

# Residents' Perception of Home Range in Cairo

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## ABSTRACT:

*Recent studies in the realm of housing design avow for the concept of Liveable Cities; an aspect which in turn, places emphasis on the concept of home range. The home range is regarded as the challenge to create a 'near environment' that is humanistic and fair, community-oriented and environmentally conscious; a relatively new conception towards responsive and sustainable environments for residents' well-being. Considering that socio-cultural needs in tandem with architectural and urban characteristics correspond to residents' perspectives of their home environment; hence, understanding residents' perceptions of their home range should provide designers with deeper insights for creating more responsive residential environments. This study aimed at identifying aspects that contribute to shaping the residents' perception of their home range. The field study included two housing features within the same social class in Egypt with a focus on Cairo: residents of the city's original districts and immigrants of the city to newly suburban gated communities. The methodology was an in-depth qualitative study, exploratory in nature, based on a theoretical content analysis of literature on home range, and a field survey that investigated the residents' perception of the concept. Tools for data gathering relied on photographic and observation methods; together with a structured interview on a random sample in each of the two defined residential environments. Results have generated a framework for decision makers and designers.*

**Keywords:** Home range; sustainability; residents' perception; formal districts; gated communities.

## INTRODUCTION:

The concept of home range – as introduced in this study – complements the notion of 'Liveable City'. It is a promotion of an idea that aims at transforming the residential areas into better, safer, more sustaining and sustainable places for people to live in. Liveability of a city is generally understood to encompass those elements of home, neighborhood, and metropolitan area that contribute to safety, economic opportunities and welfare, health, convenience, mobility, and recreation. Within the overall goal of achieving a liveable city, three major sets of objectives can be defined as characteristics of such a city: *first*, human-oriented and environmentally friendly, with attractive features and a convenient, safe, and pleasant living, which implies a high degree of sustainability; *second*, economically viable and efficient and *third*, socially sound: without social, economic or ethnic barriers; in sum, there should be a sense of togetherness and pride in the city (Vuchic 1999).

Therefore, the home range concept reflects safety and a sense of community where identity and territoriality become major aspects among others for reducing environmental stress in residential areas. A home range primarily relies on its residents' perception of their near environment rather than on its physical planning measurements. In this respect designers have to consider issues of physiological and psychological well-being in addition to the aesthetic values and the physical measurements. Such issues constitute an important integrative approach that should be implemented in design decisions required to achieve sustainability and well-being at both city and neighbourhood levels.

As observed, documented and widely discussed (Drakakis-Smith 2000), the mismanagement and swelling of the metropolitan cities have resulted in a global shift towards prohibiting building new housing projects in the cities while promoting the concepts of gated communities. With respect to the case at hand, Egypt is one of the developing countries facing critical problems of environmental degradation which poses a threat to regional growth prospects and to human well-being; an aspect that in turn, suggests that the residential essence is at risk. During the last 200 years, dramatic changes occurred in the residential communities under different influences. The old medieval pattern which

housed a homogeneous social group became a metropolitan city with a wide range of residential types and lifestyles. Blocks of flats represent the common form of housing in western urban pattern for middle class families, in the formally planned public housing for low-income and in the informal contemporary housing areas scattered on the capital's fringes (Christians et al. 1986). As a response, a national strategy has been proposed for sustainable development. The major goal was to satisfy human needs and attain social welfare over time, while maintaining the human and natural resources and avoiding environmental degradation. Implementing this strategy emphasised two important issues concerning the design field:

- Land reclamation, urban and rural development, and new communities were the major part of human and economic development that should be targeted to satisfy human needs and to attain social welfare.
- Human and economic development, environmental protection and resource management were considered the key aspects for sustainable development.

During the last two decades, the desert land around Cairo has shown dramatic changes in its physical, cultural and social features. Starting as opportunities of desert land reclamations for the agricultural projects, the foundation of the ring road and several road junctions attracted many investors who started new housing projects hence, establishing new communities for upper middle class families, together with some educational, cultural, medical and commercial facilities (GOPP 1993). In most cases the design features of these new communities were profit oriented and determined by land developers. Thus, characteristics of the gated communities provided attractive new living conditions for the upper-middle class Egyptian families: low density, extended green areas. Accordingly, a considerable portion of the population living in nearby overcrowded Cairo districts chose to move seeking a better quality of life in those new communities. In turn, this move imposed the extensive use of cars for long distances commuting to and from the city, with a limited availability of public transportation (Abdel-Hadi & Elazhary 2009). This shift in connectivity on a bigger scale than in the former urban districts triggered the authors to explore the home range concept of the Cairo urban districts' residents and that of the gated community residents.

