

**The impact of urban transformations on social activities in
the city (Case study Heliopolis suburb)**

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Abstract:

Heliopolis Suburb was founded by Baron Empain In 1905, it includes the palace built in his name (Baron Empain Palace). Urbanization has begun in the last 20 years; because of the development of east Cairo's new urban projects on both sides of Suez road, which made the suburb one of the most important areas, Urban planning authorities are interested in infrastructure development such as the development of road networks, Bridges construction, and roads expansion, To solve the traffic overcrowding problem and achieve traffic flow to and from east Cairo new cities such as Madinaty, Al-Rehab, etc; to integrate New Cairo with Cairo itself.

The main aim of this paper is to study road network development projects and study their impact on social activities in the suburb. The research methodology relies on a theoretical approach that includes a descriptive approach to study the main theoretical concepts. And applied approach includes an analytical descriptive approach to study the case study (Heliopolis), and analyze the urban development that affected the suburb, As well as conducting social surveying for the study sample, Then analyze the result based on the suburb residents' opinion through the individual interviews, to measure their satisfaction of road networks development, and its impact on their social activities. Finally, the research concluded with a set of results determining the Impact of urban development on the social activities in the suburb, the study explained that urban design has an important effect on social activities and formulating recommendations for future urban development processes.

Keywords:

Urban transformation – Urban development – Social Activity – Travel space – Activity space – Gehl's Theory for the impact of urban design on social Activities - Egypt's vision 2030

1. Introduction:

There are a lot of Existing cities have been affected by urban development that is happening in our world today, these development followed by huge changes in urban communities which increase human needs, thus effect on the visual image of Cities to convoy these changes such as changes in urban Areas, Building heights, population density, which causes a lot of problems such as Environmental pollution, Visual pollution, the difficulty of providing healthy housing, changes in building uses, a provision of residents service, The spread of concrete buildings on cities without respect for an architectural, artistic or planning constraints which effected on important historical and architectural building, in terms of the lack of concern in its architectural style,

and the lack of correlation between the physical components (environment) and their moral components (human). Hence the urban planner starts to rearrange and organize population groups and attempt to distribute their functions and various activities therein in an effective manner to match the population and social nature of the site, which is represented by the concept of urban development.

The General Authority for Urban Planning presented a proposed vision for a better future, which aims at transforming Cairo into a sustainable environment capable of balancing between three sustainable developments: the cultural, economic, and political role regionally and internationally, and providing a better citizens' living environment. On the other hand, The Government decided at the beginning of 2018 to update its sustainable development agenda and present the Egypt Vision 2030 initiative; to keep pace with urban changes and developments in existing local areas..⁽¹⁾

One of the most critical initiatives in the vision was the development of road networks to accommodate automated movement from the new cities of eastern Cairo to integrate with the Cairo roads themselves. The Government has renovated road networks in the Heliopolis suburb, which have a unique architectural character mixed with some Moroccan, Muslim, European, and Arab cultures, its unique planning, the availability of public facilities, wide roads, and many parks and open spaces, where the suburb was a humanitarian social city.

1 .Presidency website, <https://www.shorturl.at/FGJK6> .

1-1 Research Problem :

Existing cities have been affected by the development of road networks through the construction of bridges and road expansion, the development of infrastructure for existing residential areas such as the Heliopolis suburb, to solve the traffic overcrowding problem, and to realize the development schemes and the upgrading of urban structures in the non-material aspects (moral and humanitarian aspects), with its customs, traditions, values, lifestyles, and activities associated with the distinctive frameworks of its postponements, during the urban development of the city.

1-2 Research Aim:

- Discover the physical dimensions of the city which effecting on social activities.
- Identify a proposed model to evaluate residents' satisfaction with changes in social activities

1-3 Research Methodology :

1. The Theoretical Study

It includes information Gathering through descriptive approach to study theoretical concepts of research such as: the concept of urban transformations, the process of urban development, Egypt's Vision 2030, social activities, the concept of activities space, the relationship between social activities and urban spaces, and indicators of the urban environment affecting social activities according to Gehl's theory

2. Application framework

It has two approaches:

- analytical descriptive approach to study the case study and to analyze the urban developments that have affected on the suburb
- applied approach to social survey through a field study and then analyzing the results based on the resident's opinions through some interviews, to measure their satisfaction with the impact of road networks development on their social activities,

in this way, as well as field observations; To enrich and strengthen the implementing method research and to establish a link between these two variables.

2. The Theoretical Framework for the study :

A. Urban Transformation:

Transformation is defined as a change to a different situation as a result of an act that requires the change or removal of one or more elements within a formation or the addition of one or more new elements to it, leading to create new relationships between the existing elements and the elements that cause the transformation Whether transformation of size, function, shape, pattern, structure. Transformation is two types: intentional (human-induced) and unintentional (external effect⁽²⁾).

As for the urban transformation is defined as a changes in urban fabric, transforming them from an old image to new urban fabric image which in its impact on all aspects, causing a radical change, such as an ideas renewal, or a change in formal aspects and its value represented into a urban network. The manifestations of urban transformation are divided into

- **physical transformation:** Causes changes in building's shapes, volumes, heights, and facades
- **Functional transformations:** causes changes in tasks performed in urban space such as accommodation, traffic, initial activities, and increasing or decreasing a job. Sometimes it causes a change in the relationship between urban spaces.
- **Social transformation:** it causes a change in residents' social composition such as social classes or their lifestyle.

