

**Community Participation as an Entry Point for Sustainable
Urban Development in Heritage Commercial Areas
A case study “Arab District, Port-Said-Egypt”**

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Abstract:

The concept of sustainability aims at integrating the urban design process and preserving the natural environment from resources while reducing the consumption of resources and energy and optimum use of environmental resources in order to facilitate life conditions. Architectural studies have shown that The Danish " Jan Gehl " and his attempts in urban monitoring and the exploitation of the results of monitoring and questionnaires in improving the quality of life and applying the concept of urban sustainability, it shows the extent to which the development of ancient heritage districts has fallen short, and putting sustainable and executable development plans.

From here the research aims to: work to implement a new mechanism in proportion to the data of time and place for monitoring and questionnaire in which community participation works from the people of the district play the main role, enhancing the heritage value of the place and preserving its identity in line with the requirements of the times. Based on surveys And urban studies on Arab heritage district, and in partnership with the people of the district in monitoring and questionnaires, several results were reached that work on Improving the quality of life in a sustainable way: enhancing the possibility of walking and facilitating the accessibility Enhancing the value of safety in the streets, implementing the “Sustainability System-Eco” and creating easy streets User-Friendly Street, Reviving the architecture and social heritage, Infrastructure and Service. The research discusses how to use community participation in the application of sustainable development to heritage commercial districts and the preservation of the historical, heritage and urban identity of the place through the application of the principles of sustainable urban development.

Keywords:

sustainable development, community participation, monitoring and questionnaire mechanisms, ancient heritage districts.

Introduction: The historical and heritage areas in the cities are facing many changes and neglect that have affected the urban fabric of these areas (1)

These effects were reflected on the economic and social situation, infrastructure and buildings of general heritage and architectural value, in addition to entering a new urban fabric that is not studied or prepared, in line with the strong urban fabric of those heritage areas; This led to the deterioration of the areas such as what happened in Arab heritage district in Port-Said, which is the subject of the study, and this led to the deterioration of the economic situation in the famous commercial market ,and the district fell into a state of stagnation, and the area turned into a random commercial market for residents who are not from the district, which affected the social fabric of the district. The neglect of the heritage buildings in the district and the loss of part of these buildings as a result of these changes.

This calls for the development of sustainable development strategies for these areas that work to develop that area to save the rest of the urban fabric for this area and the revival of the traditional commercial markets that were the center of the city, these strategies must include fabric development urban, including its economic, social, urban and environmental situation, and it is working on a realistic solution to develop that area for the people of the district and this is consistent with the implementation of the sustainable development plan for the area.

1-1 Sustainable development:

Sustainable development cannot be achieved without the existence of development strategies, and sustainability will not be achieved and the implementation of those development strategies only but with taking into account the basic dimensions of sustainability, and John Eklingon has deduced the basic dimensions of achieving the sustainability process or what It's called a " triple Bottom - Line" and he is an economist competent with environment.

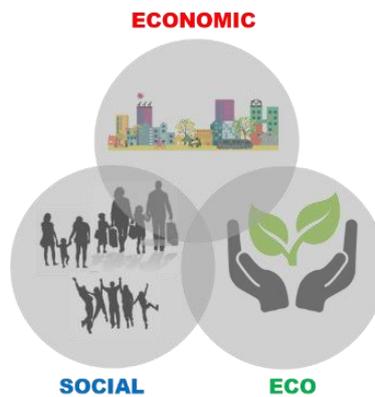


Figure 1: An illustration of the relationship between the axes of sustainability

Source: Dr. Ismail Ali Saad, Prof. Dr. Mohamed Ahmed Bayoumi: "Values and Guidelines for Social Behavior"

1-1-2 These dimensions are:

- 1) The economic dimension.
- 2) The social dimension.
- 3) The environmental dimension.

It is not possible to achieve any of them separately, but rather the three dimensions must be implemented simultaneously to achieve growth Sustainable development for the environment, economic growth, social justice, and sustainable development seeks to serve humankind from through the optimum utilization of all available environmental and human resources while preserving and developing them. And there are many of the definitions concerned with sustainable development, and these definitions are divided into comprehensive and some of them take a specific perspective from the dimensions of sustainability. (1) (5)

1-2-1) The physical aspect: as it was defined in the dictionary as that development that it allows the use of natural resources without depleting them. (1)

1-2-2) The economic aspect: Making the most of economic development while keeping natural resources and their development, and that the current economic utilization does not affect the future utilization of resources in the future, and that the process of achieving economic growth must be suitable for preserving the capabilities of the environment (1) (6).

1-2-3) Environmental aspect: Which aims to preserve, develop and enhance all the resources of the environment, and that development must work to raise the efficiency of resources environmental development and not to exploit it in a way that reduces its efficiency in the future for future generations, and that economic development does not contradict with the preservation of the environment rather, it is an integrated and not contradictory process. (1) (4).