The argumentative criteria for investigation revolve around three factual deficits concerning the concept of home range. The first is despite the fact that Lynch (1960; Lynch & Hack, 1984) emphasised people's perception of form and imaging yet, it is argued that the human side of the built-environment is still not incorporated in the physical features of planning districts and in housing design. The second is that the available housing codes and legislations marginalise the socio-cultural attributes of residents' user groups. In turn, this evoked an associated argument that local planning of buildings and design codes focus on physical measurements rather than on socio-cultural aspects (Wheeler, 2004; Eisenberg & Yost, 2004: 193-198).

#### **AIMS/ METHOD:**

This study questions issue of similarities and disparities of the home range concept in a sample representing the upper-middle class residents living in two different settings: two early and mid-twentieth century modern districts and two turn of the century suburban gated communities. The aim was to identify the major aspects that represent the residents' perception of home range. The study correlates some underlying implications of the concept, regarded as a criterion for generating sustainable neighbourhood design. It is anticipated that results could generate ideas and frameworks for both decision makers and designers towards a more sustainable home environment.

The methodology was an in-depth qualitative study, exploratory in nature, based on:

- a theoretical content analysis of literature on home range
- a field survey examined residents' perception of the concept

The theoretical content analysis tackled the issue of home range. Then, the conceptualisation of Egyptian home range was reasoned with respect to perceived activity locations and design features of the urban layout, as well as the meanings evoked by both. Outcome of theoretical analysis founded a ground for designing multiple tools for data gathering. Photographic and observation methods were used together with a structured interview on a random sample in each of the two types of residential urban environments.

## **HOME RANGE – A SUSTAINABLE APPROACH:**

This part is devoted to establish a theoretical ground basis of the home range and its direct relation to sustainability. It presents several home range issues raised throughout the study, in order to reach a deeper understanding on how these issues were first introduced, how they developed and in what perspective they have influenced the field work orientation. The most important issues to be discussed can be summarised as follows:

- Home range as a conceptual boundary.
- Home zone versus home range.
- The significant aspects of home range.

### **Home Range – A Conceptual Boundary:**

The home range is a term firstly associated with wildlife as territorial boundaries; it either refers to a map area resulting from fixed location estimates of the animal, or to a numeric estimate of the area used by the animal, with m<sup>2</sup> or km<sup>2</sup> as units (Burt, 1943; Carpenter, 1958). There are many definitions of animal and human territorial behaviour several of which are integrated by (Altman, 1975; Altman & Chemers, 1980; Rapoport, 1982) in which human territoriality is viewed as an instinctual impulse to possess and defend a particular area, and where territory refers to objects, places or geographical areas that can vary in size and can have any shape. It was asserted that human territorial phenomena are not identical. Hence, home range, a term derivative of territory is used in this study as a concept; it represents a more holistic approach to residential environments.

The design and maintenance of a better near environment that grants the well-being of its inhabitants implies both the planning and the demonstration of the built-environment in accordance with the socio-cultural attributes of the residents, together with their psychological and intellectual needs and preferences. Such manifestation is a collaboration of political, economical and legal decisions, together with the physical planning and design (World Bank 1998). Accordingly, residents' identification of place is derivative for the generation of ideas and frameworks for all parties involved in the creation of home areas, districts and cities.

While there is no single blue print for what 'enhanced quality of residential district' and 'better city design' should be, it becomes a prerequisite to investigate people's identification of places and to recognise what they really want out of their cities. Literature tackling planning and design is abundant, yet, it is argued that there is a missing link between the physical aspects suggested by decision makers of planners and designers, and residents' perceptions.

According to the authors' perspective, home range is viewed as the conceptual boundary that people believe as their 'out-side-the-house' near environment. For everyone, a mental map is drawn for a span inside which one feels at home. It is conceived, therefore, that a home range is an individually perceptive definable geographic area, which residents -including children- recognise where their household limit starts and finishes.