2 . الرازي.محم بن أبي بكر عبدالقادر، " مختار الصحاح"، دار الرسالة للطبع والنشر، الكويت 1982م.

B. Urban Development:

Urban development is defined as change or conversion from phase to phase ⁽³⁾, and urban development means: Upgrading and improving human societies that suffering from the aggravation of physical, economic, and social problems, So, development means in its general content the improvement of the existing status to a better status, as well as the provision of facilities, services, and all sanitary means that help to solve the problems that these areas suffer from ⁽⁴⁾. So the urban development process is one aspect of urban transformation aspects in human and urban societies.

C. Social Activities and their relationship to Urban space:

Social activities directly depend on the urban space in which a people lives, affects, and is influenced, So urban Space helps people to create spaces that allow them to conduct their social activities safely and easily. Hence the idea of the term "Travel Space", which defines as the space used by a person to perform certain activities at a given time, travel space clarifies the effects on human activities. It is indicators of daily movement patterns observed or realized by human ⁽⁵⁾.

Activity Space is defined as a two-dimensional form consisting of the spatial distribution of those sites with which humans have a personal experience (connection). Figure (1) gives a graphic representation of Activity Space with each point representing a unique activity site visited, and the lines indicate the observed links between those sites. Human locates their own activities, choosing different routes across time and place; to meet their needs and desires, their choices are constrained by the limits of their personal knowledge, mental, physical abilities,

3 . المعجم العربي

4 . جوهر رنا، "متطلبات التطوير العمراني للأحياء التاريخية لتحقيق التنمية المستدامة"، رسالة ماجستير، 2016م.

⁵ Axhausen.KW, "A Dynamic Understanding of Travel Demand -A Sketch", report on traffic and spatial planning, 119, Institute for traffic planning, transport systems, road and railway construction, ETH Zurich , 2002.

and time and focus to choose the appropriate path to move, i.e. to include places where they move and perform their daily activities.

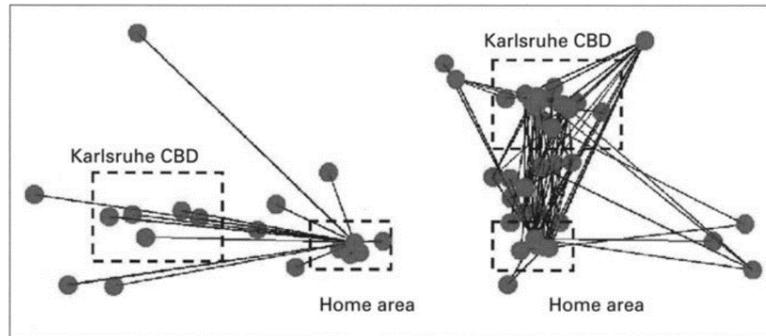


Figure 1: Gives a representation of Activity space between nodes and links - Mobidrive longitudinal travel survey

Rapoport defined urban space as an urban environment that includes a set of communication and interactions. It promotes the socialization process. Forgas confirms that it is necessary to establish social interaction by promoting social activities in the urban environment among members of society to complement socialization in urban spaces ⁽⁶⁾ .

D. The impact of urban spaces on social Activities By Gehl's Theory:

The urban environment offers spaces that support fixed activities, such as standing, sitting, talking, eating, drinking, reading, etc., and opportunities for short-term communications that formed easy interactions with others in a relatively comfortable and easy way⁽⁷⁾

According to Gehl, three types of outdoor activities in public spaces can be identified: necessary activities, optional (unnecessary) activities, and social activities ⁽⁸⁾. These spaces are closed or open, such as streets, squares, nodes, and public parks, which provide the possibilities that residents need to perform a particular activity, making them lively spaces.

6 .Askarizad.Reza, Safari.Hossein, "The influence of social interactions on the behavioral patterns of the people in urban spaces", case study: The pedestrian zone of Rasht Municipality Square, Iran", cities volume 101, March 2020.

7. Gehl.J, "Life between buildings, translated by J. Koch, New York", 1987.

Jacobs.J, "The death and life of great American cities ", Penguin, Harmonds worth (1961).

8 . Gehl, J. (1987). Life between buildings (Vol. 23). New York: Van Nostrand Reinhold.

A lively street is defined as a street with a number of people involved in a variety of mostly static and sustainable activities, especially social ⁽⁹⁾

- **Necessary Activities:** All daily activities related to walking - it influenced only slightly by the physical aspects such as going to school or to work, shopping, waiting for a bus or a person, running errands, distributing mail
- **Optional Activities:** These activities take place only when exterior conditions are favourable, when weather and place invite them, such as taking a walk to get a breath of fresh air, standing around enjoying life, or sitting and sunbathin
- **Social Activities:** all activities that depend on the presence of others in public spaces such as children at play, greetings, and conversations, communal activities of various kinds, passive contacts, that is, simply seeing and hearing other people

E. A Lively City by Gehl's Theory:

According to Gehl, the design of the living city helps the human to do some social activities. By comparing the design of European cities.

