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Towards more pedestrian-friendly streets in Cairo

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TOWARDS MORE PEDESTRIAN-FRIENDLY STREETS IN CAIRO

A Thesis Submitted to the

Public Policy and Administration Department

**In partial fulfillment of the requirements for the degree of
Master of Public Administration**

By

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ABSTRACT

This research explores the factors that make the streets of Cairo better places for walking, more inviting, and adaptable to be used by pedestrians. In order to closely examine how far Cairo streets are pedestrian-friendly, walkable environments, the research investigates one street in Cairo as a case study. The case study uses qualitative research to investigate the street characteristics through participants' observation technique, while the local pedestrians' needs and perceptions towards the street's walkability are explored through interviews. In addition, an in-depth interview is conducted with an expert in order to have deeper insights into the issue of pedestrian-friendly streets from a professional perspective. The existing models reviewed through the literature have contributed to the development of the proposed conceptual framework. The study's empirical findings have shown that safety and cleanliness of streets are the main factors that influence people's walking experience. Besides, pavement and sidewalks conditions, street furniture and lighting, along with other street user's behavior, such as car drivers and shopkeepers, are other factors that implicitly and/or explicitly affect street walkability. The analysis of the findings contributes to the limited qualitative research on walkable streets and pedestrians' walking experience specifically in Cairo. Thus, this study offers a set of recommendations for policy makers and city managers in terms of conducting further research that covers other geographic areas in Cairo, adopting a participatory planning approach, enforcing laws and regulations on street occupancy, applying people-oriented planning paradigms, and raising public awareness on walkability.

DEDICATION

I dedicate this thesis to my beloved family who continuously supports me especially my dad, mum, brother, and my two lovely sons Malek and Yassin.

ACKNOWLEDGEMENTS

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CHAPTER ONE
Introduction

1.1 Background: Framing the issue of pedestrian use of streets as part of their public space

According to UN-Habitat report (2013), streets have multiple roles aside from being means of linkage between destinations; they act as common spaces for multiple users, including diverse gender, age, and socio-economic groups, who can engage in social, cultural, political, and economic activities (ibid, 2013). Thus, streets represent a main component of public space that embodies different users with multiple interests. However, in developing countries, streets are mainly designed for vehicle use with limited feasibility of using them for other numerous activities that satisfy the needs of different groups of people, who need to use the streets freely and safely.

In this research, streets are defined in its wider context of being a public space. According to UN-Habitat (2015), "Public spaces are all places publicly owned or of public use, accessible and enjoyable by all for free and without profit motive" (p.1). The characteristics of public spaces mentioned in this definition, which are mainly public ownership of the place, enjoyability and free accessibility by all, are pertinent to the uses of streets in general and to pedestrian-friendly streets in specific. Thus, it is believed that the factors and forces that influence and manipulate the uses of public spaces in general are applicable to streets, as well.

Studying the public space and its dynamics in general and the walkable or pedestrian-friendly space in specific is one of the multidisciplinary topics that attract the attention of different scholars, practitioners, and policy makers in different disciplines, such as urban designers and city planners, environmentalists, public health specialists, and local administration including managers of public spaces. Hence, it was suggested in planning and public health literature that spaces can be so-called healthy, compact, efficient, and good for social interaction if they are designed and planned to be walkable environments (Mehta, 2008).

In addition, public health experts encourage walking as a recommended daily need for physical activity, while environmentalists who care about the environment encourage walking as a means of transport that substitutes driving and reliance on cars, which in turn minimize fuel consumption and hence help reduce the environmental pollution (ibid).

This multidisciplinary attention to the topic is driven by the benefits of having pedestrian-friendly streets in cities in terms of social, economic, environmental, and political dimensions, which integrate to enhance the well-being of both the people and the city. In this regard, the UN Habitat (2013) mentioned the benefits of walkable and pedestrian-friendly streets as follows: It is assumed that when streets are planned and designed to accommodate different modes of mobility such as walking, cycling and public transportation rather than being car-oriented streets, the results will thus be lessening carbon emissions and cutting down dependence on fossil fuels, which is good for the environment and a basic requirement of sustainable urban development. In addition to the environmental benefits, pedestrian-friendly streets have social and economic merits. When streets are designed to be more people-friendly, it means that people can gather, socialize, and share common activities. Hence, people from different socio-economic backgrounds interact and share equally their pubic space. This function of streets can help to encourage social diversity and connectivity, hence creating neighborhoods that are more cohesive, lively, and eventually more attractive to both residents and investors.

Thus, it was found that cities that are considered prosperous are those that recognize the significance of allocating proper public spaces and those which have assigned adequate land to the street development (UN-Habitat, 2013). On the other hand, cities that have failed to incorporate the diverse functions of streets are those that have lower productivity and quality of life for people (ibid).