### **Home Zone/ Home Range:**

According to the available literature, different definitions for two basic residential issues are generously covered. The first is the residential neighborhoods – tackled from the subject matter of areas, visual perception, and densities (Patik et al.1976). The second is the home zone, where residents perceive a shared ownership and responsibility for communal space, where the existing inter-relationship between private and public areas is altered. Sense of place and identity, supporting community activity and play, reducing social isolation, minimising influence of road and vehicles on layout, and supporting elderly, children and less-ability activities are the major issues of home zone (Appleyard et al., 1981; Gehl 1987).

There are major differences between the concept of home zone and the proposed concept of home range with reference to scale, features, and residents' perception of each. Home zone is a concept that aims at reducing the effect of vehicles and transportation while stressing a sense of shared ownership and responsibility among residents for inner streets and public spaces of the

residential areas. On the other side, home range is a concept concerned with a more holistic mental image of the entire residential environment, no matter the scale, placing emphasis on the satisfactory perceptive territorial geographic boundary for the residents, individually or collectively. Hence, home range is a wider-scoped concept than that of the home zone.

	<b>Home Zone</b>	<b>Home Range</b>
<b>Scale</b>	Inner Streets & Public Spaces.	No matter the scale.
<b>Features</b>	Minimizing influence of road and vehicles on layout	A perceptive territorial geographic boundary.
<b>Residents' Perception</b>	A shared ownership and responsibility for communal space (streets).	A more holistic mental image of their entire residential environments.

Table 1- explaining the differences between 'Home Zone' and 'Home Range'

### **Significant Aspects of the Home Range:**

From perspective, reviewing literature on the issues involved in the definition of home range resulted in electing two main attributes:

- physical measurements and activities locations, and,
- socio-cultural attributes and the sense of place.





For the physical measurements and activities location, literature asserts that people's successful mental and physical recognition and satisfaction of their home range or the 'outside-the-house-environment' is dependent on three basic facets: identifying the places which contribute most significantly to their daily life systems – whatever the scale, relating the places spatially in relation to one another, building up a coherent mental representation, which the cognitive system uses for the understanding process, and, describing the places and the reactions to them. Yet, there were some terms that appeared in the literature, like 'maps in the head' (Lynch 1960), which refers to users' internal representations according to their individual reference system of use. More descriptions about the qualities of activity locations are what about those places are, where people 'hide, love and cry', not only about where those places are. This accentuates that, with reference to the physical measurements, there are attributes that are typically associated with each other, and others are commonly independent of each other (Canter 1977; Lynch & Hack 1984). People's successful mental and physical recognition and satisfaction of their home range is dependent on three basic facets, these are: 1. Identifying the places which contribute most significantly to their daily life systems – whatever the scale. 2. Relating the places spatially or how these places are arranged in space in relation to one another, building up a coherent mental representation, which the cognitive system uses for the understanding process. 3. Describing the places and the reactions to them.

A content analysis of the literature on home range, together with a review of the methods and tools provided by Environment-Behaviour studies EBS (Rapoport, 2005; Zeisel 2006), four major aspects were selected and sorted out as the most influential in the conceptualisation of residents of their home environments:

- Physical measurements, where home is defined as a center, and points of great activity distances draw a range around it. Indicating range on maps, stating distances allowed for kids on their own, listing landmarks that indicate range peripherals were methods chosen for the investigation of this aspect.
- Activity locations, and the spatial relationships between them, and between the home, and the intensity and/or frequency of conducting such activities were also drawn from the literature. Stating activities done on foot/car, and their frequency per day/week/month were the methods devised for the investigation of this aspect.
- Socio-cultural attributes: identifying user groups, behavioural features of social interaction, and examining privacy, isolation, security, sense of community, sense of belonging.
- Perception and sense of place, investigation of meanings evoked by the configuration of the built environment, together with their implied/generated opinions and values.

## THE CASE STUDY

Four Cairo districts were selected: two streets from two formal districts: Mohamed Ramzi Street in Heliopolis district (northern east Cairo, planned in 1905) and Shehab Street, Mohandessin district (west of Cairo, planned in 1950 and much changed since the 1980's); in addition to two gated communities: Rehab city to the east of Heliopolis district founded in 1996, including villas and walk-up apartment buildings, and, Rabwa compound to the west of Mohandessin district founded in 1995, including only villas. The aim was to provide insights related to understanding residents' attitudes towards the identification of their home range, recognising design aspects of the built environment associated with residents' familiarity to their home range in different housing types, and, addressing methodological issues of examining residents' experiences of their home range. The designed tool was distributed among a sample of residents from the four areas, together with walk troughs' to serve researchers' observations. Then data analysis is conducted in adherence to the theoretical criteria and debate elucidated.