- The city with high buildings, underground parking, extensive automobile traffic, and long distances between buildings and functions. In these cities, there are only buildings and cars, and pedestrian traffic is almost impossible, people prefer to stay at home and not spend a long time on the street in these situations.
- The cities with low building, pedestrian places, and green-areas allow to enjoy the fresh air along streets. Here pedestrians can exist because outdoor spaces are easy and attractive to use, it is a living city ⁽¹⁰⁾, such as Italian cities that promote pedestrian over cars in their streets.

⁹ Mehta, "Lively streets; determining environmental characteristics to support social behavior", Journal of Planning Education and Research, 27 (2) (2007), pp. 165-187.

¹⁰ . Gehl, J. (1987). Life between buildings (Vol. 23). New York: Van Nostrand Reinhold. P 31.

F. The impact of urban spaces on social Activities By Rapoport Theory:

In his book "Culture and the urban order", Rapoport introduced the concept of socialization, which helps to promote social activities in public places, as it promotes social interactions, attracting individuals and groups, easy accessibility, social security, and thus more social communication, visual image, and urban components of spaces such as landscape, street furniture, parks space ⁽¹¹⁾. This social communication in public places depends on people's requirements to feel social belonging and interact with each other, and this will be possible in a supportive social space along with providing comfortable physiological functions ⁽¹²⁾

G. Urban spaces Evaluation indicators according to (Gehl – Rapoport):

Developing the quality of city design means how to achieve human satisfaction with different urban characteristics such as mobility modality, public spaces design, recreational opportunities, land use pattern, building density, easy pedestrian movement, and city visual image. The living city is a networking relationship between the quality of outdoor physical urban design and the activities whether optional or necessary according (Gehl - Rapoport). And according to Lynch there are five physical dimensions to perceive urban spaces, paths, edges, district, nodes and landmarks.

11 . Rapoport, A. (1984). Culture and the urban order. The city in cultural context, 67.

12 . Rapoport, A. (1984). Culture and the urban order. The city in cultural context, 50-75.

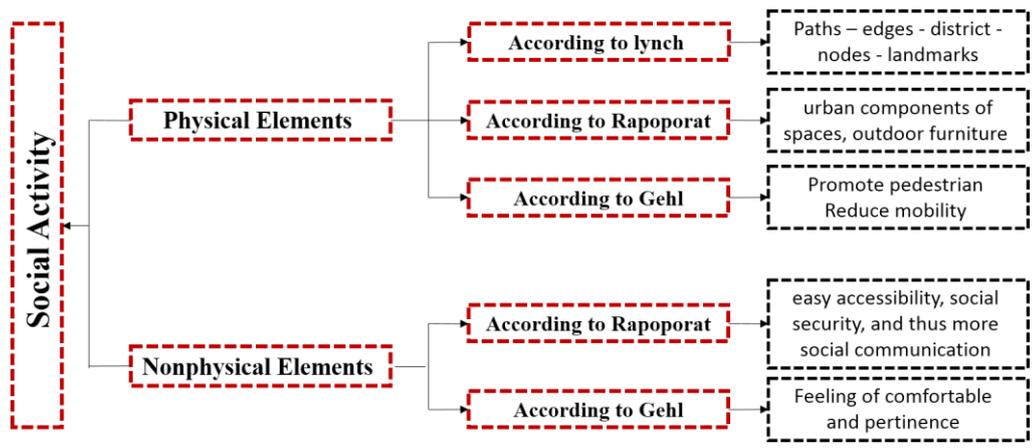


Figure 2 chart shows the physical and non physical effects on outdoor social activities- Researcher

The table below shows, those social activities are directly affected by the urban space design in terms of the streets and road design that promote pedestrians, and the reduction of mobility movement as much as possible, the ease of communication between community members, and the feeling of comfort, happiness and belonging while walking in the streets by increasing green spaces and public parks.

**INTERNATIONAL JOURNAL OF
ARCHITECTURAL ENGINEERING AND URBAN RESEARCH**
PRINT ISSN 2785-9665 ONLINE ISSN 2785-9673
VOLUME 5, ISSUE 2, 2022, 222 – 252.

Physical element of Urban Spaces	quality of city design indicators	Social Activities	
		Necessary activities	Optional activities
Paths	Green Areas along the street	Promote the necessary daily activities, which makes people spend more time outdoors. Create a convenient environment for some recreational optional outdoor activities. Like hiking and enjoying green areas while walking	
	Square existence	As the primary function is a social gathering and promoting social communication between individuals. so it doesn't affect necessary activities, while it affects optional activities	
Edges	Public parks spaces	public parks create an environment suitable for doing some recreational activities such as sports and children's play, family gathering, sitting and enjoying green areas so It doesn't affect necessary activities, while it affects optional activities	
Landmarks	Availability of street vendors	It affects the quality of activities, where distorts the visual image of the city, traffic overcrowding, and impedes the pedestrian, this leads to a lack of comfort and happiness during social activities, and the need to quickly leave the area	
District	Availability of commercial activities	Availability of shops, restaurants, and cafés provides quick and ease arrive to services, facilitating necessary activities, and increasing the optional activities rate	
	Visual Image	The high-quality visual image provides people's enjoyment of starting activities whether optional or necessary, and spending longer time outdoors. on the other hand low quality, visual image reduced the time that people spend outdoors and disappear optional activities	
	Street and road design	If street and road design enhances and increases pedestrian movement, and reduces mobility movement, it enhances the activity's performance and vice versa	
Nodes	Streets furniture	Street and squares furniture promote outdoor activities, such as seats, pergolas, and water elements, and greenery enhances seating, waiting, and passive connection among community members	
	Easy of mobility in city	The ease of mobility in cities requires the design of large-scale roads and streets, which reduces pedestrian's movement and thus decreases the rate of outdoor optional activities, and necessary activities depend on cars more than walking	
	Easy of pedestrian in city	it attracts more people to perform tasks without using cars, which increases the social activities space, whether it is some necessary activities such as going to work or home, shopping, or some	

