dimension also included some individual or limited points followed by the experiences, such as:

- Focusing on large-scale investment projects, revitalizing old markets and converting them into open shopping areas, which enhanced the economic efficiency of the historic center, as seen in Beirut's experience in Lebanon.
- Reusing original construction materials in the reconstruction process if available, or using traditional methods and similar materials if the original ones are not accessible, as observed in Warsaw, Poland's experience.
- Establishing industrial zones in the modern city and providing service facilities, increasing foreign investments, benefiting from the advantages of a free market, and securing additional funding from the European Union, as exemplified in Warsaw, Poland's experience.
- Emphasizing vocational training in professions related to the rehabilitation of old houses, such as carpentry, painting, and tile manufacturing, in order to provide a source of livelihood for local residents, as practiced in Al-Darb Al-Ahmar in Egypt, Figure [11].



Figure (10): Training citizens on some crafts in the Al-Darb Al-Ahmar area.



Figure (11): Development of crafts and traditional activities in the Al-Darb Al-Ahmar area.

**3-2-4 Urban dimension analysis:** The urban dimension includes several important measures to achieve sustainable integration in historical areas. It can be identified through the

study and analysis of previous experiences, as illustrated in the following Table [4].

Table (4): Elements and Requirements for Achieving the Urban Dimension in Previous Experiences.

	Beirut Experience	The Diriyah Experience	Warsaw, Experience	The Le Marais Experience	Al-Darb Al-Ahmar Experience
Urban Dimension	<ul style="list-style-type: none"> <li>* Developing a program for preserving valuable buildings, especially in the Star Square area and the surrounding streets of Fosh (28).</li> <li>* Rehabilitating the urban fabric of historical areas and enacting laws that prohibit the construction of multi-story buildings in them.</li> <li>* Providing a transitional area between the old urban fabric and the adjacent areas, represented by green and open spaces.</li> <li>* Rehabilitating urban spaces in traditional centers, including the development of walkways, squares, and intersections at the external boundaries of the area to facilitate the flow of movement to and from the old centers.</li> <li>* Preserving the previous uses of buildings and historical areas and limiting their conversion to commercial uses to reduce pressure on them.</li> <li>* Developing the road network, transportation, and communications.</li> <li>* Creating a heritage trail that connects archaeological sites, historical public places, and heritage buildings (29).</li> </ul>	<ul style="list-style-type: none"> <li>* Conducting urban studies with the participation of a large group of international and local consultants to develop the implementation plan for the Diriyah and its tourism development plan.</li> <li>* Dividing the implementation plan into two phases.</li> <li>* Developing a management and operation plan for the area.</li> <li>* Restoring many buildings and palaces and reusing them as museums or administrative buildings.</li> <li>* Utilizing various documentation methods for facilities, such as drawings, photographs, and television recording.</li> <li>* Developing roads, public utilities networks, and services.</li> </ul>	<ul style="list-style-type: none"> <li>* Restoring the historic center by reconstructing the old city walls and gates, separating residential blocks from the wall structure, and rebuilding buildings to be exact replicas of what they were before the war.</li> <li>* Restoring the facades of buildings in the central market.</li> <li>* Prohibiting vehicular traffic from entering the old city and making it accessible only to pedestrians.</li> <li>* Replanting and developing the areas surrounding the historic center and implementing service projects for the new center.</li> <li>* Restoring additional gates in the walls to connect the old city to major pedestrian crossings.</li> <li>* Expanding the old streets and designing new road networks, as well as improving streets and sidewalks.</li> <li>* Enhancing transportation services, especially the subway.</li> <li>* Opening wide sight angles on the river.</li> <li>* Utilizing the central square, activating it, and hosting popular and musical events.</li> </ul>	<ul style="list-style-type: none"> <li>* Establishing criteria for identifying heritage neighborhoods of value and documenting activities within them.</li> <li>* Enacting strict laws to preserve historic buildings and reviewing plans regarding demolition and removal processes.</li> <li>* Exercising control over investors to compel them not to carry out their investment projects on preservation lands and areas.</li> <li>* Utilizing inner squares as public gardens or green spaces and utilizing them for constructing underground parking garages.</li> <li>* Conducting an inventory of buildings in the area and determining what needs restoration or demolition, as well as identifying what can be constructed on vacant spaces.</li> </ul>	<ul style="list-style-type: none"> <li>* Implementing a comprehensive maintenance program for the Ayyubid Walls and rehabilitating numerous residential buildings in the area</li> <li>* Developing open spaces and infrastructure, including water and sewage networks, electricity, street paving, and squares</li> <li>* Restoring historical buildings in the area</li> <li>* Enhancing the infrastructure of the Al-Zhafar Tower Street and converting it into a pedestrian-only street.</li> <li>* Establish a tourist route connecting the Al-Darb Al-Ahmar area to Al-Azhar Park through the Al-Mahrouq Gate to boost tourism and increase Egyptian visitor traffic</li> </ul>

From the study and analysis of the previous table, it becomes clear that all the previous experiences emphasized the urban dimension within the dimensions of sustainable development in historical areas. They focused on certain recurring points such as:

- Restoring historical buildings and repurposing them in line with the nature of the historical area, as seen in the experiences of Al-Dereiyah, Warsaw, Le Marais, and Al-Darb Al-Ahmar. In Al-Dereiyah, for example, some buildings were restored and repurposed such as museums or administrative and service buildings. These museums included the Dereiyah Museum at Salwa Palace, the Social Life Museum, the Arabian Horse Museum, the War Museum, the Trade and Finance Museum, and the Traditional Architecture Museum. Many palaces and historical facilities were also restored, and various documentation methods were used, such as paintings, photographs, and television filming.
- Similarly, in the Al-Darb Al-Ahmar district in Egypt, historical buildings like the Mosque and School of Umm al-Sultān Sha'ban and the surrounding area were restored. Additionally, there were efforts to rehabilitate the Khayr Bak Complex and develop the surrounding areas, including the historic Bāb al-Wazīr gate and the Aitmesh al-Bajāsi Mosque
- Rehabilitating urban spaces in historical centers, redeveloping the surrounding areas, and improving open spaces like public parks or green areas, or repurposing them as needed for the area's character, as seen in the experiences of Beirut, Warsaw and Le-Marase neighborhood.