FORMAL DISTRICTS	GATED COMMUNITIES
Heliopolis – Mohamed Ramzi street	Rehab City
 	 
<ul style="list-style-type: none"> <li>• The entire district was elegantly designed on vast land plots, with eclectic style, encompassing different zones for different social classes of user groups.</li> <li>• Apartment buildings with different European styles, close to modern activities required by the targeted user group of the mid twentieth century; clubs, shopping, parks, schools, day care centers, etc.</li> <li>• Most residents live in Heliopolis for two or more generations moved in as newly wed. As it was a beautiful, elegant, homogeneous, and affordable, close to services and facilities. The younger generations chose Heliopolis for its centrality, homogeneity. Some chose it because they felt belonging, as they grew up there.</li> <li>• The dominant age group is older than 40 years old, with residency duration ranging from 5 to 58 years.</li> </ul>	<ul style="list-style-type: none"> <li>• Planned to accommodate 200 thousand residents.</li> <li>• All facilities and services included schools, a sporting club, business and banking zone, medical center, clinics, transportation means.</li> <li>• Residential clusters vary from apartments buildings to town houses to villas.</li> <li>• All surrounded by greenery and connected through pedestrian passageways.</li> <li>• Most residents moved from their original residential areas escaping from crowded areas, noise and pollution. Some wanted to upgrade and switch home from an apartment to a villa. They chose Rehab city seeking for a better quality of life; private, quiet, green, and healthy environment, with all services included.</li> <li>• The dominant age group is thirties, with residency duration ranging from 2 to 8 years.</li> </ul>




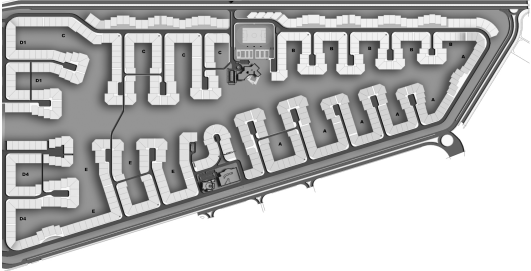
Mohandessin – Shehab Street	Rabwa Compound
 	 
<ul style="list-style-type: none"> <li>• The district was built on new town-planning schemes, with subdivisions into zones for governmental professionals, including modern activities required by the emerging user groups.</li> <li>• Most original buildings that followed modernism are destroyed to host high rise buildings, causing an explosion in densities.</li> <li>• Residents were divided into a group that lived there for two generations or more, when the area was relatively new, and another that moved seeking the newly bigger apartments close to their families and work.</li> <li>• The dominant age group is older than 40 years old, with residency duration ranging from 8 to 47 years.</li> </ul>	<ul style="list-style-type: none"> <li>• All residences are villas with very low density and highest percentages of areas are left for greenery and public spaces.</li> <li>• The compound includes a club, a mini-golf course, and a mosque, other services are outside the gate.</li> <li>• Residents moved from their original residential areas escaping crowded areas, traffic and pollution.</li> <li>• They chose Rabwa basically for its greenery, quietness, cleanliness, and healthy environment. Sizes of villas and their gardens were also among their criteria.</li> <li>• There is no dominant age group. Residency duration ranges from 3 to 10 years.</li> </ul>

Table 2; images from the four selected areas

## RESULTS AND DISCUSSION

Results of the field survey were interpreted in two main lines:

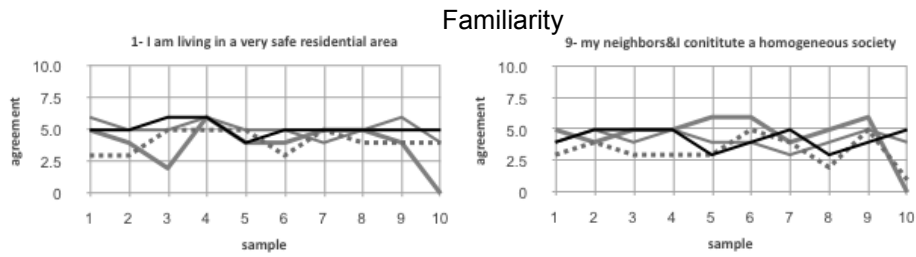
- residents' attitudes and opinions toward their home environments
- residents' perspective of the concept of home range

### Residents' Attitudes and Opinions toward their Home Environments:

The first line of the survey addressed examining residents' agreements to some statements related to issues of familiarity, privacy needs, sense of belonging, safety feelings, and sense of identity towards their home environment. Comparisons of residents' agreements in the four areas were represented in the associated graphs.