1.2 Egyptian context of the issue

Referring to Egypt, it is ranked the 115th country in the individual's level of happiness and quality of life, which is a very low global level, where it is assumed that the absence of public spaces is one of the causes that negatively impacts the people's level of happiness and overall quality of life (Cairo Climate Talks, 2012). Thus, well designed, managed, and maintained public spaces in general and streets in specific contribute to the well-being of people living in the city, which can be reflected in the quality of their daily life routine.

Focusing on Cairo streets, informal street vending is one of the pervasive features that dominate the streetscape. The International Labor Organization (ILO) has attributed half of Egypt's "non-agricultural domestic economy" to informal street vending (Stryker, Nagati & Mostafa, 2013). On one hand, and due to such figures, some argue that street vending is a phenomenon that reinforces the economic vitality of streets. On the other hand, due to multiple reasons, one of which is informal street vending, Cairo streets offer limited and unsafe environment for pedestrians to enjoy their rights in walking or socializing (Stryker & Nagati, 2013). Economic vitality of our streets is a healthy feature of the city where interaction among people with different socio-economic backgrounds takes place; however, it should not be overriding other aspects. The same case is for cars invading Cairo streets, either in traffic or encroaching on sidewalks for parking, leaving a limited space for pedestrians to use their streets in different activities, or even to have safe crossings from one point to another.

Any Cairene walks down Cairo streets can easily observe and describe the salient features of the city streets regarding their planning and designing, which are both focusing on the car use of the streets with less priority given to pedestrians' uses. The de-prioritization of pedestrians, as one of the user groups of streets, limits the function of the streets to just travelling from one destination to another, marginalizing any other function. The overpopulation in the Greater Cairo Region (GCR) can be part of the challenges regarding

mobility issues and the overcrowded streets with vehicles. According to the World Bank (2014), 19 million residents live in GCR, with an expectation to reach to 24 million by 2027; besides, 7,000 motor vehicles per hour per lane is an estimated traffic volume on main access strips such as the Ring Road at Carrefour al-Ma`ādī and the 6th of October bridge throughout peak hours (as cited in Tadamun, 2016). The planning paradigm that is followed in Egypt in response to the traffic congestion that causes mobility problems is the construction of more roads, tunnels, and bridges (ibid). This motor vehicle-oriented solutions lead to other problems in terms of environmental pollution by increasing the motor vehicles number thus carbon emissions besides traffic accidents. As stated by the Central Agency for Public Mobilization and Statistics (CAPMAS, 2012), there have been 15,516 road accidents in Egypt in 2012 only, leading to 21,620 Road Traffic Injuries (RTI) and 6,431 Road Traffic Fatalities (RTF), where the percentage range of cyclists and pedestrians in RTFs is from 20% to 75% of RTIs in Egypt (as cited in Tadamun, 2016). Hence, the current planning paradigm for transportation and mobility issues in Egypt, especially GCR, needs a shift from being a vehicles-focused to people-focused, which can lead to more sustainable and safe solutions for both the people and the city well-being.

Thus, the improvement of streets starting from the planning and design phase of new streets and roads till their management, maintenance, and the relevant policies and laws has to reflect the various priorities of street uses in order to benefit from the multiple roles of streets as public spaces. Interventions have to encourage alternative mobility options such as walking and cycling with the aim of gradually replacing the increasing vehicles on streets that cause negative impacts on the environment and the people. Furthermore, regulating the uses and activities of different groups of street users is essential to reduce the conflict that arises among them. Each group claims its right and priority in using the public space without having clear boundaries.

On the subject of the policy relevance, people's rights to well-established pedestrian-friendly streets needs to be echoed in the Egyptian constitution, laws and regulations. Thus, public policies need to address the issue of pedestrian use of streets. The policy framework for this issue can be encouraged under more than one policy directive: environmental policies, in terms of mitigating emissions by reducing car and vehicle usage; social rights in streets as part of the public space, in terms of the 'right to the city', which is defined by the Global Platform for the Right to the City (n.d) as " the right of all inhabitants, present and future, permanent and temporary to use, occupy and produce just, inclusive and sustainable cities, defined as a common good essential to a full and decent life" (p.3). It is a concept that was initially theorized by Henri Lefebvre, a French sociologist and philosopher (ibid). The concept has been developed after a long history of debates and social struggles and later operationalized worldwide in national legislation such as Brazil's City Statute (2001), city charters such as European Charter for the Safeguarding of Human Rights in the City (Saint Denis, 2000), and global compacts such as the World Charter for the Right to the City (2005) (ibid).

Recently, some plans have been implemented towards *pedestrianization* of downtown streets such as Al-Alfi and El-Boursa streets. However, the proposed study focuses on pedestrian-friendly streets and not pedestrian-only streets.