1-2-4) Urban perspective: Which aims to preserve the urban fabric in the area, such as development, taking into account the development of the urban aspect of planning cities and areas, raising the efficiency of infrastructure, preserving the environment, reducing pollution, and preserving the heritage identity of buildings of historical and heritage value, and to enhance its vital functions and its development and the development of services. (1)

1-2-5) Social Perspective: Sustainable development starts with community participation and monitoring of social behaviors, environmental solutions and vital functions and economic aspects, from which the results of social monitoring are exploited for all economic, environmental and urban aspects in developing sustainable development plans it works on developing and linking all elements of the site through community participation in knowing the needs of the community and meeting their needs in a development plan it works for the community and exploiting all economic,

urban and environmental aspects to achieve comprehensive community sustainable development, through " Jan Gehl's " perspective on how to achieve sustainable development by linking all aspects of sustainable development to community participation and urban sustainable development (8) " Jan Gehl "

2- Literary studies: From the above it is clear the importance of studying the various aspects of sustainable development, and the importance of monitoring and questionnaire in analyzing the requirements of the site and application of the dimensions of sustainable development, and through the readings of the Danish architect " Jan Gehl" who was interested in developing different theories for the application of development sustainable development by linking the social aspect and its importance, monitoring people's behaviors and activities and the various factors affecting them, and innovating new ways in the monitoring and questionnaire, and the emergence of various reasons and motives that made the architect " Jan Gehl " search for new ways to achieve sustainable development, including:

2-1) Gradual disposal and ignoring the human scale: The shortcomings and then neglecting the human scale and its importance and ignoring it in the urban design process, while Emphasis was placed on other points such as: the maximum increase in the proportion of roads and cars, in addition to neglecting public spaces, social life, and the role because of the strength of the economic market, and the emergence of modern architectural trends,

the focus has gradually shifted from the importance of public squares and urban overlap due to urbanization and public external spaces and their importance in connecting society, to focus on separate urbanization isolated individual buildings; this led to the emergence of several problems and difficulties, the most important of which are: noise, pollution, an increase in the rate of accidents globally, and a lack of places and public yards and cities inflation (9).

2-2) Phase of correction: In the five decades that followed the sixties, researchers and planners tended to pay more attention to the urban planning process and to urban plan and urban spaces through serious research and studies, which led to work on creating good conditions in many urban spaces around the world. By maximizing the importance of city life and the importance of pedestrians by reducing the proportion of cars and transportation in the city and decreasing its priority, and the tendency to pay attention to dynamic construction and multi-use urban spaces instead of turning to isolated individual buildings and stopping their growth; These urban causes and changes has led to an interest in changing the method of urban design and planning and the development of simplified ways to include the societal changes that occurred in the spaces urbanization, people's behavior, and the quality of life in cities; This is done by developing several simplified questions to analyze and understand the changes, analyze their results and benefit from them in changing the planning process and improving the quality of life " Jan Gehl " (9)

2-3) " Jan Gehl “divided the type of questions into two types:

Qualitative questions	Quantitative questions
<p>Monitor a question about the quality of users of the spaces urban, and this question allows us to stand on the monitoring:</p> <p>The type of the spaces users and the ages of the spaces users, and this question allows us to benefit from its results in determining the type of users of architectural spaces different, and meet the needs of each category used in blanks</p>	<p>Monitor a question about how many people do the different activities inside urban spaces such as:</p> <p>Number of cars in mixed urban spaces and main streets, number pedestrians in different spaces, number of activities available in spaces .This question allows us to benefit from a large amount of information that allows us to use in: raising the efficiency of urban spaces, improving the quality of life and make a comparison between before development and after development to know the efficiency of development and that quality of life in different spaces.</p>
<p>Monitor a question about what people use inside the urban spaces and that allows us to:</p> <ol style="list-style-type: none"> 1. Monitoring different activities within an urban space. 2. Monitoring environmental solutions within those spaces. 3. Monitoring different social activities. 4. Determining the activities performed by the users. 5. Dividing these activities into optional activities and necessary. 	<p>Monitoring the question: “Where” and allows us to identify several factors that are taking place use it to analyze spaces like:</p> <p>Where do users go, where the sun and shade directions are, and where people go to sit. This allows us to learn a lot of information such as:</p> <ol style="list-style-type: none"> 1. Seating. 2. Determine the locations of the purpose. 3. Determining the places of movement within the site. 4. Monitoring the gathering places of users within the site
	<p>Monitor a question to see how much time most visitors use in the various activities within public spaces and allows us to know:</p> <ol style="list-style-type: none"> 1. Sitting in public places.

	<ol style="list-style-type: none">2. Walking within the spaces and moving from one place to another.3. Comparison of users' movements over different periods and days.4. Know important directions for buying and selling when visiting the markets
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Table 1: How to analyze changes and their consequences

Source: Jan Gehl, Cities for People, 2010

2-4) " Jan Gehl " Jan (in his book): has clarified a lot of multiple tools for organizing the process of direct observation of the interrelationship between public spaces and public life, and mention some cases of indirect monitoring, such as the use of cameras and modern means and devices to monitor the movement of human activity. Despite the tools used, it is necessary to determine the purpose of the study and the timing of the study, and it is important to specify the tools used in the study, the timing and the reason for the study according to the appropriate conditions for the study and the different conditions of time and place and the tools available to implement this study taking into account several elements: (10)

2-4-1) The purpose of the study and the tools used:

The tools used are determined by reviewing several factors to know the available tools and the means that help in the study, such as:

Study purpose - Material cost - Study time - Area's conditions at Study time.