		optional activities such as hiking and meeting friends, enjoying the fresh air, landscape, trees, and public parks.
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Table (1) shows the impact of each physical elements on outdoor social activities and the relationship between the physical elements and urban design dimensions

The non-Physical Elements	comfortable moving	feel comfortable promotes social activities and increasing the time it takes for activities, then increasing social communication between community members by speaking, hiking, or performing a particular activity or by passively connecting with the community
	A sense of pertinence to the city	Preserving the city and non-physical aspects of the city, give a sense of belonging to the place and thus a sense of comfort and security, which increases social communication among members of the community and creates new activities
	Ease of social communication between members of the community	Affects the size and type of social activities, as the ease of communication increases social interaction and thus enhances social communication then promotes outdoor social activities

Table (2) shows the impact of each non-physical elements on outdoor social activities

2. Application Framework (Case Study: Heliopolis Suburb)

Including a descriptive and analytical approach to study the study sample and analyze the urban developments that affected the region, and an applied approach to a social survey through a field study of the study area. To conduct a comprehensive survey of the study sample, and then analyze the results based on the opinions of the residents of the area through some personal interviews, to measure their satisfaction with the development of road networks and its impact on their social activities. In this way, some personal interviews with the residents of the suburb were used, as well as field observations; to enrich and strengthen the research implementation method and establish a link between these two variables.

The study sample was conducted for residents among its advantages:

1. Diversity between men and women.
2. The population of the suburb for at least three past decades, where a study sample was chosen between " 25-30, 31-50, <50."
3. Calculating the percentages of the total opinions about the level of satisfaction with the development processes.

A. Historical background of the study area:

The suburb of Heliopolis, Heliopolis, is one of Cairo's suburbs. It borders Cairo on the eastern side, one of its most important entrances, and a reception hall for people from all over the world. Due to the presence of Cairo International Airport, it was distinguished by the presence of the entrances to the capital coming from Ismailia and Suez. It is considered one of the most important and prestigious suburbs in Cairo, characterized by the high level of its population, culturally and socially. The suburb of Heliopolis consists of four main districts: Almaza, Al-Bustan, Al-Montazah, and Mansheye Al-Bakari, then the new Al-Nuzha and Al-Nuzha districts were established (Fig. 3).

The suburb was established by Baron Empain in 1905, and his partner, Boghos Nubar Pasha. The planning of the new suburb was inspired by the ideas of the garden city that spread in England at that time, and added a unique architectural style to it; because of its attraction to many foreigners who have different recreational and cultural needs, which in turn affected its urban characteristics and its social and demographic activities.



Figure 3 the subdivision of Heliopolis suburb districts - Source: researcher 2022

The suburb was characterized by four main and distinct types of streets:

- i. The first type: main streets separating the borders of the suburb with a width of 30-40 m and a green island in the middle
- ii. The second type: main streets separating the main areas with a width of 20-25 meters and a green island in the middle
- iii. The third type: secondary streets separating the inner city, with a width of 12-19 meters, without green islands in the middle.
- iv. The fourth type: secondary streets between building blocks with a width of 10 meters and without any green islands or internal sidewalks separating the lanes of the streets.

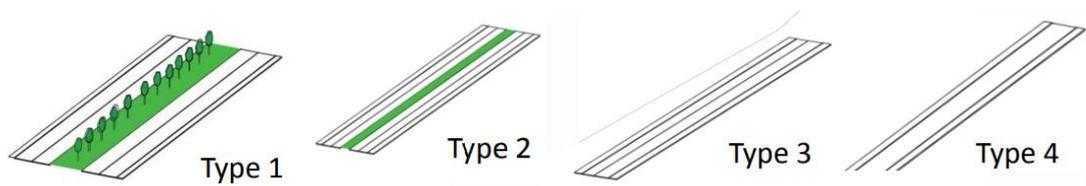


Figure 4 shows the four different types found in the suburb of Heliopolis, starting from its borders and even between the building blocks inside the city - Source: Ain Shams university.

B. The urban development of the suburb of Heliopolis, a brief summary:

The research focuses on studying the development of the road networks for the suburbs and green spaces. The development of road networks, green open areas, public parks, and urban areas in Heliopolis can be defined in three main periods, which is the royal era from 1905-1952 and the era of the three presidents, the era of Gamal Abdel Nasser (1952-1970.), the Sadat era (1970-1981), and the Mubarak era (1981-2011), and then the post-revolution era until our time. The following tables show the urban transformations that took place in the suburb from its inception until our time.