1.3 Statement of purpose

The proposed research intends to focus on the streets of Cairo from the pedestrian-use perspective. The main purpose of the research is exploring and examining the factors that make the streets of Cairo better places for walking, more inviting, and adaptable to be used by pedestrians, who are the main group of interest in this research. This study intends to contribute to the limited qualitative research on walkable streets and pedestrians' walking experience specifically in Cairo. In addition, it provides a conceptual framework for understanding

walkability of streets and the experience of pedestrians built on both empirical field study and prevailing theoretical models as reviewed in the literature.

In order to closely examine the factors that determine Cairo streets to be walkable and hence pedestrian-friendly environments, the research investigates the current status of one street in Cairo as a case study. The case study entails investigating both the street characteristics and the local pedestrians' needs and perceptions towards their experience of walking in the street. In addition, an expert's points of views are pursued in order to have deeper insights into the issue of pedestrian-friendly streets from a professional perspective.

1.4 Scope of the research

Investigating the current status of the selected street is in terms of observing the multiple patterns of uses of these streets by different groups of users, such as pedestrians, street vendors, shop owners, car drivers, and residents, who are all claiming their rights and different interests in using the streets publicly.

In addition to examining the different patterns of street uses, it is inevitable to examine the conditions of the selected street in terms of urban management and maintenance by the responsible government entities. In this regard, physical and environmental characteristics of the street are studied, such as street sidewalks, lightings, furniture, crossing signs, shading, greenery, and other features. The data collected from this step is intended to be a core element of the study as it is expected to yield knowledge about the characteristics that play a vital role in shaping the streets to be more inviting to pedestrians.

Moreover, the research is pursuing the local pedestrians' points of views towards the walkability of the case study street in an attempt to deeply understand their perceptions and needs that are influencing their walking experience. Investigating users' needs and perceptions

is believed to help decision makers and city planners to improve streets' walking environment and hence walkability through considering individuals' subjective demands.

1.5 Significance of the case study area

The selection of the study area is intended to focus on one of the districts in Cairo other than the city's Downtown, where most of the studies related to Cairo focus on Downtown area and its surroundings. Thus, studying Nasr City as one of Cairo's peripheral districts helps to explore further areas. The case study street Abou El-Ataheya Street is an extension of Abbas El-Akkad Main Street, which is located in Nasr City district. According to Elshahed (2015), Nasr City was built in 1958 during Nasser's military regime as the *city of revolution*, which was envisioned to be Egypt's new capital. It was planned by architect and planner Sayed Korayim as a modern city that reflects the development that the new regime was heading towards (ibid). Building Nasr City was aimed at attracting the new middle class at the late 1950s (ibid). Beside residential purposes, planners of Nasr City dedicated spaces to building administrative facilities to locate new ministries and to relocate others from the downtown zone (ibid).

In reference to the case study street Abou El-Atahia Street, it is an extension of Abbas El Akkad Main Street in Nasr City district. The street connects between two main artery streets in Nasr City: Mostafa El Nahas and Zaker Hussein streets, which cuts through almost all neighborhoods of Nasr City. Abou El Atahia Street then is one of the connections between these streets, as an extension to Abbas El Akkad Street, which helps to move heavy traffic from central Nasr City towards its edges, including traffic heading to the New Cairo and the ring road.

Referring to the street type in terms of usage, it is not limited to one type either residential or commercial uses; instead, it is a mixed-use street visited by wide-ranging types of pedestrians due to the presence of a number of landmarks. For example, there is the

international park, which is a destination for a variety of people for multiple purposes, such as school trips from different governorates, families, and individuals for recreation, jogging, walking, wandering, dinning, etc. Moreover, there is the Wonderland shopping mall and amusement park, which has cinema theatres, diners, coffee shops, a famous supermarket, and other types of shops. On the other side of the street, there are residential buildings that have on their ground floors clinics offering a range of medical services, shops including bookstores, for renting and selling bicycles, computer services and copying centers, and others, and the Egypt Air travelling office, as well. On both sides, there are kiosks that serve both car drivers and people on foot, whether walking down the street or visiting the park or the mall. Due to its mixed-use nature, it is believed that this street is diversified in usages and activities; thus, various categories of people are visiting it for diversified purposes and in different timings, which offers a rich environment for studying the pedestrians walking experience in a naturalistic setting among other street users.

1.6 Structure of the research

The presented research is structured to cover the following main sections: 1) theoretical framework displaying the reviewed literature and the guiding models and theories; 2) research questions and methodology used to answer them; 3) field study in terms of participant observations and street interviews with pedestrians to collect data; 4) discussion and analysis of the study findings; and 5) conclusion and recommendations.