Benefiting from the results of the study, such as: making appropriate political decisions and conducting studies and comparisons of the situation before and after to determine the extent of the impact of the project or the study, and the choice of tools used in the study depends on whether the area to be studied is considered specific public spaces, street or district or an entire city, and it is better and necessary to integrate various monitoring methods to facilitate the monitoring process and obtain the largest amount of information.

2-4-2) Choice of study days (weather and wind): The purpose of the study and local conditions determine the best times for monitoring, and if the study in a residential area, it is necessary to have the time of study and monitoring in early times, and also monitoring in children's yards and parks be in the noon. There is a big difference between weekdays and weekends and holidays; because lifestyles and movement often change in the normal days from days off.

2-5-1) Monitoring methods (Monitoring tools): In the sixties, seventies and eighties, most of the studies were done by hand tools, and after technological development all studies are often carried out with more advanced and technical tools; which led to collecting the largest amount of information when monitoring. The choice of tools, whether technical or manual, depends on the size of the study and the price of the available tools.

2-5-2) Monitoring results: After the monitoring and questionnaire process is completed, many of the results that were observed from the monitoring and questionnaire process are drawn, in order to know and analyze the existing situation in the study area and make comparisons and studies on the existing situation (10).

2-6-1) Sustainable development from " Jan Gehl " vision: Several factors for achieving sustainable development have been laid down by "Jan Gehl " Jan; by taking into account the human and social dimension as a basic dimension in the design process, and he has deduced four main objectives from which several axes emerge to achieve sustainable development, the four goals fall under a major factor: **“taking into account the human dimension and design for people first,”** and that the goal should move from **“transporting traffic only through the street”** to **“attract people to the street first”**, creating urban spaces that attract people to integrate within those spaces, and attracting interest in different categories of users by creating different activities that attract them, and reduce the speed of cars and transportation in the different urban spaces, and this principle has four main objectives : (9)

"Livable cities "	"Safety cities "	"Healthy cities "	"Sustainable cities "
Walkability"	"Accessibility"	"Eco-system"	Utilities and drainage "
"Network of streets		"User friendly streets"	Flexibility"

			"Tactical urbanism"
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Table 2: Axes of achieving sustainability

Source: Jan Gehl, Cities for People, 2010

By achieving these elements combined, we can obtain urban spaces with a good quality of life for their users, and this is reflected in the behavior of society and individuals and their interaction with urban spaces and the integration of different groups of society with different urban spaces.

3) Study area: In order to apply these dimensions in a practical way and to apply the methodology of monitoring and sustainable urban development, the research aimed at “the commercial market” in the heritage Arab district – in Port Said city “because it has not received enough attention throughout the history of the city, despite its historical, heritage, political and cultural importance of the city throughout its history. And the political and cultural heritage of the city throughout its history.

3-1) The research problem: The research problem lies in how to work on monitoring the state of urban, heritage and societal deterioration of the district, and how to involve the community in a sustainable development plan for the area that works to raise the efficiency of the area and develop it while preserving the community fabric of the district and its development and preserving the existing architectural heritage in the district and creating new architectural functions for these buildings in line with the requirements of the area and the requirements of time and location.

3-2) Objectives of the study: The aim of the study is to develop a sustainable development plan that can be implemented in the rest of the district by preserving the fabric. In addition to developing "Al-Hamidi Commercial Street", and involving the people of the district in the sustainable development plan by preserving the urban, social and heritage fabric with fulfilling their needs in accordance with the requirements of time and place.

3-3) Historic Arab District: The historical Arab district is located in the northwest of the valiant city of Port Said, and the district is located in a central area of the city, where it is located at the entrance to the main district of Mohamed Ali Street in the city, the district is located in the city's service center as shown on the map.

3-4) Historical factors: The area has gone through many factors and stages that have affected the urban environment of the district, and these factors have affected the fabric urban district; this led to an impact on the social and cultural fabric of the area, as the historic Arab district is considered one of the oldest districts in the history of the area Port Said, and was home to Egyptian workers digging the Suez Canal, and most of the urban fabric was based on wooden buildings, roads and narrow lanes.

The wars in the area led to some fires led to the disappearance of a large part of those heritage buildings, and Arab district has been rebuilt in a random way that does not fit the urban fabric of the district or the distinctive architectural character of the district, which led to losing a large part of his distinctive identity.

3-5) Analysis of the cultural structure:

3-5-1) Analysis of the urban fabric:

This diagram shows the hierarchy of the functional relationships of the urban fabric of Arab district

Intricate fabric: The site has a special and intricate fabric of buildings; where it contains unorganized buildings of different styles and heights.