- Developing road networks and improving infrastructure and facilities, as seen in the experiences of Beirut, Al-Dereiyah, Warsaw, and Al-Darb Al-Ahmar

**Additionally, the urban dimension included some points that were followed by the experiences, individually or to a limited extent as :**

- Developing a comprehensive preservation program for historical areas and creating an implementation plan divided into phases, as seen in the experiences of Beirut and Al-Dereiyah. In Al-Dereiyah, the implementation plan was divided into two phases. The primary phase included three development projects: the development of the Tarif district, the development of the Bujairi district, and the improvement of road networks and public facilities.
- Conducting urban studies with the participation of a large group of international and local consultants to create the implementation plan, as seen in the Al-Dereiyah experience.
- Establishing criteria for identifying heritage neighborhoods of value and documenting activities within them, as seen in the Le Marais experience.
- Enacting specific laws to preserve historical areas, as seen in the experiences of Beirut and Le Marais.
- Preserving the previous uses of buildings and historical areas and restricting modifications to commercial uses to alleviate pressure, as seen in the Beirut experience.
- Creating a tourist path to connect historical areas with public spaces, as seen in the experiences of Beirut, Lebanon, and Al-Darb Al-Ahmar in Egypt.
- Using various documentation methods and restoration techniques for facilities, such as paintings, photographs, and television filming, as seen in the Al-Dereiyah experience.
- Rebuilding the walls and gates of the old city or maintaining them, as well as rehabilitating existing buildings in the area, as seen in the experiences of Le Marais and Al-Darb Al-Ahmar.
- Restricting automobile traffic from entering certain historical areas or streets and converting them for pedestrian use only, as seen in the experiences of Le Marais and Al-Darb Al-Ahmar.
- Improving transportation services, especially subway systems, as seen in the Warsaw experience.
- Creating back axes for inner squares, allowing most houses to open onto them to provide privacy, as seen in the Warsaw experience.
- Opening wide river views, as in the Warsaw experience, is achieved by creating openings or alleys in residential blocks that are excessively elongated and reducing the depth of properties parallel to the riverbank. Additionally, the statue of King Zygmunt III was moved a few steps towards the river to make it visually accessible to pedestrians.

- Exerting control over investors to compel them not to implement investment projects on lands and areas designated for preservation as seen in the Le Marais experience.
- The following figures, numbers [12, 13, 14, and 16], illustrate some aspects of the focus on the urban dimension in previous experiences.



Figure (12-A): Depicts Nejmeh Square in Beirut <sup>(31)</sup>.



Figure (12-B): Shows Rue Foch after the completion of conservation works <sup>(32)</sup>.



Figure (12-C): Represents the master plan for the development of the city center of Beirut <sup>(33)</sup>.

Figure (12): Depicts the urban development of the historical area in Beirut, Lebanon.

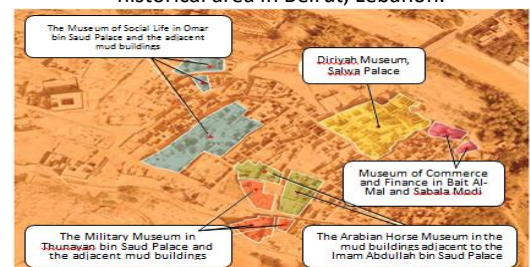


Figure (13-A): Illustrates the restoration of buildings and their reuse as museums in the Al-Tarif neighborhood in Dereiyah <sup>(34)</sup>.

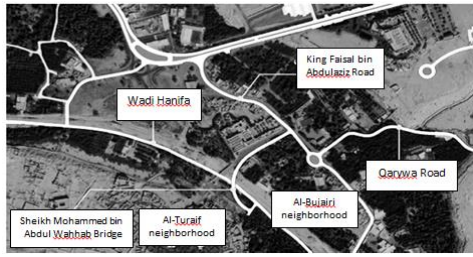


Figure (13-B): Shows the road network development project in Dereiyah (34).

Figure (13): Depicts the urban development in the historical Dereiyah experience in Saudi Arabia.



Figure (14): The walls surrounding the old center of Warsaw (19).



Figure (15-A): Um al-Sultan Shaaban Complex before and after restoration (25).



Figure (15-B): Tarbay Al-Sharief Complex before and after restoration (25).

Figure (15): Examples of urban development in the historic area of Al-Darb Al-Ahmar in Egypt.

**3-3 Indicators and requirements for achieving sustainable integration in historic areas:** As mentioned earlier, a set of indicators and requirements have been extracted to measure the extent of achieving sustainable integration in historic areas, both from theoretical studies and from some indicators extracted from previous experiences.