1.7 Research Questions

1.7.1 Main Research Question

The research aims to answer one main question: <u>What makes Cairo Streets more pedestrian friendly and/or walkable?</u>

Nevertheless, in order to find answers to this question, more specific and detailed questions have to be answered:

1.7.2 Specific Research Questions

1. How walkable are Cairo Main Streets? How do local pedestrians perceive the walking environment of Cairo Main Streets?

2. What are the factors that influence pedestrians' walking experience in Cairo's Streets?

3. How to mitigate factors that negatively impact pedestrians' experience in Cairo streets?

4. What are the pedestrians' suggestions to manage different street uses and to improve street conditions for better walking experience?

5. What are the policies, strategies, and other levels of interventions that can help improve the pedestrians' walking environment in Cairo?

CHAPTER TWO

Conceptual Framework and Research Methodology

2.1 Conceptual Framework Design and Elements

The conceptual framework is designed in a way that serves the purpose of the research, in which it is guided by the main research question. It acts as a frame that includes the main elements to be examined in the field, using the suitable data collection tools.
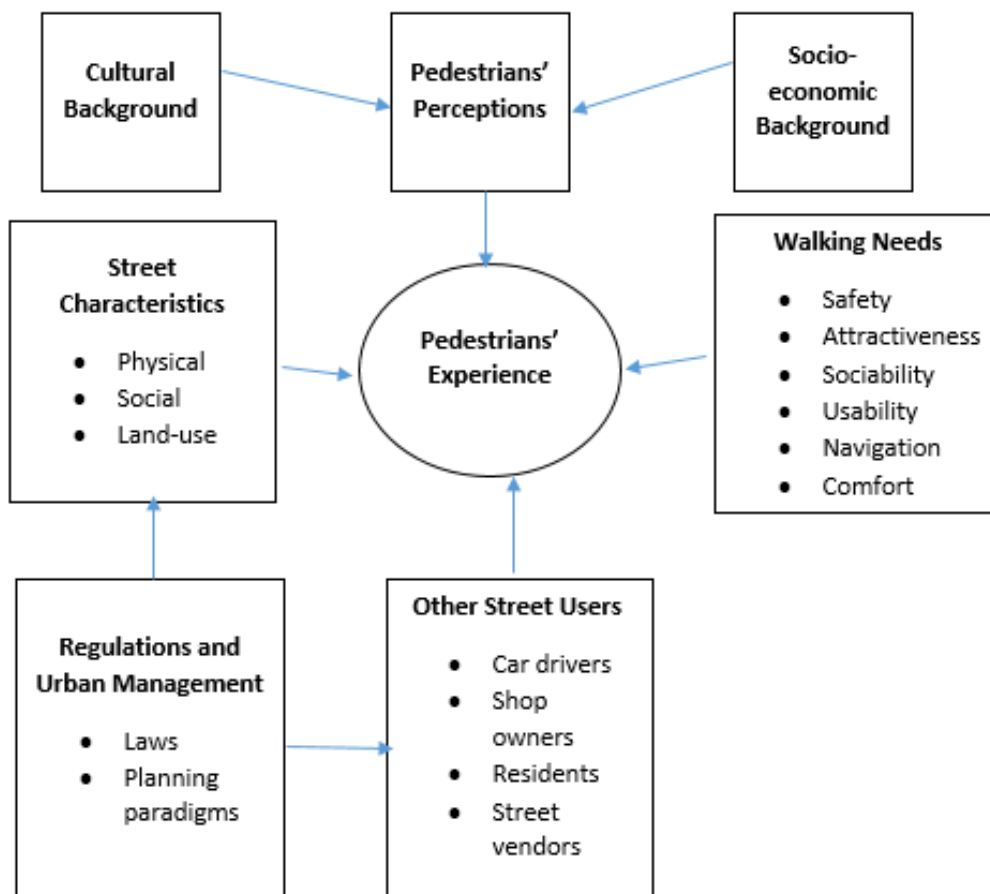
Figure 1. Conceptual Framework (Developed by the researcher)

The conceptual framework is based on a number of concepts. First, it assumes that streets should accommodate different groups of users including pedestrians. According to Pedestrians' Quality Needs Report, a pedestrian is defined as "a human being assuming a specific role in traffic and in public space by walking and sojourning, in principle without using transportation means" (Methorst, 2010, p. 37).