#### ○ Familiarity:

In all the four areas, residents' feelings of familiarity were highly vibrating- in particular- towards the design of their homes. The highest agreements to familiarity of the home environment are expressed by Rabwa compound residents, while the lowest by Shehab street, Mohandessin residents (fig #1).

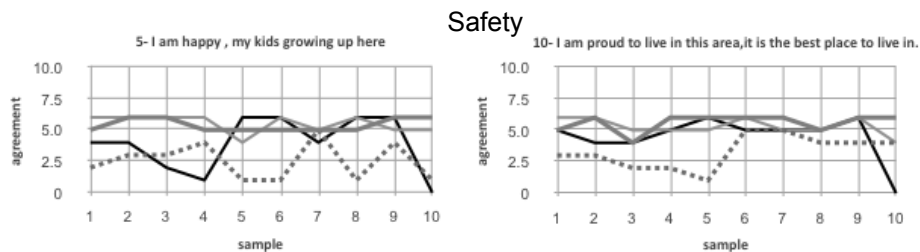


(fig #1)

This result points out the gap between the available layout design in most residential areas, which are dictated by the market criterion, and the actual needs of users.

o **Feeling of Safety:**

Feeling secured from physical attacks and personal insult is considerably high and consistent in the four areas under investigation. While residents' feelings in Rabwa compound (the lowest density) are the most vibrating compared to responses in the other areas (fig #2).

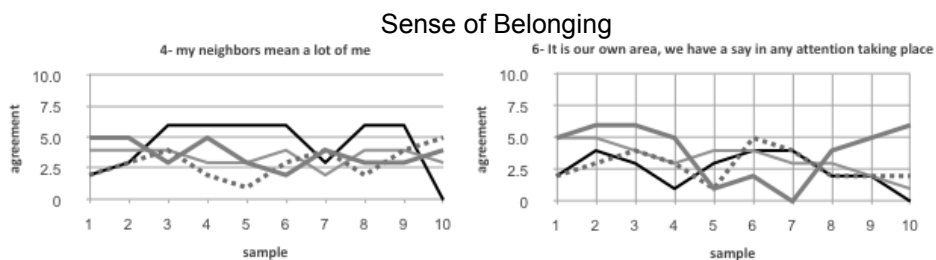


(fig #2)

Concerning feeling of security from being invaded by unwanted social groups (the lack of social homogeneity) residents' agreement is high in the four areas except in Shehab Street, Mohandessin where the area is transformed from villas to high rise buildings for mixed use.

o **Sense of Belonging:**

In the gated communities – Rabwa compound and Rehab city – residents' sense of belonging is high and consistent while it is low and vibrating in Shehab street, Mohandessin and M. Ramzi street, Heliopolis (fig #3).

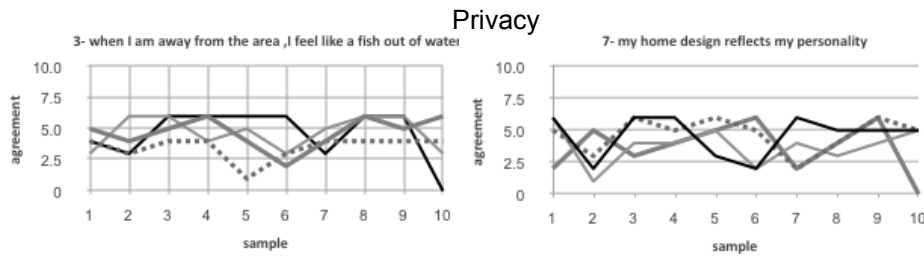


(fig #3)

This indicates the importance of allowing more territorial boundaries for residential areas to increase their sense of belonging towards their home environment.