In Table [5] below, these indicators and requirements will be reviewed for use in a survey of experts to assess the importance of each indicator in achieving sustainable integration. It also helps to prioritize the requirements based on the opinions of specialists.

Table (5): Indicators and requirements for sustainable integration dimensions extracted from the analysis of previous studies and experiences

Dimension	Indicator	Requirements
The environmental dimension	Evaluating the environmental impact of the project	<ul style="list-style-type: none"> <li>- Studying the congesting rate.</li> <li>- Studying the noise rate.</li> <li>- Studying the air pollution.</li> <li>- Efficiency of the infrastructure network.</li> <li>- Identifying the workshops and crafts present in the area.</li> <li>- Studying the road network and determining the extent of pedestrian movement overlap with vehicular traffic.</li> </ul>
	Climate treatments	<ul style="list-style-type: none"> <li>- Architectural treatment such as openings, mashrabia, courtyards, arches, etc.</li> <li>- Urban treatments such as landscaping, rooftop gardening, open space development, and increasing green areas.</li> </ul>
	Environmental treatments to ensure a safe environment.	<ul style="list-style-type: none"> <li>- Using local building materials.</li> <li>- Using environmentally and locally sustainable construction methods.</li> <li>- Relocating polluting activities outside historic areas.</li> <li>- Establishing waste management systems for solid waste and garbage disposal.</li> </ul>
	The administrative tasks	<ul style="list-style-type: none"> <li>- Organizing environmental awareness and education campaigns for the residents of the historical area to promote its preservation.</li> <li>- Launching informational campaigns to leverage the environmental assets of the area in support of tourism activities.</li> </ul>
The social dimension	Preserving the identity and authenticity of the historical area.	<ul style="list-style-type: none"> <li>- Providing factors for the stability of the indigenous population in the area and developing their economies.</li> <li>- Preserving cultural traditions, emphasizing that heritage can coexist within an urban environment. It includes a social environment primarily aimed at serving this social aspect.</li> <li>- Reviving the historical area in the way it used to be.</li> </ul>

	Elevating the social status of the residents and caring for the improvement of the individual's standard of living.	<ul style="list-style-type: none"> <li>- Improving the quality of life for citizens and raising their standard of living.</li> <li>- Rehabilitating the residents' activities to align with the area.</li> <li>- Reducing illiteracy rates and improving the cultural and educational status of individuals.</li> <li>- Raising health awareness among the population and providing healthcare services.</li> </ul>
	Promoting a sense of belonging to architectural heritage and enhancing cultural awareness of its significance.	<ul style="list-style-type: none"> <li>- Developing policies for public awareness about the importance and value of architectural heritage.</li> <li>- Cultivating cultural awareness among citizens about the significance of architectural heritage through education and media.</li> <li>- Providing cultural resources such as books, exhibitions, seminars, and lectures.</li> <li>- Increasing the activity of civil associations interested in preservation through specialized courses offered by research centers, cultural institutions, or municipalities to educate people about heritage, its importance, and preservation methods.</li> <li>- Publishing specialized journals on architectural heritage preservation.</li> <li>- Establishing specialized technical teams in preservation and training them in restoration and maintenance work.</li> <li>- Creating social forums that bring together individuals concerned with architectural heritage affairs.</li> </ul>
	Community participation	<ul style="list-style-type: none"> <li>- Encouraging community involvement in preservation projects.</li> <li>- Coordinating between various government entities, the private sector, and local residents.</li> </ul>
<b>The economical dimension</b>	Supporting owners of architectural heritage.	<ul style="list-style-type: none"> <li>- Providing low-interest loans to assist in the preservation of architectural heritage tax exemptions.</li> </ul>
	Financing	<ul style="list-style-type: none"> <li>- The presence of a sound banking system that helps in the economic revival of the region.</li> <li>- Establishing an institution to finance small projects to support the activities of historical areas.</li> <li>- Providing financial resources to planning and executing authorities and distributing them according to priorities.</li> </ul>
	Increasing Investment	<ul style="list-style-type: none"> <li>- Developing material returns through tourism investment in the region and historical buildings.</li> <li>- Developing traditional and environmental friendly craft industries to help them continue and thrive.</li> <li>- Employing local labor in the preservation of historical areas.</li> <li>- Establishing craft training centers.</li> <li>- Establishing marketing centers for craft products.</li> <li>- Reviving old markets in historical areas and turning them into open shopping districts.</li> <li>- Repurposing existing buildings as hotels, exhibitions, museums, restaurants, and other public activities.</li> <li>- Focusing on large-scale commercial projects with investment potential.</li> <li>- Increasing foreign investments and market liberalization.</li> <li>- Establishing industrial zones in the modern city and providing service facilities.</li> </ul>
	Reducing the cost of reconstruction.	<ul style="list-style-type: none"> <li>- Using original building materials if available.</li> <li>- Using traditional methods and similar materials to replace original materials if they are not available.</li> </ul>
<b>The urban dimension</b>	Development on the historical building level	<ul style="list-style-type: none"> <li>- Restoring existing historical buildings to prevent their structural deterioration.</li> <li>- Highlighting buildings that exhibit distinctive visual aesthetics.</li> <li>- Installing special lighting for historical buildings to accentuate their value.</li> <li>- Protecting architectural heritage, determining the approach for dealing with it and its urban surroundings.</li> <li>- Utilizing various means for documenting and restoring structures, such as drawings, photographs, television filming.</li> </ul>
	Development at the level of the historical area	<ul style="list-style-type: none"> <li>- Establishing building regulations, conditions, and special laws for historical areas.</li> <li>- Preserving the visual and perceptual identity of the historical area.</li> <li>- Providing a transitional zone between the old urban fabric and the surrounding areas.</li> <li>- Restricting motorized traffic from entering the old city and converting it to pedestrian-only areas</li> <li>- Registering existing architectural heritage in the historical area by creating a comprehensive database system that includes all valuable properties</li> <li>- Rehabilitating and repurposing existing urban squares and spaces in the area.</li> <li>- Creating a heritage path that connects archaeological and historical sites with public and historical places.</li> <li>- Studying land use maps and determining open spaces and their utilization.</li> <li>- Connecting and integrating historical areas with the technological advancements found in the buildings.</li> </ul>
	Development of services.	<ul style="list-style-type: none"> <li>- Developing and improving service networks and infrastructure, rehabilitating them to meet the needs of users.</li> <li>- Redistributing activities and uses within the area to achieve integration with the prevailing activities in the surrounding urban context and in accordance with the economic and social situation of the population.</li> </ul>
	Road development	<ul style="list-style-type: none"> <li>- Focus on developing the traffic network for both motor vehicles and pedestrians, each in accordance with its own requirements.</li> <li>- Expansion of existing streets and the design of the road networks in the urban surroundings.</li> <li>- Separation of vehicular traffic from pedestrian traffic.</li> <li>- Provision of parking spaces within or outside the area.</li> <li>- Enhancement of street lighting.</li> </ul>
	At the administrative level	<ul style="list-style-type: none"> <li>- Establishment of an administrative body supported by specialized consultants with expertise to prepare studies, development plans, and supervise implementation, monitoring, and post-execution maintenance.</li> </ul>