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ARCHITECTURAL ENGINEERING AND URBAN RESEARCH**
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Royal era	Era (Abdel Nasser - Sadat)	Mubarak era
<ul style="list-style-type: none"> • In 1910, the Heliopolis tram was established, the first line between Cairo and Heliopolis, established by the Egyptian Electric Railway Company, to serve citizens; as it is the cheapest and safest way for roads crowded with cars. 	<ul style="list-style-type: none"> • Changing the name of Al-Asr Street to Salah Salem in 1962. • The width of the streets is between 30-40 m. • Identifying main streets, parks, pedestrian paths, and squares. • Changing the tram route to Othman Bin Affan Street 	<ul style="list-style-type: none"> • Increase the number of trams. • Al-Merghani Bridge and Al-Nuzha Bridge were constructed in 2003. • Private cars were the main means of transportation. • Low rate of tram maintenance. • Decrease in streets width.
<ul style="list-style-type: none"> • Very wide streets. • Small number of private cars, as the use of the tram, was relied on. • The appearance of some roads, such as Al-Merghani Street, next to Heliopolis Palace, and the roads parallel to it. 	<ul style="list-style-type: none"> • The start of the Abdel Aziz Fahmy tram line in 1951 AD, while movement on the Nozha tram line started in 1952 AD, the extension of the Marghani tram line in 1962 AD, and the start of the Mataria tram line in 1972 	<ul style="list-style-type: none"> • The relative improvement of the infrastructure and roads has been made to accommodate the traffic congestion and the large increase in the number of housing. • Lack of green areas due to encroachment.
 <p>Figure 5 Heliopolis public tram Source: Al-Sharq Al-Awsat newspaper</p>	 <p>Figure 6 Salah Salem Street Source: Ain Shams University</p>	 <p>Figure 7 Al-Marghani Bridge 2003 Source: Ain Shams University</p>

Table (3) shows the urban development of roads and streets in the suburb.

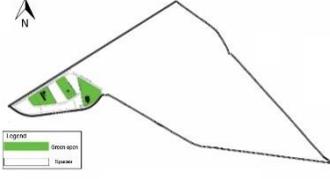
Royal era	Era (Abdel Nasser - Sadat)	Mubarak era
<p>The suburb started in the era of Baron Empain, and there were no built-up areas except for 3 buildings, namely: the Baron's Palace, the villa of Sultan Ibrahim Halim, and the Palace of Pagos Pasha. According to the plan for the year 1931 AD, the percentage of green spaces was only 1.2% of the space areas, and the percentage of buildings was almost non-existent of the land and space.</p>	<p>Buildings and green spaces increased, as green spaces were planted in the middle of the streets and in important squares and squares, public gardens, and green spaces in sports clubs, which reached 35%. And the percentage of built-up areas began to increase in relation to the land area.</p>	<p>Green spaces were encroached upon, and their maintenance was neglected, so many green areas turned into rubbish spots, or commercial projects built on them, which led to an increase in urban areas and buildings until the percentage of buildings exceeded 60% compared to land space.</p>
 <p>Figure 8 shows the ratio of green areas to the ratio of space in the royal era.</p>	 <p>Figure 9 shows the ratio of green areas to the ratio of space during the Nasser era</p>	 <p>Figure 10 shows the ratio of green areas to the space ratio during the Mubarak era.</p>

Table (4) shows the urban development of the green areas and urban areas in the suburb.

C. Heliopolis suburb today:

Since its inception, the suburb has been characterized by a network of streets and intersections that create nodes (fields). Each node acts as a center from which the streets emerge, like the concept of the sun radiating its rays. Straight streets facilitated transportation by tram as an easy and pleasant way to get around, and during the last thirty years the suburb has begun to change; In view of the commercial, economic, and urban changes that affected its features, such as the increase in commercial activities, the migration of some citizens from villages to the city, the demolition of old houses and the construction of high-rise buildings in their place;

This led to overpopulation in the area, and the emergence of problems for all types of infrastructure, such as congestion and traffic congestion, the lack of parking lots, parking in illegal areas (not designated for parking in the initial design of the suburb), and the lack of width of streets and roads due to non-compliance with the laws. Waiting, the disappearance of pedestrian sidewalks due to their exploitation by street vendors, and the encroachment on green spaces by building on them against building laws and legislation in the suburb, starting from the January Revolution until the state's move to initiatives to eliminate traffic congestion in the region, especially during peak times, holidays and events.

The beginning of the development process was in 2014 as a prelude to the state's initiatives toward sustainable development. Heliopolis tram lines were removed from most suburban areas such as Merghany and Al Thawra Street, to increase the number and width of street lanes. This is to increase the traffic flow of private cars passing through the roads and streets in the area. Then, the state launched the Egypt Vision 2030 initiative to develop road networks and infrastructure, by building bridge networks, expanding the width of streets and roads, and also removing some green open areas (green islands in the middle of streets) to utilize their space in the process of developing road networks.

D. Egypt 2030 Vision:

Egypt's Vision 2030 is a national agenda launched in February 2016 that reflects the country's long-term strategic plan to achieve the principles and goals of sustainable development in all fields. The vision focuses on improving the quality of life of Egyptian citizens and improving their standard of living in various aspects of life. It was divided into nine major initiatives to achieve its main goals.