o **Privacy Needs:**

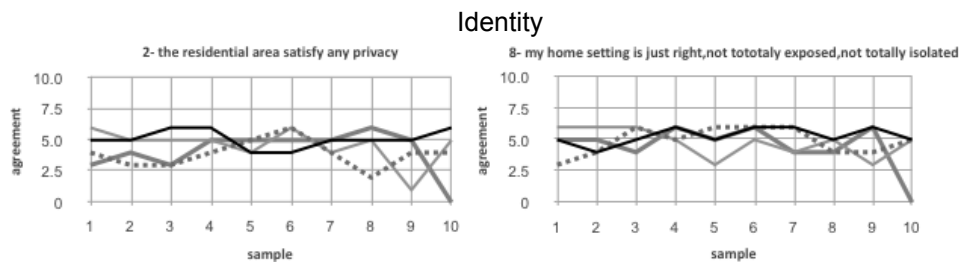
Residents' satisfactions about their privacy needs are relatively consistent, in the four areas. In Rabwa compound, M. Ramzi street, Heliopolis and Rehab city residents expressed high sense of satisfaction, while residents in Shehab street, Mohandessin expressed lack of privacy as the area is characterized by high density, mixed social groups, narrow streets, and high rise buildings (fig #4).



(fig #4)

○ **Identity:**

Residents of three of the four areas expressed highly vibrated feelings of pride towards their living environment while the lowest agreement of sense of is pride was expressed by Shehab street, Mohandessin’s residents. In M. Ramzi street, Heliopolis, and in Rehab city, residents strongly agreed that the two areas are convenient for their kids to grow up. While in Rabwa compound, and due to its small scale as a gated community, with no educational facilities and less recreational facilities, residents’ agreement is lower. Residents of Shehab street, Mohandessin expressed their disagreement about having their kids growing up in the area (fig #5).



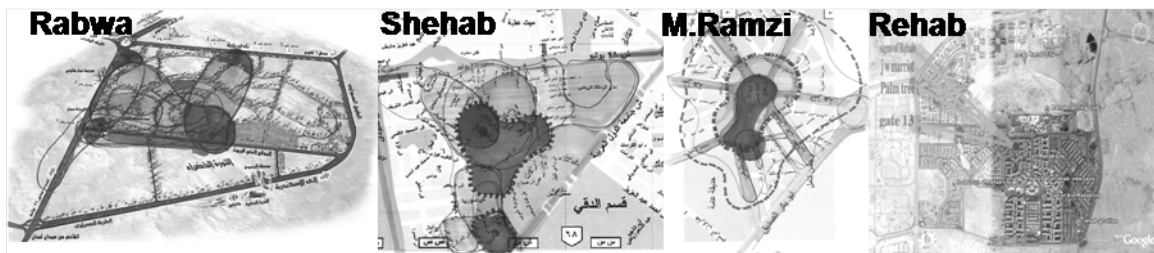
(fig #5)

**Residents’ Perspective of the Concept of Home Range:**

The second line of the survey addressed examining residents’ perspective of the concept of home range with respect to each of physical measurements, accessibility to activities, and, residents' perception and their sense of place.

○ **Physical Measurements:**

In the four areas, resultant mental maps drawn by residents (fig #6) showed that home range is perceived through correlating the location of their homes with the daily services spots, main traffic roots and landmarks such as mosques, clubs and green features. Distances -however, were not the indicator for identifying home range, as there proved to be major differences in the perceived area as home range in the four areas as follows:



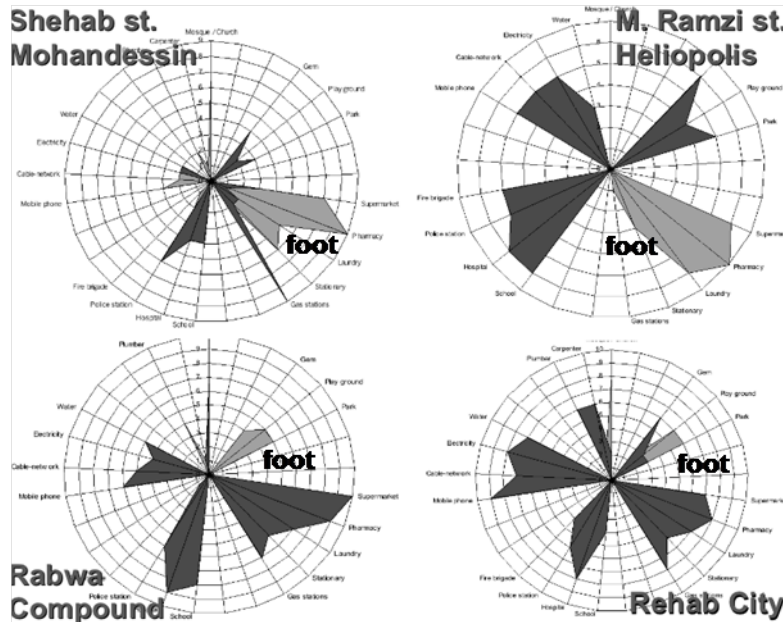
(fig #6)