From this table, there are 17 indicators and 69 requirements that fall under the four dimensions of integration. These will be used later in a survey of experts to prioritize them.

#### 4- Expert questionnaire:

**4-1 The goal of the questionnaire:** The goal is to attempt to identify the final requirements and indicators that help achieve sustainable integration in historical areas according to its four dimensions. This should achieve the highest possible efficiency in dealing with the requirements of historical areas in general, and with the reality of the Egyptian situation in particular. It aims to prioritize these indicators and requirements for potential use in the implementation of sustainable integration projects in historical areas.

**4-2 Questionnaire design:** The questionnaire has been divided into four main dimensions representing the dimensions of sustainable integration, which are (environmental, economic, social and urban dimension). Each of these dimensions includes a set of indicators and requirements that have been assessed for their importance and priorities using a "four-point scale" ranging from the least impactful (1 - No impact) to the most impactful (4 - Strong impact). Table [6] below provides a sample questionnaire design for one of the integration dimensions.

**Table (6):** A questionnaire design template for one of the integration dimensions, and similarly for the other dimensions.

1-Indicator and Requirement related to Environment Deimension		Degree of Influence			
Indicator	Requirement	1	2	3	4
1-1 Environmental Impact Study	Studying congestion reduction measures. ..... etc.				
1-2 Using climate treatments to ensure a safe environment	Using architectural treatments such as (openings, Mashrabia, air catcher, and shading elements, etc.). ..... etc.				
1-3 Using environmental treatments to ensure a safe and sustainable environment	Using local building materials. ..... etc.				
1-4 Promoting awareness to conserve the environment	Organizing environmental awareness and education campaigns for the residents of the area to preserve it. ..... etc.				

After preparing the questionnaire, a validity and reliability test was conducted to ensure the questionnaire's suitability for completing the basic study. This was done as follows:

**A-Validity test:** The validity of the questionnaire was established by presenting it to a panel of experts in the field of architectural engineering. These experts assessed the questionnaire's suitability for measuring the study's variables, achieving its objectives, and reviewing its indicators and requirements. Additionally, the questionnaire's adequacy in covering all dimensions of the study's problem was evaluated. Modifications and revisions were made based on the feedback provided by the expert reviewers to ensure its suitability for the final version. Furthermore, a survey was conducted on a sample of 15 individuals to confirm the ease of understanding and comprehensibility of the questions. Some requirements and indicators were adjusted and rephrased based on observations made during the application of the survey. Subsequently, the questionnaire was finalized and prepared for use with the research sample.

**B- Reliability test:** The reliability test was conducted using the Cronbach's Alpha<sup>(1)</sup> coefficient method. This was accomplished by administering the questionnaire to a sample of 15 individuals, including those from outside the main sample. The table below illustrates the results.

**Table (7):** Reliability coefficients using cronbach's alpha for the questionnaire (n = 15)

Indicator	Alfa Co.
Indicator and requirement related to the environment dimension	0.70
Indicator and requirement related to the social dimension.	0.91
Indicator and requirement related to the economical dimension.	0.91
Indicator and requirement related to the urban dimension.	0.92
Total degree	0.93

The table above shows the following:

Alpha coefficients for the questionnaire ranged from (0.70 to 0.93), which are statistically indicative of the questionnaire's stability. This encouraged the researcher to adopt the questionnaire model and distribute it in its final form to facilitate the formulation of the final results.

The statistical procedures used include the following:

- Cronbach's Alpha coefficient.
- Frequencies.
- Percentages.
- Estimated mean.
- Chi-Square ( $\chi^2$ ).

The research followed a significance level of 0.05, and the SPSS software was used to calculate some statistical parameters.

Table [8] presents the results of the survey analysis for the four dimensions of sustainable integration (environmental, social, economic, and urban). The table shows the indicators associated with each dimension of integration, along with the percentage and ranking of each indicator in terms of its impact, from most to least influential. It also provides the same information for the requirements associated with each indicator.