It was one of the most important initiatives that were introduced to face the repercussions of the crisis in suburb, to enhance availability and improve the quality of basic services (water and sanitation, electricity, waste management, transportation, and housing). This initiative within the suburb consisted of:

1. Developing road networks in the region and the surrounding areas, which includes the construction of a new network of bridges as part of the projects for the construction of new axes, free main traffic capable of accommodating large traffic volumes for the flow of traffic to and from Heliopolis without intersections or stops to increase traffic flow, while providing parking spaces for cars. Among the most important projects established in the suburb were

i. The project of the axis (Al-Nuzha - Al-Mirghani - Al-Khalifa Al-Ma'mun) (Fig.11-13) the axis extends for a length of 12 km in two directions and consists of 5 traffic lanes in each direction. It included the construction of 4 bridges: Hijaz Square Bridge, Al-Galaa Bridge, the Seven Buildings Bridge, the construction of Al-Urouba Bridge, as well as the expansion of Al-Merghani Bridge, Figure (12), and the expansion of Al-Nuzha Street to serve the project.¹³



Figure (11) shows some pictures of the bridges in the axis of Al-Nuzha - Al-Mirghani - Al-Khalifa Al-Ma'mun that were implemented in Heliopolis (Heliopolis) during the plan to develop road networks within the 2030 initiatives for sustainable development - Al-Youm Al-Sabea Newspaper.



Figure (12): El-Merghany Bridge shows El-Orouba intersection with a length of 550 meters and a width of 21 meters, and includes 3 traffic lanes in each direction - Source: Egypt Projects Map website.

¹³. The axis (Al-Nuzha - Al-Mirghani - Al-Khalifa Al-Ma'mun) www.shorturl.at/iIOU8.

ii. Taha Hussein axis in Al-Nuzha¹⁴ Figure (14): The axis of "Taha Hussein" Street in the eastern region of the New Nozha suburb, which connects Joseph Tito Road and the 6th of October Road in Nozha, with a length of 2.5 km and a width of 40 m.



Figure (13) shows a map of Heliopolis, showing the axis of Al-Nuzha - Al-Mirghani - Al-Khalifa Al-Mamoun, which connects Al-Nozha Street to Al-Khalifa Al-Mamoun, passing through Al-Hijaz Square - prepared by the researcher 2022.



Figure (14) shows the axis of Taha Al-Husseini - prepared by the researcher 2022.

2. Developing the main streets in the area to expand to eight lanes instead of four lanes, by removing some islands in the middle of the streets or reducing their area and removing trees from them, or by removing Heliopolis tram rails. Also, making transfers in some roads, such as: Al-Thawra, Hussein Kamal, Al-Hurriya, and Omar Ibn Al-Khattab streets. The one-way system has been applied, which will ease the traffic in the areas under construction, and reduce traffic congestion in the future. As this plan aims to also reach the new cities; which will make it enjoy the flow of traffic later.¹⁵

¹⁴ "محور طه حسين بالنزهة"، موقع خريطة مشروعات مصر، [./https://egy-map.com](https://egy-map.com).

¹⁵ "محور روكسي - رمسيس"، افتتاحات رئاسية ومشروعات قومية، موقع رئاسة الجمهورية، www.shorturl.at/hx345.



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Figure (14) shows the axis of Taha Al-Hussein - prepared by the researcher 2022.

i. Development of Al-Khalifa Al-Mamoun Street within the scheme (Roxy-Ramses axis): The Street was developed with a length of 4 km and a width of 40 m. It will become 5 traffic lanes in each direction instead of 3 lanes.

ii. Al-Nuzha Street Within the plan (Al-Nuzha Al-Khalifa Al-Mamoun Corridor), the street was widened by a width of 49 meters to become 5 traffic lanes in each direction instead of 4 traffic lanes, figure (15-16).¹⁶

3. Some of the activities of the "Get Green" initiative, which was launched by the Ministry of Environment under the auspices of the President of the Republic.¹⁷ The development plan was to take care of the environment and green spaces. The government overlapped the environmental component with the concrete component. As it contributes to preserving the environment, through the project of planting flowers inside these bridges; it adds beauty to the concrete character of the public facilities and facilities, after making sure that the bridge planting does not affect the condition and its structural safety, Figure (17).

¹⁶ " محور النزهة - الميرغني - الخليفة المأمون"، افتتاحات رئاسية ومشروعات قومية، موقع رئاسة الجمهورية، www.shorturl.at/iIOU8.

¹⁷ ياسين منى، " وزيرة البيئة: حملة لتشجير ميدان تريمف بمصر الجديدة"، مقال صحفي، جريدة المصري اليوم، 4-1-2020، www.shorturl.at/mpVX0.



Figure (17) Bridge of Court Square is the first square to show the aesthetic modifications, in which the works were completed accurately and quickly due to the sensitivity of its location and to enable people to use it as quickly as possible. Source: Egypt Projects Map.

4. Paying attention to commercial and economic activities and providing private parking spaces for cars, by exploiting the spaces under bridges, providing job and development opportunities such as Al-Marghani Bridge, where some shops and restaurants have been built, and parking areas are provided (Fig. 18).



Figure (18) shows some shops, restaurants, and car parking spaces below Al-Marghani Bridge - Source: Prepared by the researcher

E. Interview with suburb residents

Conducting interviews with Heliopolis's residents to monitor their satisfaction with the urban development's suburb and the extent of psychological and socially affected, then monitor the relationship between social activities and urban transformations. In the interviews, 40 of the suburb residents were 50% male. 50% were female and the study sample was for three decades where the study sample was between the ages of 25-60 years.