In the case of Shehab street, Mohandessin and M. Ramzi street, Heliopolis, with their high densities and mixed uses, the identified home range is considerably a small area surrounding homes. While in Rehab city and Rabwa compound, with their nature as low density gated communities, and separate use, the areas identified by residents as their home range were large and extended outside the borders of the community.



- **Accessibility to activities:**

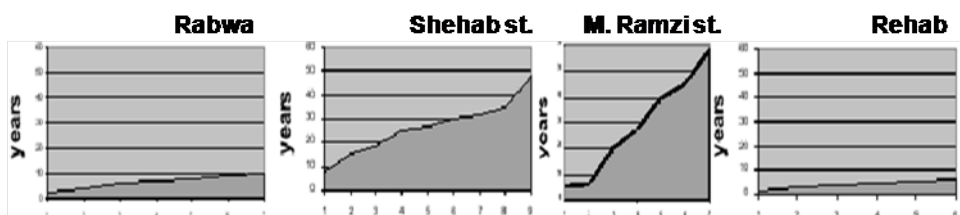
Examining the aspect of accessibility indicated that there are differences in the means by which residents reach their daily services. In Rabwa compound and Rehab city, most respondents affirmed that they rely on cars to reach the service areas located in their home rang; while in Shehab street, Mohandessen & in Ramzi street, Heliopolis, service areas are at a walking distance from resident’s homes (fig #7).



(fig #7)

- **Residents' perception and their sense of place:**

In the four areas, residents were asked to express their own ideas about the concept of home range. Responses emphasised that familiarity, social interaction, accessibility of services, identify and safety are key aspects involved in identifying the home range. A CHI square analysis proved that only familiarity, safety, and social interaction were significant, while the other two aspects were not. This could be explained through the differences in layout design and landscape characteristics; a matter that affected residents’ accessibility to service areas. Consequently, the short term duration of living in the two gated communities was a factor that lessened residents' feelings of identity towards their home environment (fig #8)



(fig #8)

## CONCLUSION

This research aimed at exploring the major aspects that are involved in residents’ perception concerning the home range concept. The main focus was to underlie implications of the concept that generate sustainable neighbourhood design. Accordingly, the literature content analysis and the results of the field study have laid hands on aspects that help in understanding how the concept of home range is perceived by upper middle-class families in different home environments in Cairo.

The research emphasised that home range is a concept perceived in social terms in reference to activities and uses, rather than in physical measurements. In the meanwhile, residents' responses put emphasis on familiarity, social interaction, safety, accessibility of services and identity, as key aspects involved in perceiving the home range. An interrelationship is thus revealed between the residents' attitudes and opinions towards their home environment and its physical characteristics: densities, land uses, scale and landscape design. Hence, the interface between physical aspects of home environments and social attributes represents the essence of a sustainable living environment.

On this basis, it has been proved that when dealing with the issue of housing design for sustainable neighbourhoods, an integrative multidimensional approach is required. This means that generating an integrative knowledge base which follows a research based design process; then, practicing with collaborative and shared attitudes; also, breaking the boundaries between the design field and other fields of specialisations; all previous approaches are essential for creating sustainable home environments.

To sum up, this study draws on several directions for future research. As indicated in the results, perceiving home range depends on identifying places that contribute to daily life activities and their relations to home locations. However, the previously stated related literature affirmed that perceiving home range depends also on relating places spatially to one another, on building mental representations which the cognitive system uses to understand the environment, in addition to describing places and how residents react to them. Reaching this point of conclusion, it is believed that the study at hand is regarded as a prologue for future investigations concerning the socio-cultural issues raised in this study. Finally, it is our conviction that only through similar studies can planners and designers consider what people really want out of their home environments, and hence develop a criterion towards the achievement of liveable cities.

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