<sup>1</sup> Cronbach's Alpha Reliability Coefficient: It is a single number and scale that measures the degree of stability and validity of questionnaire questions. The closer to 1 is correct, the greater stability in performance is, as the acceptable value is 0.7 and above.

Where N is the number of items, c is the average within-item covariance, and v is the average total variance of the items.

$$\alpha = \frac{N \cdot \bar{c}}{\bar{v} + (N - 1) \cdot \bar{c}}$$

**Table (8):** Results of the survey analysis for the four dimensions of integration

Dimension	Indicator	Percentage %	Ranking	Requirement	Percentage %	Ranking	Impact Direction
1- The environmental dimension	1-1 Studying the environmental impact of the project.	87.14	2	Study on Reducing the congest rate.	83.15	5	Strong
				Study on Reducing The Noise Rate.	82.07	6	Moderate
				Study on Reducing air pollution.	85.87	4	Strong
				Improving the Efficiency of the Infrastructure Network Study.	92.39	1	Strong
				Identifying the workshops and crafts available in the area.	89.13	3	Strong
				Analyzing the road network to assess the level of pedestrian interaction with vehicular traffic.	90.22	2	Strong
	1-2 Utilizing the climate treatments.	85.60	4	Architectural treatment, including elements such as openings, Mashrabia screens, courtyards, arches, and more, can be utilized to enhance the design.	83.15	1	Strong
				Implementing urban treatments like landscaping, rooftop gardening, open space development, and expanding green areas.	88.04	3	Moderate
	1-3 Utilizing environmental treatment.	86.55	3	Utilizing local building materials.	80.43	3	Moderate
				Utilizing environmental and local sustainable construction methods.	79.89	4	Moderate
				Relocating polluting activities outside historic areas.	96.20	1	Strong
	1-4 Environmental awareness and conservation efforts.	89.13	1	Developing effective waste management systems for the disposal of solid waste and garbage.	89.67	2	Strong
				Organizing environmental awareness and education campaigns for the residents of the historical area to promote its preservation.	44.04	2	Strong
	2-The Social dimension	2-1 Preserving the identity and authenticity of the historical area.	82.61	2	Launching informational campaigns to leverage the environmental assets of the area in support of tourism activities.	82.07	2
Providing factors for the stability of the indigenous population in the area and developing their economies.					82.07	2	Strong
Preserving cultural traditions, emphasizing that heritage can coexist within an urban environment. It includes a social environment primarily aimed at serving this social aspect.					81.52	3	Moderate
2-2 Elevating the social status of the residents and caring for the improvement of the individual's standard of living.		78.40	3	Reviving the historical area in the way it used to be.	84.24	1	Strong
				Improving the quality of life for citizens and raising their standard of living.	79.89	2	Strong
				Rehabilitating the residents' activities to align with the area.	83.70	1	Strong
				Reducing illiteracy rates and improving the cultural and educational status of individuals.	79.89	3	Moderate
2-3 Promoting a sense of belonging to architectural heritage and enhancing cultural awareness of its significance.		78.03	4	Raising health awareness among the population and providing healthcare services.	70.11	4	Moderate
				Establish policies for public awareness about the importance and value of architectural heritage.	87.50	2	Strong
				Developing cultural awareness among citizens about the significance of architectural heritage through education and media.	86.96	3	Strong
				Providing cultural resources such as books, exhibitions, seminars, and lectures.	70.65	5	Moderate
				Increasing the activity of civil associations interested in preservation through specialized courses offered by research centers, cultural institutions, or municipalities to educate people about heritage, its importance, and preservation methods.	75.54	4	Moderate
				Publishing specialized journals on architectural heritage preservation.	68.48	6	Moderate
				Establishing specialized technical teams in preservation and training them in restoration and maintenance work.	89.67	1	Strong
2-4 Supporting community participation.	88.05	1	Creating social forums that bring together individuals concerned with architectural heritage affairs.	67.39	7	Moderate	
			Encouraging community involvement in preservation projects.	88.59	1	Strong	
				Coordinating between various government entities, the private sector, and local residents.	72.83	2	Moderate