City Reconnecting Roads: The study area intersects with two main streets of the city (Mohamed Ali Street) and (Saad Zagloul Street), which facilitates access to the area.

Mixed-use streets: The study area has four different types from the streets (pedestrians - cars - bicycles - commercial market)

Pedestrian paths: The study area has strong pedestrian paths; which strengthens the urban fabric the urban area of the area, and owns three important commercial markets (Al-Hamidi - Commercial market- Kesra).

Narrowest Alleys: The fabric scale moves to a smaller scale through the narrowest alleys that connecting buildings and houses to each other, and the width of the alleys ranges from 4 m - 6 m.



Figure 2: Analysis of the urban fabric of the Arab district

Source: Figure prepared by the researcher

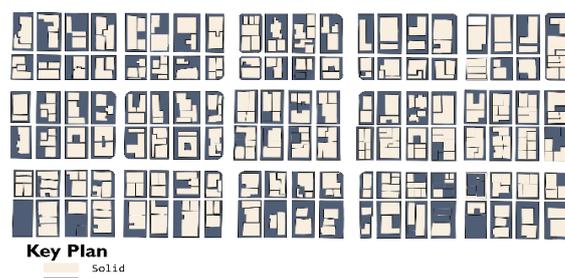


Figure 3: Map of urban spaces

Source: Figure prepared by the researcher

3-6) Urban Spaces Map: Through that map of the area, we can we know the percentage of the built-up land in the district to the percentage of unused land that is it must be used in the development plan for the area, and it will be shown on the map the unorganized construction method in the land due to the variables that affected the urban fabric of the district.

3-7) Analysis of the heritage pattern: Through this scheme, we can get acquainted with the rich heritage pattern in the district, which shows the extent of the diversity of patterns and the different architecture in the district, and the multiple use of different building materials on different floors, and the frequent use of wood and stone in construction. And the plan also shows the societal impact on the urban fabric, and this is shown through using pigeon towers and the use of canopies to cover commercial market.



Figure 4: Models of architectural styles in Arab district

Source: Figure prepared by the researcher.

4) Monitoring plan and questionnaire:

4-1) Timing of the study: the study and the urban and social monitoring plan for the Hamidi market in the Arab district of Port Said were implemented in the period from 21/1/2020 to 28/1/2020 and that depending on several factors, including: weather factors affecting the monitoring process, and that period is considered a mid-year vacation, during which time the area witnessed a lot of visits and trips; the daily monitoring process was carried out in three stages:

End of the day	Mid-day	Early Morning	
From 8 pm to 10 pm	From 5 pm to 7 pm	From 12 pm to 2 pm	Timing
The period of the end of the daily work in the market and the closure of the commercial market	The peak period is in the commercial market and community monitoring and various activities	the period in which the daily work begins and urban monitoring of streets and buildings	Reason

Table 3: Timing of monitoring
Source: Table prepared by the researcher

4-2) Division of the study area: Al-Hamidi market in Arab district was chosen as a practical experiment for the monitoring process; Al Hamidi Market is the largest market in Arab district, which is also the central area market of the district, and contains a large number of heritage buildings in the district. And in order to get a lot of information Al-Hamidi market area has been divided into five mini-areas; In order to obtain as much information as possible and to achieve the greatest amount of accuracy in the monitoring process.

The illustrated map shows the division of the area into five areas, as shown on the map for the accuracy of monitoring. As shown on the map.

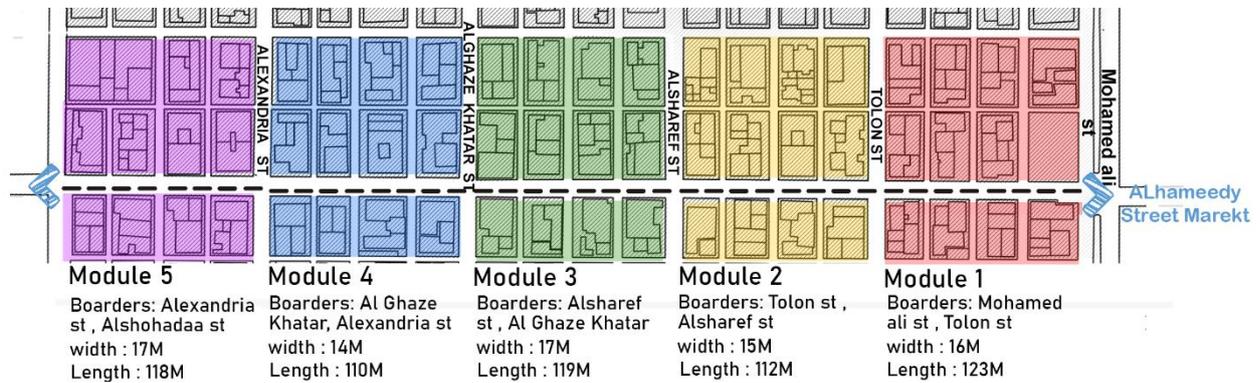


Figure 5: Map of Al-Hamidi Commercial Market in Arab district

Source: Intellectual property rights of the researcher

Divided into an area, the types of visitors to the area are monitored, divided and predicting their locations on the map, giving each type of user a different icon in order to differentiate between each type of user, and the other map is used to predict the itinerary of visitors and users of the area and finding out how much time each group uses in that area and anticipating the itinerary and knowing the types of movement and places to move and sit and exits.