After collecting data, the analysis process is carried out in some steps:

- Unloading people's views towards indicators affecting social activities after a development process
- Digital analysis and graphics (Histogram-relative frequency).
- Written analysis.

i. Digital Analysis Table Based on Interviews:

The resident's views have been monitored on the physical elements and their effect on outdoor social activities.

quality of city design indicators	evaluation	Male	Female	Total	%	The impact of social activities
Green Areas along the street	satisfied	4	0	4	10%	a direct correlation
	unsatisfied	16	20	36	90%	
Square existence	satisfied	10	0	10	25%	a direct correlation, Which people gathering
	unsatisfied	10	20	30	75%	
Public parks spaces	satisfied	15	15	30	75%	a direct correlation, Which people gathering
	unsatisfied	5	5	10	25%	
Availability of street vendors	satisfied	20	16	36	90%	indirect correlation
	unsatisfied	0	4	4	10%	
Availability of commercial activities	satisfied	20	10	30	75%	A direct correlation commercial and social activities, promote walking, shopping, gathering and hiking.
	unsatisfied	0	10	10	25%	
Visual Image	satisfied	10	0	10	25%	a direct correlation between high quality visual image and the performance rate of social activities
	unsatisfied	10	20	30	75%	
Street and road design	satisfied	10	5	15	37.5%	a direct correlation between high quality street design that promote pedestrian and the performance rate of social activities
	unsatisfied	10	15	25	62.5%	

Streets furniture	satisfied	5	0	5	12.5%	a direct correlation between high quality street furniture that promote pedestrian and the performance rate of social activities
	unsatisfied	15	20	35	87.5%	
Easy of mobility in city	satisfied	20	15	35	87.5%	indirect correlation, mobility causes lack of pedestrian movements then lack of outdoor activities rate
	unsatisfied	0	5	5	12.5%	
Easy of pedestrian in city	satisfied	5	0	5	12.5%	a direct correlation
	unsatisfied	15	20	35	87.5%	
comfortable moving	satisfied	15	5	20	50%	a direct correlation
	unsatisfied	5	15	20	50%	
A sense of pertinence to the city	satisfied	7	3	10	25%	a direct correlation
	unsatisfied	13	17	30	75%	
Ease of social communication between community members	satisfied	20	17	37	92.5%	a direct correlation
	unsatisfied	0	3	3	7.5%	

ii. Histogram-relative frequency Analysis:



Figure 19 The charts show the percentages and repetition of all residents sample of the suburb are satisfied with the impact of the development processes and their social activities in the suburb

iii. Written Analysis:

Indicators Related to environments

- 90% of the sample were not satisfied with the removal of the green islands that comprise the main streets, and tree cutting from many streets, which affected their comfort in movement in the suburb because there were no shades or aesthetic appearance as in the past.

- Non-discrimination in the suburb's public squares; this caused residents to lose their rendezvous places, as the squares were attractions and discrimination of the streets.
- While 10% of the sample considers that there is no objection to removing some green flats to solve a traffic crisis, and there is no point in dense trees with car exhaust, peak traffic accumulation, holidays, and events.

Indicators Related to Safety

- 50% of the sample didn't feel safe after the road networks development, 25% of them had difficulty walking to their services, the increase in accidents rate of on the main roads, due to the conversion of main streets to highways up to 9 lanes, and the lack of crossing bridges for pedestrians,
- 75% of the sample is disturbed by their inability to walk in the streets with their friends, go to their services or gathering places to do some of their social activities such as walking, moving and social gathering in the suburb without restrictions or feeling a risk in implementing them.
- While 50% of the sample who rely on the use of private cars feels comfortable and safe, for easy movement on the streets and new routes that are characterized by traffic fluidity. One resident said: "Mobility ease of movement is more important than pedestrian traffic, on which we don't rely most of the time; Due to time constraints and inability to walk long distances to reach our destination

Indicators Related to commercial

- 90% of the sample is fully satisfied with the low prevalence of street vendors on the most main streets that have led to traffic overcrowding and the lack of sidewalks for pedestrian. Unlike in some areas of the suburb, the prevalence of street vendors hasn't changed.
- Residents are fully satisfied with the availability of commercial activities, whether on the main streets, secondary and sub-streets, or under bridges.

- While 10% of the suburb's population finds dissatisfaction with the availability of shops in some areas such as restaurants and cafes under bridges, for safety reasons, and also some shops located in vital areas that may cause some traffic overcrowding.

Indicators Related to Social

- There are 75% of the sample lose the sense of belonging to the suburb after the development projects that affected the place, and then affected their social activities, their daily lives, and some residents stated that they had lost the spirit of the place, and therefore felt that they aren't in their old city where they grew up. And that, although unique in its unique architectural, aesthetic and environmental elements, it was now lost. One resident stated that the suburb was unique and different, but now a version of the new urban communities was soulless with concrete blocks, no pedestrians on its streets.
- There are 25% of the sample explain that belonging doesn't mean refusing urbanization, seeing what is best to solve the problems, and the belonging to the place isn't related to the building construction or logging that we used to see. Many residents of the suburb have emigrated due to traffic overcrowding, congestion and population overcrowding in the area.