3- The Economic dimension	3-1 Supporting architectural heritage owners.	75.55	4	Providing low-interest loans to assist in the preservation of architectural heritage.	72.83	2	Moderate
				Exempting owners of architectural heritage from taxes.	78.26	1	Strong
	3-2 Managing the necessary funding.	81.34	1	Having a banking system that aids in the economic revitalization of the region.	82.07	1	Strong
				Establishing an institution to finance small projects to support activities.	79.89	3	Moderate
				Providing financial resources to planning and executing entities and distributing them according to priorities.	82.07	2	Moderate
	3-3 Increasing investments.	80.27	3	Developing the financial returns through tourism investment in the region and historical buildings.	90.76	1	Strong
				Developing traditional and environmentally friendly industries and crafts in a way that helps sustain and preserve them.	88.59	3	Strong
				Employing local labor in heritage preservation efforts.	82.07	7	Moderate
				Establishing craft training centers.	82.61	6	Strong
				Establishing marketing centers for handicraft products.	86.41	5	Strong
				Reviving the old markets in the area and transforming them into open shopping districts.	87.50	4	Strong
				Re-purposing existing buildings into hotels, exhibitions, museums, restaurants, and various other public activities.	89.67	2	Strong
				Focusing on large-scale commercial projects of an investment nature.	64.13	9	Weak
Increasing foreign investments and free-market economics.				62.50	10	Weak	
Establishing modern industrial zones in the city and providing necessary facilities	68.48	8	Moderate				
3-4 Reducing the cost of reconstruction	80.44	2	Using original building materials if available.	80.98	1	Moderate	
			Using traditional methods and similar materials as a replacement for the original materials if not available.	79.89	2	Moderate	
4- The Urban dimension	4-1 Developing historical buildings.	93.80	1	Preserving architectural heritage, determining the appropriate approach to deal with it, and its urban surroundings.	90.22	5	Strong
				Restoring existing historical buildings to halt their structural deterioration.	97.28	1	Strong
				Focusing on showcasing buildings that achieve distinctive visual aesthetics.	95.65	2	Strong
				Illuminating historical buildings to highlight their value during nighttime periods.	90.22	4	Strong
				Documenting all elements of historical establishments through drawings, photographs, and television footage to preserve and restore them.	95.65	2	Strong
	4-2 Developing historical areas.	88.65	3	Establishing specific building regulations, requirements, and laws for the area.	95.65	1	Strong
				Maintaining the visual identity of the area.	94.02	2	Strong
				Providing a transition zone between the old urban fabric and the surrounding areas.	81.52	9	Moderate
				Prohibiting motor vehicle traffic from entering the area and converting it to pedestrians only.	81.52	7	Strong
				Registering the architectural heritage in the area by developing an integrated database system that includes all buildings of value.	89.67	6	Strong
				Rehabilitating the existing squares and urban spaces in the area and re-employing them.	92.39	3	Strong
				Creating heritage trails to link archaeological buildings and historical places.	91.30	4	Strong
				Studying the land use map and identifying vacant lands for repurposing.	90.22	5	Strong
	4-3 Developing and improving service.	85.06	4	Connecting and integrating the area with its buildings into technological advancements.	81.52	7	Strong
				Developing and improving service networks, infrastructure, and preparing them to accommodate users' needs.	88.04	1	Strong
	4-4 Developing	84.35	5	Redistributing the uses in the area to achieve integration with all residential, commercial, and prevailing service activities within the surrounding urban context, in line with the economic and social situation of the population.	82.07	2	Strong
Developing the network of automated traffic and pedestrian routes to align with the requirements of each.				89.67	1	Strong	

	and improving road.			Expanding old streets and designing new road networks in the urban environment.	74.46	5	Strong
				Separating vehicular traffic from pedestrians	83.15	4	Strong
				Providing parking spaces inside or outside the area.	88.04	2	Strong
				Improving street lighting.	86.41	3	Strong
	4-5 Developing the administrative level.	89.13	2	Establishing an administrative body by utilizing international and local consultants with expertise in preparing necessary studies, developing project plans, overseeing implementation stages, and conducting monitoring and maintenance activities post-execution.	89.13		Strong

**From the analysis of the previous table, the following points become evident:**

**Firstly**, the percentage of research sample opinions regarding indicators related to the environmental dimension ranged from 85.60% to 89.13%. The overall percentage for all indicators was 87.11%. The indicator "Environmental Awareness" ranked first among the indicators related to the environmental dimension, followed by the "Environmental Impact Study of the Project" in second place. "Using Environmental Treatments for a Safe and Sustainable Environment" ranked in third place, while "Using Climate Treatments for a Safe Environment" ranked fourth.

**Secondly**, the percentage of research sample opinions regarding indicators related to the social dimension ranged from 78.03% to 88.05%. The overall percentage for all indicators was 81.77%. The indicator "Supporting Community Participation" ranked first among the indicators related to the social dimension, followed by "Preserving the Identity and Authenticity of the Area" in second place, and "Social Advancement of the Population and Improving Individual Living Standards" in third place. "Supporting Cultural Awareness of Architectural Heritage and Its Importance" ranked fourth.

**Thirdly**, the percentage of research sample opinions regarding indicators related to the economic dimension ranged from 75.55% to 81.34%. The overall percentage for all indicators was 79.40%. The indicator "Managing the Necessary

Financing" ranked first among the indicators related to the economic dimension, followed by "Reducing Reconstruction Costs" in second place, and "Increasing Investments" in third place, while "Supporting Owners of Architectural Heritage" ranked fourth.

**Fourthly**, the percentage of research sample opinions regarding indicators related to the urban dimension ranged from 84.35% to 93.80%. The overall percentage for all indicators was 88.20%. The indicator "Developing Historical Buildings" ranked first among the indicators related to the urban dimension, followed by "Developing Administrative Level" in second place, and "Developing the Historical Area" in third place. "Developing and Improving Services" ranked fourth, and finally "Developing and Improving Roads" ranked fifth.

Additionally, the specific requirements for each indicator were ranked from most influential to least influential, as indicated in the previous table.

**Survey results:**

Based on the above, we can prioritize and list the requirements and priorities of integration in the following table [Table 9], which planning authorities can refer to when studying and implementing projects for the preservation of historical areas. Requirements with strong and medium impacts have been included, while requirements with weak impacts have been excluded based on the survey results.

**Table (9):** The integration indicators and requirements are ranked according to implementation priorities in sustainable integration projects in historic areas.