One of the main guiding theories in the field of urban design regarding public spaces is Jane Jacobs's Urban Design Theory that was introduced in her book *The Death and Life of Great American Cities* (1961). As per Sung et al. (2015), Jacobs criticized the prevailing planning paradigm of cities at the time of writing her book, where the focus was on the construction of highways and large-scale redevelopments instead of small-scale developments at the district and/or street levels. Jacobs supposed that this planning paradigm contributes to the loss of the vital urban life of spaces in general and of city streets in specific (ibid). In order to bring back, sustain, or encourage a vital urban life in cities, Jacobs asserted that "the physical environment should be characterized by diversity at both the district and street levels" (Sung et al., 2015, p. 1). Jacobs (1961) clarified that *Diversity* entails four key conditions that have to be integrated in order to achieve the urban diversity that creates vitality of the urban spaces: small blocks in terms of being short with more intersections to decrease the travel distance across blocks for pedestrians and to slow down vehicles speed respectively, mixed land uses in term of the presence of businesses and shops that attract visitors, adequate buildings' concentrations in order to attract people, and buildings representing different ages that can promote economic diversity in terms of being used in different businesses and jobs ranging from low-income to medium and high-income ones (ibid). Other scholars such as Gehl 1987; Hass-Klau et al. 1999; Jacobs 1961; Kim, Choi, and Kim 2013; Mehta 2007; Moudon 1991; Park et al. 2013; Southworth and Ben-Joseph 1996 have agreed with Jacobs theory of assuming that vital urban life results from active street life of pedestrian-friendly city streets, where pedestrians high traffic and hence activities are the drivers of the sociability and functionality of city streets (as cited in Sung et al., 2015).

In order to be used by pedestrians, who can be so-called people on foot, the conceptual framework proposes that streets should possess certain features and characteristics to facilitate people's walking experience. After studying thoroughly the relevant literature, this part of the

conceptual framework is mainly guided by Mehta (2008) and MARC (1998), where street characteristics are suggested to be divided into three categories: physical, social, and land-use characteristics. The research investigates those features in terms of observing current features as well as asking participants about their perceptions and needs of the most appealing street characteristics to be pedestrian-friendly. For instance, physical and environmental characteristics of the selected street is studied, such as street sidewalks, lightings, furniture, crossing signs, greenery, beside other features that will mainly tackle the social aspects of streets, such as perceived safety, gathering places, and street activities. In addition, street characteristics in terms of land-use are investigated, which include variety of goods, services, and businesses. These street features are supposed to influence pedestrians' walking experience. However, the conceptual framework suggests that people's perceptions towards an issue may be shaped by their cultural and socio-economic backgrounds as well.

Furthermore, the dominance of one group of street users over other groups can contribute to making our streets less pedestrian-friendly. As mentioned earlier, streets are public spaces that have more than one group who claim their ownership. Each group has a different interest in using the street. On one hand, pedestrians' ease of access, mobility, and their right to use streets are the focus of this study. On the other hand, street control is claimed by other groups such as street vendors and car drivers, which creates a conflict among multiple stakeholders over the right in using streets; this conflict can be one of the outcomes of the car-oriented street environment, where pedestrians' needs are not well prioritized.

In this regard, the research tries to pursue pedestrians' needs and perceptions of this issue. Pedestrians' walking needs are presented in the conceptual framework based on the guidance of existing models and theories, mainly Maslow's (1954) hierarchy of needs and Alfonzo's (2005) hierarchy of walking needs. These two models are referred to in similar studies such as Mehta (2008) and Methorst (2010). Both models assume that people's needs

are set in a hierarchical order according to the importance of the need, where the basic needs are located at the bottom of the hierarchy. Maslow's theory of human motivation is concerned with human needs in general, which are physiological, safety, belonging, self-esteem, and self-actualization needs; while Alfonzo's model focuses on pedestrians' walking needs in specific, namely feasibility, accessibility, safety, comfort, and pleasurability. Pedestrians' experience is affected not only by their needs and street characteristics, but also by their perceptions towards all of these, which is in turn shaped by their social and cultural background. It has been assumed by Hofstede (2001) and Early (1989) that different people in different situations with diverse cultural backgrounds may have dissimilar priorities regarding their needs (as cited in Methorst, 2010).
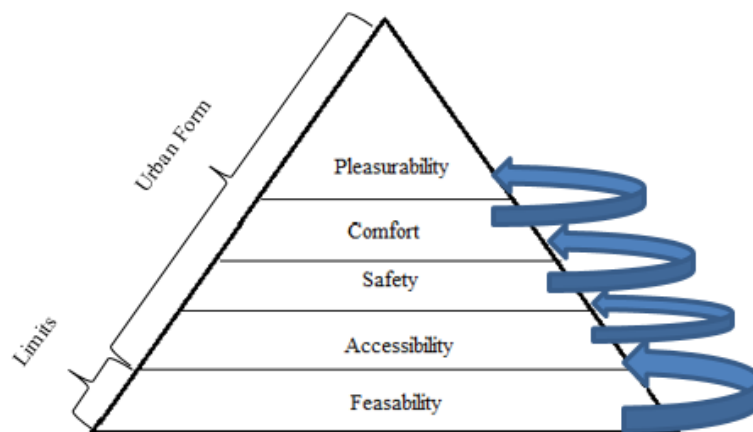
Figure 2. Alfonzo (2005) Hierarchy of Walking Needs