Figure 6: Tracking and Monitoring Map Templates

Source: Intellectual property rights of the
researcher

4-3) Monitoring tools and methods:

Application	Usage	Tool
	Use the manual counters to monitor the number of users of the commercial market, and each counter with a different color of its own with a particular type of user.	Manual counter
	It is used to monitor the timings spent by different users within the commercial market, and to know how much the time each visitor uses to practice different activities.	Digital watch
	To document the existing conditions of buildings and lands, and to document societal behaviors and merchants' dealings within the market through pictures.	Camera

Table 4: Monitoring tools used

Source: Table prepared by the researcher

4-4) Analysis of activities: The activities were divided into three stereotypes in order to facilitate the monitoring process, and to know the activities that need attention and suffers from a lack of interest, neglect and common activities that spread among users on the site, as shown in the monitoring table; where the activities were divided into: necessary activities that all users do on a regular basis such as walking and sitting, and optional activities such as shopping, buying, selling, hiking, and social activities that monitor the efficiency of social behaviors among users of the site.

4-5) Dividing users: to facilitate the process of monitoring and analysis users are divided into several categories as shown in table (5). This led to Facilitate the process of monitoring and distinguishing between patterns users of the area and monitoring all their activities accurately and efficient to work on developing sustainable urban solutions that fit requirements for each type of user and work on incorporate all these stereotypes into the site.

Non- permanent Users	Permanent Users
visitors using the pedestrian paths	Residents of Al-Hamidi commercial market
Visitors using bicycles	Merchants, shopkeepers
buyers using the commercial market	Roaming cart owners merchants

Table 5: dividing types of users and visitors
Source: Table prepared by the researcher

4-6) Community Participation: Community participation had an important role in the monitoring and analysis process, knowing the requirements of the area's users and knowing the problems that the development planner must develop solutions for developing the area, and questionnaire schemes were used in order to reap the greatest amount of information about the area and the involvement of users in the development process taking place in the area, and (90) questionnaires were distributed randomly, and number of (10) forms were neglected, and approval of (80) forms for obtaining information.

As shown in the illustrations No. (7): a - b - c - d) reaction of visitors, traders and residents of the area and their response to the monitoring and questionnaire process and their aspiration to know the reasons for monitoring and analysis and to know the importance of their role in monitoring and questionnaire stage, and the importance of their participation in the sustainable development plan for the area; in order to meet their demands and aspirations in the district. Picture No. (7-D) explains the impact and importance of social and human behaviors in the area, and the role of the strong community fabric in influencing the urban fabric for the area. The questionnaire addressed the social, economic and environmental state; in order to know the requirements of users and visitors, and get the most information and analysis and the involvement of the people of the district in the sustainable development plan for the area.



7-D



7-C



7-B

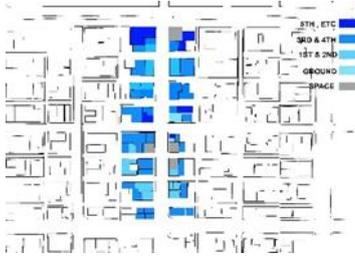
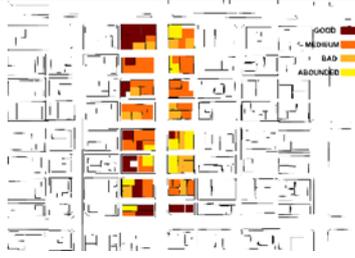


7-A

Figure 7: Models of community participation in research and community cohesion
Source: Intellectual property rights of the researcher

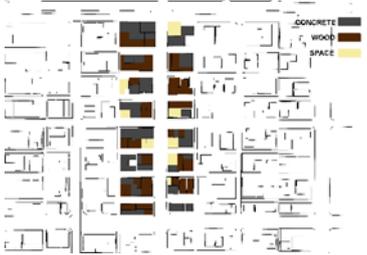
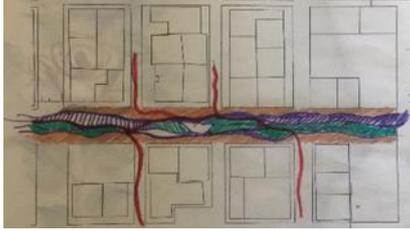
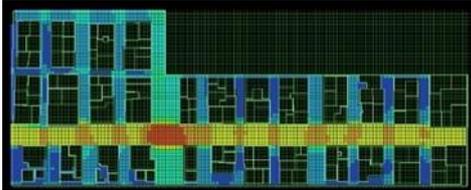
5) Monitoring and questionnaire results:

After the monitoring and questionnaire process, the results of monitoring and questionnaire, monitoring schemes and questionnaire were divided into: urban observations, and demographical observations.