Dimension	Indicator	Requirement		
The environment dimension	1-Caring for environmental awareness and conservation.	1-Organizing environmental awareness and education campaigns for the residents of the area to preserve it.		
		2- Organizing media campaigns to leverage the environmental assets of the historical area in supporting tourism activities.		
	2-Study the Environment impact of the project.	1- Studying the enhancement of the infrastructure network efficiency.	4-Studying air pollution reduction.	
		2- Studying the development of road networks and pedestrian-traffic interaction.	5- Studying congestion reduction measures.	
		3-Studying the identification of the types of workshops and crafts present in the area.	6- Studying noise level reduction.	
	3- Using environmental treatments.	1- Transferring polluting activities outside historical areas.	3- Utilizing local building materials.	
		2- Establishing systems for solid waste	4- Using eco-friendly and local methods.	



		disposal and management.	
	4-Using climate treatments.	1- Utilizing urban treatments such as (afforestation, rooftop gardening, open space development, and increasing green areas). 2-Utilizing Architectural treatment such as openings, mashrabia , courtyards, arches, etc.	
The Social dimension	1-Supporting community participation.	1- Coordinating between different government entities, the private sector, and the local residents. 2-Promoting community participation in conservation projects.	
	2-Preserving the identity and authenticity of the region."	1- Reviving the area to its former state. 2- Providing stability factors for the indigenous population in the area and developing their economies 3- Preserving the inherited traditions and emphasizing that heritage primarily serves the social dimension.	
	3- Elevating the social well-being of the residents and enhancing individuals' quality of life.	1- Rehabilitating the residents' activities in accordance with the region 2- Improving the quality of life for citizens and raising the standard of living. 3- Reducing the illiteracy rate and improving the cultural and educational status of individuals. 4- Raising health awareness among the population and providing healthcare services."	
	4- Promoting attachment to architectural heritages and the cultural awareness of their significance.	1-Establishing specialized technical teams in conservation and providing training for them in restoration and maintenance tasks. 2- Establishing policies for public awareness of the importance and value of architectural heritage. 3- Developing cultural awareness among citizens about the importance of architectural heritage through various stages of education and different media. 4-Boosting NGO involvement through specialized courses at research and cultural centers to raise awareness about heritage importance and preservation methods. 5-Providing cultural resources such as books, exhibitions, seminars, and lectures. 6- Publishing specialized journals on architectural heritage conservation. 7- "Establishing social forums that bring together those interested in architectural heritage affairs.	
	The economic dimension	1-Securing the necessary financing.	1- The presence of a financial system that aids in the economic revitalization of the region 2- Providing financial resources to the planning and implementing entities and distributing them according to priority 3- Establishing an institution for financing small projects to support activities
		2- Reducing the cost of reconstruction.	1- Using original building materials if available 2- Using traditional methods and substitute materials when the original materials are not available.
		3- Increasing investments.	1- Boosting financial returns through tourism investment in the region and historical buildings 2- Repurposing existing buildings for use as hotels, exhibitions, museums, restaurants, and other various public activities. 3- Developing traditional and eco-friendly artisanal industries in a manner that supports their sustainability and preservation. 4- Reviving the old markets in the region and transforming them into open shopping areas 5- Establishing marketing centers for artisanal products. 6- Establishing craft training centers. 7- Employing local labor in the field of heritage conservation. 8- Establishing modern industrial zones in the city and providing service facilities.
		4- Supporting the owners of architectural heritage.	1- Exempting owners of architectural heritage from taxes. 2- Providing low-interest loans to assist in the preservation of architectural heritage.
	The urban dimension	1- Developing historical buildings.	1- Restoring existing historical buildings to halt their structural deterioration. 2- Documenting all elements of historical structures through drawings, photographs, and television footage with the aim of preserving and restoring them. 3- Focusing on showcasing buildings that achieve distinctive visual design. 4- Illuminating historical buildings to highlight their value during nighttime periods. 5- Preserving architectural heritage, determining the appropriate approach for dealing with it, and considering its urban surroundings.
		2- Enhancing the administrative level.	1 Forming an administrative body by engaging both international and local specialist consultants with experience in preparing required studies, crafting development project plans, supervising implementation stages, monitoring and follow-up activities, and post-execution maintenance.

3- Developing the historical area.	1- Establishing specific building regulations, requirements, and laws for the area.
	2- Preserving the visual and visual identity of the region
	3- Rehabilitating the urban squares and spaces in the area and repurposing them
	4- Creating heritage trails to connect historical buildings and places.
	5- Studying land use mapping and identifying vacant lands for repurposing.
	6- Registering the architectural heritage in the region by establishing a comprehensive database system that includes all valuable buildings.
	7- Disallowing vehicular traffic from entering the area and converting it for pedestrians only.
	8- Connecting and integrating the area with its buildings through technological advancement.
	9- Providing a transitional area between the old urban fabric and the surrounding regions.
4- Developing and improving services.	1- Developing and enhancing service networks and infrastructure and preparing them to accommodate users' needs.
	2- Reorganizing land uses within the area to facilitate integration with the prevailing residential, commercial, and service activities in the surrounding urban context, while aligning with the economic and social conditions of the population.
5- Developing and enhancing roads.	1- Developing the network of roads for both automated and pedestrian traffic in accordance with their respective requirements.
	2- Providing parking areas inside or outside the area.
	3- Improving street lighting.
	4- Separating vehicular traffic from pedestrians.
	5- Expanding old streets and designing new road networks in the urban periphery.

**5-Results and recommendations:**

**5-1 Results:**

Historical areas are considered one of the components of urban heritage, as they are full of many cultural, urban, economic and architectural values, and preserving them is the basis of preserving urban identity. This areas and their urban surroundings suffer from various issues, including the deterioration of infrastructure and basic utilities, and service deficiencies in meeting their needs, rendering them inadequate to meet the requirements of both the current and future city.