(Reproduced by the researcher)
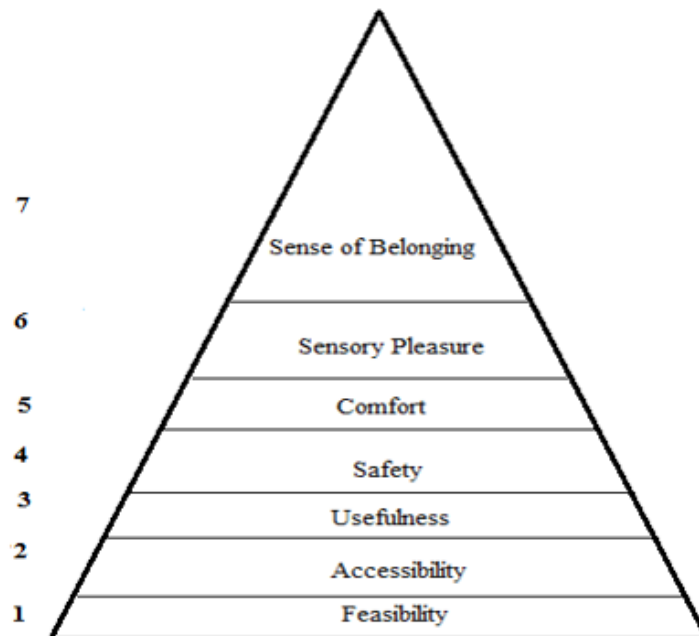
Figure 3. Alfonzo (2005) Hierarchy of Walking Needs After adaptations by Mehta

(2008) who added No. 3 & 7 (Reproduced by the researcher)
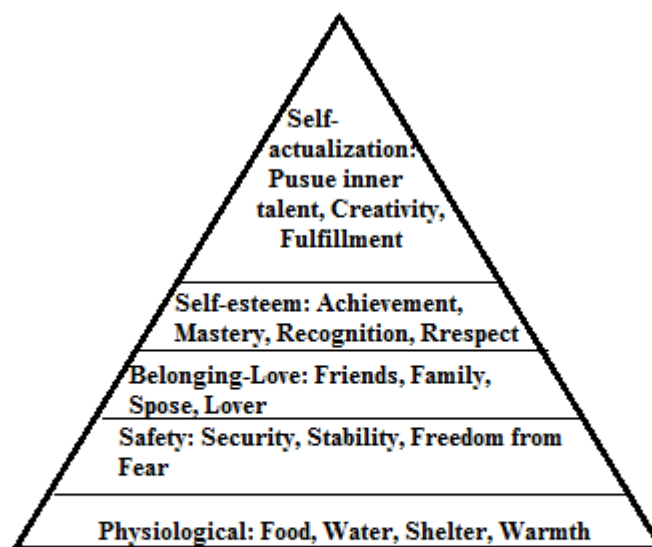
Figure 4. Maslow's (1943) Hierarchy of Needs; Theory of Human Motivation

(Reproduced by the researcher)

Yet, people's perception of an issue and their rights is not enough; these rights need to

be protected by laws, regulation and institutions that guard the public interest. Thus, the role of

urban management is essential in managing the public space in a way that balances the different

uses and interests. It is supposed that if urban management and regulations do not take into account the perceptions and needs of pedestrians, hence their efforts and regulations will not be directed towards making pedestrians' experience improved.

Finally, suggestions and recommendations will be made in light of the data collected and analyzed in an attempt to direct the attention of city planners, officials, and policy makers towards the importance of organizing and setting limits for each group of street scape users, and towards giving priority to pedestrians' needs and not limiting the street use and development to motor vehicles uses.

2.2 Research Methodology

2.2.1 Research design

In order to find answers to the research questions, qualitative methodologies are used for both data collection and analysis. The selection of the qualitative approach is intended in an attempt to seek deep insights into the issue. In addition, it serves the purpose of this micro-scale study in the sense that qualitative techniques help in learning about why people behave in a certain way, where understanding the meanings of people's behavior is emphasized and sought after in qualitative approach.

Before visiting the field, the researcher has designed a conceptual framework that is guided by the main research questions. Through the field visits, a refining process of the conceptual framework was a continuous process, as it is one of the goals of the qualitative research tools "through a continual 'double-fitting' where researchers generate conceptual images of their settings, and then shape and reshape them according to their ongoing observations. Thus enhancing the validity of their developing conceptualization" (Ambert et al., 1995, p. 881).

Moreover, qualitative tools helped the researcher to describe the setting's micro-scale characteristics through participant observations; besides, it allowed the researcher to reach some explanations for pedestrians' behavior through interviewing some of them.