5-1 Urban Observation		
Study	Explanation	Scheme
Building heights	This map shows the presence of vacant lands not used, it must be exploited, and there are some buildings whose height are more than the permissible height and must be regulated. Most the heights do not exceed three or four floors.	 <p style="text-align: center;">Heights map</p>
Building Conditions	We infer from the status map that most of the buildings are in poor condition, and medium states work must be done to raise their efficiency and doing restoration and rehabilitation for them. The presence of uninhabited buildings and those lands must be exploited through them.	 <p style="text-align: center;">STATUS MAP</p>
Heritage buildings	We deduce from this map the spread of heritage buildings in the lands whose facade overlook the commercial market and must be exploited and restored.	

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<p>Structure of Buildings</p>	<p>We note from the structure map that there is a high percentage of heritage wooden buildings, and the presence of a large proportion of buildings concrete.</p>	<p style="text-align: center;">HERITAGE MAP</p>  <p style="text-align: center;">STRUCTURE MAP</p>
<p>Anticipating activities</p>	<p>This map showed the high percentage of pedestrians in the commercial market and the presence of a large proportion of bicycles in the market, and most of the activities fall under the shopping activity.</p>	 <p style="text-align: center;">ACTIVITY MAP</p>
<p>Anticipating itinerary</p>	<p>We deduce from this map the different paths that used by pedestrians to cross inside the commercial market which takes the purple color, and the main lanes that bicycles walk in which take the color red, and the locations of the merchants 'carriages in green, and the spaces taken by the stores excess of the street.</p>	 <p style="text-align: center;">TRACKING MAP</p>
<p>Connectivity Map</p>	<p>And through the use of the program (space syntax) it appears from connectivity map the most gathering places for users and it is the intersection of streets that takes orange color, while the smallest gathering of people appears in blue color through narrow lanes.</p>	 <p style="text-align: center;">Connectivity Map</p>

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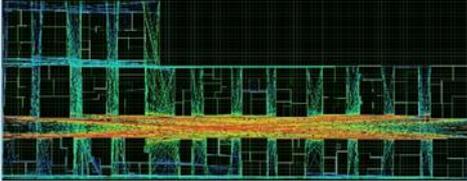
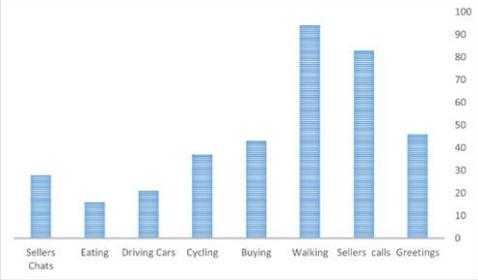
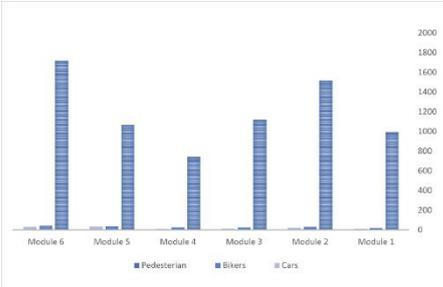
Axial Map	<p>We deduce from this map the most places in which there is movement, and they are pedestrian walkways, which take the orange color. While the least moving places are the narrow lanes that take blue color.</p>	 <p>Axial Map</p>
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Table 6: Monitoring results of urban plans
Source: Table prepared by the researcher

5-2 Demographical Observations		
Study	Explanation	Scheme
Activity Graph	<p>We can deduce from this diagram the most activities in the commercial market and the percentage of each activity in the market. It shows activities with the highest percentage which is walking, and the activities with the lowest percentage which is the popular food that needs to be revitalized and its ratio needs to be increased.</p>	 <p>Activity Graph</p>
Movement Diagram	<p>From this diagram, we deduce the percentage of pedestrians and bicycles and cars in each unit or area and percentage of each activity in each region and the number of users per activity in each region</p>	 <p>Movement Diagram</p>

<p>Pedestrian Flow</p>	<p>We deduce from the pedestrian flow diagram their number in each day of observation in blue day and night in baby blue color, and a high flow appeared during the two days of Thursday and Friday and their rise on some days in the night period.</p>	<p style="text-align: center;">Pedestrian Flow</p>
<p>Sellers Flow</p>	<p>From this diagram, we can deduce the number of sellers in each unit or region, and the diversity of sellers in each region, and their percentage of through: shop owners and commercial trolleys and itinerant merchants and popular food carts</p>	<p style="text-align: center;">Sellers flow</p>
<p>Buyers flow</p>	<p>We deduce through the scheme of buyers the number and percentage of buyers in each unit or study area during the monitoring period and it shows an increase in the percentage of buyers during the holidays especially at night.</p>	<p style="text-align: center;">Buyers Flow</p>
<p>Fear and Safety</p>	<p>We deduce through the safety diagram the percentage of safety in all kinds of tracks through car tracks and tracks of pedestrians and bicycle paths, and the safety ratio takes a baby blue color, while the percentage of fear takes the blue color</p>	<p style="text-align: center;">Fear and safety</p>

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Test Walks	<p>We deduce through the pedestrian test the users' waiting percentage and their staying in each unit of study, where the users' waiting rate is reduced in the first study unit while increased in the last study unit</p>	 <p style="text-align: center;">Test Walks</p>
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Table 7: The results of monitoring the demographic charts

Source: Table prepared by the researcher.