**So the research concludes a set of results that can be defined as follows:**

**First: Results derived from the theoretical study:**

- 1- Historical areas are considered one of the components of urban heritage, and preserving them is fundamental for safeguarding urban identity.
- 2- Historical areas of value are rich in cultural, architectural, urban, and economic significance, which necessitates their preservation and the identification of requirements that facilitate integration between these areas and their urban surroundings.
- 3- Sustainable integration can be defined as sustainable development that encompasses social, economic, environmental, and urban aspects, leading to the enhancement of the urban environment of the historical area itself and extending to include its surrounding environment.
- 4- Most global and local experiences examined in the research address the issues faced by historical areas, including social problems such as the emigration of native residents, leading to the deterioration of the area. Additionally, there are urban issues like the loss of many historical buildings in the area due to wars

or neglect. These issues result in the loss of much of its historical architecture and exposure to demolition and removal decisions. Furthermore, environmental and economic problems have negatively impacted these regions.

5- Environmental considerations have been integrated into the development projects of historical areas in most experiences, such as the experiences of Beirut in Lebanon, Dereiyah in Saudi Arabia, and Al Darb Al-Ahmar in Egypt. However, the presence of such environmental focus was not observed in the cases of Warsaw in Poland and Le Marais in Paris, despite of the significance of this dimension within the framework of sustainable integration.

6- Most experiences in the environmental dimension have focused on developing open spaces, increasing green areas, and utilizing the environmental assets of the historical area to support tourism activities.

7- The experiences analyzed in the research have emphasized the social dimension of development. They also focus on community engagement of historical area residents in development projects. Furthermore, there has been an emphasis on coordination among various government agencies, the private sector, and local residents.

8- The experiences covered in the study have placed a significant focus on the economic dimension to achieve sustainable integration in historical areas. This has manifested through the repurposing and investment of historical buildings and areas, as well as the preservation of non-polluting traditional crafts and activities that generate income contributing to the economic viability of these areas.

9- The experiences explored in the research have shown a strong focus on the urban dimension. It even emphasized on the restoration and adaptive reuse of historical buildings in alignment with the area's character. Furthermore, there has been an emphasis on rehabilitating urban spaces within historical centers, redeveloping surrounding areas, improving open spaces, and upgrading road networks, streets, and infrastructure.

**Second: Survey results:**

1- In terms of environmental-related indicators, the "Environmental Awareness and Conservation Promotion"

indicator ranked first, followed by the "Environmental Impact Assessment for Projects" indicator in second place, and the "Utilization of Environmental Approaches for a Safe and Sustainable Environment" indicator in third place. The "Utilization of Climate Approaches for a Safe Environment" indicator ranked fourth.

2- Among the social-related indicators, the "Community Participation Support" indicator ranked first, followed by the "Preservation of Identity and Authenticity of the Area" indicator in second place, and the "Social Upliftment and Individual Living Standards Improvement" indicator in third place. The "Support for Cultural Awareness and Preservation of Architectural Heritage" indicator ranked fourth.

3- In the economic-related indicators, the "Financial Management" indicator ranked first, followed by the "Cost Reduction for Reconstruction" indicator in second place, and the "Increase in Investments" indicator in third place. The "Support for Owners of Architectural Heritage" indicator ranked fourth.

4- Within the urban-related indicators, the "Historical Building Development" indicator ranked first, followed by the "Administrative Level Development" indicator in second place, and the "Historical Area Development" indicator in third place. The "Development and Improvement of Services" indicator ranked fourth, and the "Development and Improvement of Roads" indicator ranked fifth.

5- Priorities and requirements for sustainable integration were organized in a table to guide planning authorities when studying and implementing projects for the preservation of historical areas. The requirements with strong and medium impacts were included, while those with weak impacts were excluded based on the survey results.

## **5-2 Recommendations:**

### **5-2-1 Recommendations for professionals and those interested in sustainable integration:**

1- It is essential to preserve historical urban areas and increase awareness among the general public and officials about the importance of conserving architectural heritage.

2- Encouraging property owners and valuable historical areas to preserve these locations and providing them with material, technical, and administrative support to maintain and protect these areas is crucial.

3- Training local artisans in the craftsmanship unique to the region in order to provide employment opportunities and increase income for the local community to contribute to the development of the historical area is important.

4- Providing guidelines to relevant planning authorities, including indicators for achieving integration based on their priorities, to measure the extent of integration achievement in any historical area, as well as offering the necessary requirements for integration according to each indicator.

### **5-2-2 Recommendations for executive authorities:**

1- Conservation efforts should encompass all sectors of the environmental, social, economic, and urban community because the desired goals cannot be achieved by developing one sector without the others.

2- The architectural heritage can be considered an economic resource by repurposing it in a way that suits the nature of the historical area.

3- The necessity of forming an administrative body of specialized international and local consultants with experience in preparing the necessary studies, developing plans for development projects, supervising the implementation stages, and monitoring, follow-up, and maintenance work after implementation.

4- Developing indicators to measure the extent of sustainable integration in historical areas according to sustainable development dimensions, and then determining the requirements of sustainable integration for conservation projects is crucial.

5- Prioritizing the requirements for achieving sustainable integration as indicated in the survey and applying them in various conservation projects is essential.

## **5-2-3 Recommendations for the academic community:**

1- Leveraging successful global experiences that addressed all four dimensions to achieve sustainable integration in historical area conservation projects is necessary.

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