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Consequently, the research design and tools smoothly allowed for exploring people's perceptions towards pedestrian-friendly streets. However, the research nature does not target representing the population, as it is a qualitative not a quantitative study. Accordingly, research findings cannot be generalized on the basis that they are representative but rather on the basis that they are indicative.

2.2.2 Data collection Methods

The study depends on primary sources for collecting first hand data directly from the field of study. In order to fulfill the research requirements as explained earlier, a case study of one street in Cairo was conducted, Abou El-Atahia Street, which is an extension of Abbas El Akkad Main Street in Nasr City district, as one of Cairo's well-established suburbs.

As the research design is of a qualitative nature, the case study approach is a helpful one that focuses on a single event, location, and/or person to deeply investigate the interactions and dynamics among different factors and elements under study. Berg (2009) has emphasized that case study technique involves a systematic approach in gathering enough information about a particular element- person, event, social setting, or group- to allow the researcher to fully understand how the dynamics of an issue operate and interact. Regarding the quality of data collected, Champion (2006) asserted that the type of information collected in a case study is characterized by being comprehensive and extremely rich (as cited in Berg, 2009).

The case study included participant observations, photo documentation, and interviews techniques. The field observations aimed at collecting data about the existing street features, micro-scale characteristics, and uses on the selected location within the suggested conceptual framework. The observations took place at fixed times per day, at time slots between 6 p.m. to 9 p.m., for two weeks including week days and weekends.

Moreover, unstructured open-ended interviews, being part of the participant observation technique, were conducted with nineteen participants who accepted to be

interviewed at the selected site. Interviews duration were ranging from very short ones that took around 5 minutes and more longer ones that ranged from 10 to 15 minutes, bounded by the participant's interest and time.

The researcher sought a closer and deeper understanding of pedestrians' different perceptions of walkable streets' features, the obstacles they face on streets while walking, and recommendations for improvements from their point of views. Thus, interviewing pedestrians was a useful technique that served the purpose of the research by gaining in depth information from different groups of pedestrians in terms of their gender, age, socio-economic backgrounds, and physical health status, each reflecting different perceptions that give meanings to observed behavior towards the studied issue.

In addition to field observations and interviews with willing pedestrians, a thirty minutes in-depth interview was conducted with Eng. Omar Nagati, the founder of CLUSTER-Cairo Lab for Urban Studies, Training, and Environmental Research- who has established with his team of researchers a continuous urban dialogue by linking theorization with professional practice on ground. They have launched a number of pilot projects in Downtown area such as revitalising the passageways to serve as public spaces for people–oriented activities. Besides, CLUSTER has published books with a number of research to document their efforts, examples of their publications are *Cairo Downtown Passageways: Walking Tour* discovering the network of downtown Cairo's passageways, side streets, and back alleys as a suggetesd framework for considering this network of pathways offering housing, commercila, and entertainment activities aimed at the revitalization and development of Downtown. *Archiving the City in Flux* is another publication that examines how public spaces in Cairo have been informally used since January 2011 revolution. Finally, *Learning from Cairo* publication is a co-work by CLUSTER and the American University in Cairo, which was an international symposium that

pointed out the relevant best practices and international case studies in sectors such as transportation, housing, and public space that can prpose suggestions for improvement in Cairo.

The interview aimed at finding answers to questions regarding the concept of pedestrian-friendly streets in its global wider context, not limited to the area of the case study. In addition, the researcher sought an expert's insights to the issue of walkable streets from various perspectives. For instance, Eng. Nagati has elucidated how relations among different elements of the issue, such as policies, street uses and street design and plans, can be shaped and conceptualized; hence, recommendations for improvements can be suitably made.

2.2.3 Sampling

2.2.3.1 Setting

As the study is examining pedestrian-friendly streets; so, it was conducted in its naturalistic setting: The Street. The researcher decided to study the case of Abou El-Atahia Street, which is an extension of Abbas El Akkad Main Street in Nasr City district based on the notion that different types of pedestrians are visiting it due to the presence of a number of landmarks. For example, there is the international park, which is a destination for school trips from different governorates. Besides, there is the wonderland amusement park and mall that includes cinemas, restaurants, coffee shops, a well-known supermarket, and other types of shops. On the other side of the street, there are residential buildings that have clinics and shops on their ground floors, and the Egypt Air travelling office, as well. The researcher believed that this street is diversified in its uses and activities thus in the people visiting it.

2.2.3.2 Informants

The study targets the pedestrians as one group of street users. For the purpose of data collection, the researcher was purposive in selecting only pedestrians to interview. However, the sample was not previously known by the researcher; instead, during the participant observation, opportunity sampling technique was the key. As per the initial design of the research, which targets to examine perceptions of multiple pedestrians towards walkable street

environment, the researcher tried to interview pedestrians from diverse types, such as youth, girls, women with kids, old people, and so on.