Indicators Related to Urban.

- 25% of the sample was satisfied with the new visual image of the area as the combination between modern building with curtain walls and new materials, with old buildings with the unique old style characterized by Heliopolis. Some residents felt that the preservation of buildings with a unique architectural style related to the building's safety, construction condition and not its exterior.

- While 75% of the sample feel dissatisfied with the demolition of villas, and old residential buildings, which have a unique architectural style that mimics the history of the suburb, repair these houses better than the demolition of the entire heritage of the area. Because the demolition process loses their sense of belonging.
- 37.5% of the sample is satisfied with the design of new streets and roads, from removing the green islands along streets and the bars of Heliopolis tram, to solve the traffic overcrowding at peak times and holidays. And the realization of traffic liquidity. Some residents have supported some of the State's environmental development projects, such as development of public parks such as the Maryland Park and some fields such as Triumph Square.
- 62.5% of the sample found dissatisfaction with changing the design of the streets because it changed the visual and aesthetic image of the streets. In addition to distorting the history of the suburb, some expressed a grief over the logging, not only for the aesthetic image but it has other benefits: From tempering the atmosphere, easing the sun, enjoying it when hiking or going to our destinations without boring along streets, also removing the squares that mediate the main streets, losing the streets distinctive signs, and all streets becoming like each other, not characteristic of the other, no distinctive visual signs, which changed the social gathering
- .The residents of the suburb were fully satisfied with the performance of the streets and road networks in solving the problem of traffic overcrowding and overpopulation.

4. Conclusions & Recommendation:

A. Conclusion:

1. Studies have shown that road network development projects had an impact on the movement of social activities carried out by the residents of the suburb, and the effect differs between the residents of the suburb between males and females and different ages, in terms of the requirements of each of them and meeting their special needs between:

a. Males were the largest percentage in the interviews regarding the level of satisfaction with the urban transformations that took place in the suburb, in terms of traffic flow, getting rid of congestion, and increasing the width of streets and roads. As they do not need walk to access their own services, as males prefer mechanical movement (using cars) over pedestrian movement.

b. Females were the largest percentage in the interviews about their dissatisfaction with the urban transformations, in terms of not feeling safe while crossing the roads, the difficulty of accessing their services, the difficulty of meeting them, and the difficulty of social communication; Where females used to use nodes, squares, and public squares in the streets to meet to practice daily activities such as shopping or hiking without having to use private cars.

c. The largest percentage of the elderly and females were dissatisfied with the transformations that affected the visual image of the suburb, such as cutting down trees, removing green open spaces, and increasing the width of streets and the number of lanes due to the loss of safety, the high rate of accidents, the increase in car noise, and the inability of pedestrian movement, hiking and walking, which makes them lose their Affiliation to the suburb.

2. The impact of urban transformations was big on the volume of social activities. Some of the activities disappeared, such as riding the Heliopolis tram, which has become a memory for the residents of the suburb that does not lose their consciousness, and strolling the suburban streets in the morning among trees, gardens, and large green areas, the disappearance of social gathering places in some arenas and nodes on occasions.
3. An increase in the accident rate in the region in the last five years; For several reasons including:
 - a. Transforming main and assembly streets and roads into highways consisting of 5 lanes or more, regardless of the type of these streets and the urban nature of the suburb, which made residents lose a sense of security.
 - b. The absence of pedestrian bridges at specific and close distances that allow the passage of pedestrians without exposure to danger; led to the difficulty of pedestrian movement in the suburb.
4. Commercial activities in the suburb are limited to places designated for sale, due to the removal of many street vendors, which has caused traffic jams to be dealt with in the main streets, with an increase in the rate of commercial activities in the suburb; Because of the exploitation of the spaces under the bridges to build shops, the conversion of some residential buildings into commercial buildings, which led to an increase in social and commercial activity in the suburb, and it became a place to attract visitors to the suburb.
5. One of the most important effects of the new road network projects: pedestrian movement reduction, ease of motorized movement, the disappearance of some social activities such as street walks, celebrations, etc., and a change in the visual image of the suburb.

B. Recommendations:

Among the suggested recommendations to maintain consensus activities while developing existing urban development strategies are:

1. Studying the special character of the region, and working to consolidate the urban and architectural character of the region through maintenance and restoration operations for buildings, roads, and public spaces.
2. Studying the needs and requirements of the residents of the existing areas, in the development process, by setting the optimal solution to solve the problems of the built environment (the physical aspect) while fulfilling the desires of the residents to the fullest (the moral aspect).
3. Putting the social aspect in addition to the urban aspect into consideration by the planners in the development and urban development processes, and preserving the existing activities in the existing areas, and working to consolidate and facilitate them, and developing them in a manner appropriate to the needs of the population.
4. Concern with the visual image of the area, in terms of the presence of green spaces, building heights, street, and road widths, and not encroaching on streets in residential areas and converting them into highways.
5. Providing safe means for pedestrian movement in the streets, as cities are based on meeting human needs and desires.
6. Provide pedestrian bridges at appropriate distances, to allow pedestrians to cross highways and streets with large widths to preserve the safety of citizens.
7. Preserve the percentage of green spaces when intervening to develop existing residential areas, and work to increase them if possible.

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