From the results of the research, we can obtain the strengths affecting the commercial market and the threats facing the region, and this is shown through the scheme analytical.

SWOT 5-3 which clarifies the following:

Strength points	Weakness points
<ul style="list-style-type: none"> • High pedestrians in the district in general. • The presence of a distinctive architectural style for the region and a strong community fabric affects the urban fabric of the region. • The high percentage of visitors to the market during the holidays and weekends • Diversity of goods offered in the commercial market, where it is not limited to certain goods, which adds diversity in the shopping 	<ul style="list-style-type: none"> • The market lack of green spaces and environmental solutions. • Movement patterns overlapping between pedestrians and bicycles. • Lack of seating, resting places or parks. • Non-exploitation of vacant lands. • Lack of urban, civilized, and public spaces. • Failure to legalize the status of traders in the commercial market.

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	<ul style="list-style-type: none"> • There are no bike lanes. • There are no pedestrian lanes
Oppurtunities	Threat points
<ul style="list-style-type: none"> • Strong societal cohesion between merchants and residents of the district. • Existence of multiple models of roving car spaces. • The high percentage of women in the market, which gives more sense of safety. 	<ul style="list-style-type: none"> • Deterioration of heritage buildings and non-exploitation. <ul style="list-style-type: none"> • The poor and weak structural condition of most of the buildings in the market. • Exiting shops from the space allocated for them. • The high rate of danger in the streets of cars and the increase in the rate of the speed of cars and the lack of lanes designated for pedestrian crossing.

Table 8: SWOT Analysis

Source: Table prepared by the researcher.

6- Monitoring and questionnaire results: Through this analysis, we can deduce some executive decisions and recommendations that must be worked on, and implementing them through a sustainable development plan that works through sustainable strategies in Al-Hamidi commercial market, and those strategies depend on general strategy:

User Friendly Design – easy use design and many axes are emerged from this strategy and shall be applied

- Walkability (the ability to walk) - more spaces more users
- Cycling – environment sustainability - heritage preservation
- Accessibility – Re-design network of streets
- Social Identity preservation – Socio -economic sustainability.

6-1 (Recommendations and Executive Decisions:

- Designing bike paths
- Designing special spaces for owners of commercial carts, designing a unified model for them, and legalizing the conditions of merchants in the commercial market
- Exploitation of vacant lands
- Increasing the percentage of structural and urban spaces
- Increasing the percentage of afforestation and green spaces
- Designing private spaces and pedestrian paths
- Reconfiguring the infrastructure and designing a rain drainage system
- Providing special spaces for celebrations, carnivals and concerts
- Exploiting the results of tracking users' paths in the design of pedestrian paths

- Providing rapid intervention systems and designing special spaces for fire trucks, ambulances and civil police
- Reviving heritage buildings with a distinctive architectural character and designing new spaces with different functions to work on the sustainability of these buildings
- Redesigning roads and intersecting streets of pedestrians, bicycles and cars.
- Designing spaces for people with special abilities.

6-2 Application stage: The phase of application begins on Al-Hamidi Commercial Market and its revitalization through a sustainable urban design that works to preserve the social fabric and the architectural identity of the region and achieving the principle of sustainability through it.

6-3 Design stages:

6-3-1 First Stage:

- Designing pedestrian paths that intersect with and inside a special path for bicycles, and linking the elements of movement within the Al-Hamidi Commercial Market
- Use of movement tracking maps in designing these paths as shown in the ground plan.

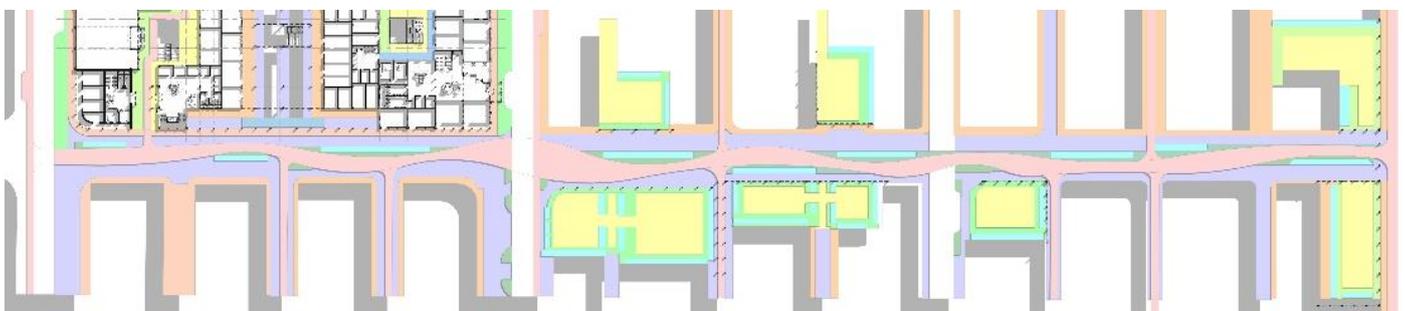


Figure 8: Ground plan of Al Hamidi Commercial Market after development

Source: Intellectual property rights of the researcher

6-3-2) Second Stage:

- Providing spaces for commercial carts that intersect with pedestrian and bicycle paths, as shown in the perspective diagram
- Providing spaces for shops and re-designing shop facades.

Designing a sustainable model for the mobile commercial unit, which includes protection and safety systems and a rain drainage system, and is characterized by ease of dismantling and installation, and manufactured from recycled materials such as: shipping containers as shown in the picture.



Figure 11: A model of the proposed commercial unit and the method of opening and closing it.

Source: Intellectual property rights of the researcher

6-3-3 Third Stage:

- Increasing the percentage of green spaces and afforestation from 5.2% of the area of the district is 32% of the area of the district, and the landscaping spaces intersect with the seating areas and the bicycle and pedestrian paths in order to provide areas with umbrellas for users and achieving environmental sustainability, as shown in the picture.
- Exploitation of vacant lands in designing urban spaces that contain resting places and seating areas, as shown in the picture, it works to attract more visitors and maintain the social fabric.



Figure 9: A picture of the market after development and overlapping movement paths with commercial units.
Source: Intellectual property rights of the researcher.



Figure 10: A picture after development of the afforestation process
Source: Intellectual property rights of the researcher.



Figure 12: A horizontal sector of spaces for the commercial market after development.
Source: Intellectual property rights of the researcher.

It becomes clear to us through these sectors the increase in the number of public spaces and the increase in the proportion of activities and places to sit in them and providing dedicated paths for all market items ,pedestrian movement paths, bike paths and designated paths for commercial units, shopping paths, picnic areas and public spaces and the overlap of those paths with each other in the design process for integrating all elements of the commercial market and developing the community fabric with an increase in the proportion of afforestation and green spaces in the area in order to achieve environmental sustainability.



Figure 13: Three-dimensional sector of public spaces
after development

Source: Intellectual property rights of the researcher.

6-3-4 Fourth Stage:

- Reviving heritage buildings with a distinctive architectural character by preserving and reusing them through different architectural functions Restoration of the facades of heritage buildings and the facades of buildings that overlook the commercial as shown in the picture, preserving the style and architectural identity of the commercial market.



Figure 15: Revitalizing heritage buildings

Source: Intellectual property rights of the researcher.

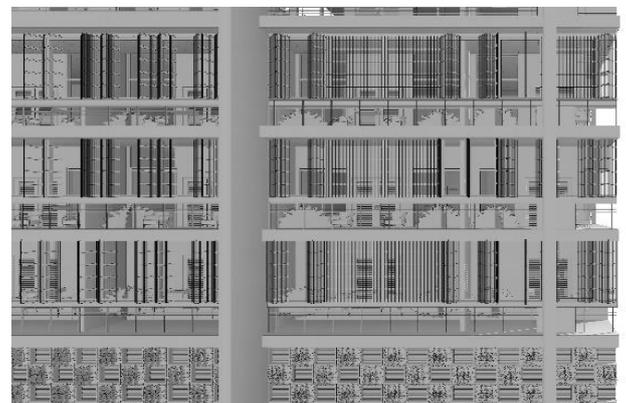


Figure 14: Redesigning building facades

Source: Intellectual property rights of the researcher.

6-3-5 Fifth Stage:

- Working on economic sustainability by re-marketing heritage buildings after their development and revival by adding new architectural functions to them
- Increasing the number of commercial units from 76 commercial units to 124 commercial units, re-marketing them and legalizing the existing situation for the region's merchants' market and maintain their presence in the market.



Figure 16: A model for developing and redesigning a heritage building through a new architectural function

Source: Intellectual property rights of the researcher.

7- Concluding Discussion:

From this it appears that the study succeeded in implementing a sustainable development strategy and a sustainable urban development plan; And that by taking advantage of the results of the monitoring and questionnaire process and following an analytical approach in the sustainable development plan; This is done with community participation from the residents of Arab district in Port Said and traders of El Hamidi market in district.

The study and the development plan for the region were able to meet the requirements of the population, merchants, and the reliance of development plan for the area on reviving the commercial market in Al-Hamidi Street and reviving heritage through the development of heritage buildings and the restoration of facades of heritage buildings, in addition to legalizing the conditions of traders and empowering the residents of the district while achieving sustainable development axes: economic development and environmental development and social and urban development, which the research achieved through study and application.

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