2.3 Ethical Considerations

The identity of the researcher was revealed in the field, besides the purpose of the study; thus, pedestrians who welcomed the idea liberally consented to be interviewed. Hence, there was no obligation for any participant to take part in the study. The researcher guaranteed anonymity and confidentiality to informants. The researcher did not ask any participant to reveal his/her name, only age and occupation were asked in order to help in analyzing data in reference to the socio-economic and cultural backgrounds of the participant as per the study's conceptual frame work.

2.4 Data Collection, Interpretations, and Analysis Processes

The field observations were guided by the main components of the conceptual framework, such as observing the current status of street physical characteristics, including sidewalks, seats, lights, and signs. However, some other elements emerged during the field visits, which were not initially listed by the researcher, such as the street middle island as one of the street's physical elements. The researcher took notes and photo documented the field observations, either the ones that were observed passively, or the ones that were experienced by the researcher through walking as a participant observer, for example the metal protrusions on the pavement caused the researcher to tumble while walking.

As for the interviews, unstructured open-ended questions were posed to participants, such as: What encourages or discourages you to walk on this street? What are the features that you like or dislike in this street? What are your recommendations for turning this street to a more walkable one? Questions were asked in Arabic language; therefore, answers were translated into English language and transcribed swiftly on the field, along with the researcher's field notes beside each interview to help in the data analysis phase.

After feeling the themes of investigation started to be repeated in people's responses and that interviews are not adding new knowledge, field visits were stopped, and analysis started. In doing so, the researcher read the responses of the interviews more than once until the main themes started to emerge. Accordingly, the researcher assigned codes that were relevant to the responses, above which overarching categories were created. As the classification of codes under categories is exclusively the researcher's decision, some codes can be allocated under more than one category, such as harassment, which can be categorized as a safety issue, or it can be listed under social features of streets.

The process of coding and categorizing data mainly aimed at giving meanings and labels to people's wordings in light of the conceptual framework. The result was a synchronized relationship between the conceptual framework initially designed by the researcher before the field work and the resulting themes that emerged during the field work, where "the analysis of data feeds into research design and data collection" (Hammersley and Atkinson, 2007, p.205). This assured that the qualitative field study is an iterative process that was described by Glaser and Strauss (1967); Glaser (1978); Strauss and Corbin (1990) as "central to the 'grounded theorizing' […], in which theory is developed out of data analysis, and subsequent data collection is guided strategically by the emergent theory" (as cited in Hammersley and Atkinson, 2007, p. 205).

CHAPTER THREE

Literature Review

This section will display the literature that handled the issue of streets, as a main element of public space, in two themes: historical and recent literature reviews. The historical review illustrates the evolution of streets in terms of their planning, design, and use. While the recent literature review shows the current debate among different scholars and practitioners regarding street uses.

3.1 Historical Review of Literature

Along history, streets are the elements that used to determine the type and the role of a place from being a city or village (UN-Habitat, 2013). In the 19th century, the industrial revolution has led to rapid increase in both the population and expansion of urbanization, where people started to come from rural areas to find jobs in the city (Annez and Buckley, 2009). In 1920s, cars were starting to be the dominant way of mobility in Europe (Tawil, Reicher, Ramadan, and Jafari, 2014). Since then, streets function started to be limited for cars, neglecting the social, economic, and political functions of the public space (ibid). In late 1960s, when the cars dominated the use of the streets over other uses, the term *Woonerfs* started to appear in Netherlands (Bain, Gray, and Rodgers, 2012). *Woonerfs* means 'streets for living' which was a sign of people's need to win back their streets as an environment for various activities, and not only for cars (ibid). The market place in streets has been part of people's daily life where they meet and socialize (Gehl & Gemzoe, 2003; as cited in Tawil, Reicher, Ramadan, and Jafari, 2014). Beside the social function of streets, Collins & Shantz (2009) asserted that parks, streets, and squares used to play a role in people's economic and political lives (as cited in Tawil, Reicher, Ramadan, and Jafari, 2014). Exchange of goods used to be one form of economic activities in streets, where people interact and achieve financial benefits

at the same time. Furthermore, streets as public spaces used to encompass demonstrations for raising people's demands, especially vulnerable groups (ibid).

Nowadays, and after the negative impacts that cars have on our environment, there is a global concern towards transforming our streets to be more pedestrian-friendly, which will require, as a crucial part of the solution, mitigating the dependence on cars as ways of mobility through shifting to the walking and cycling means of mobility. In order to achieve this goal, the re-design and management of our streets will be needed to accommodate new modes of mobility. In addition, the rule of law can help in setting limits for the space allocated for pedestrians in order not to be overwhelmed by cars. In this regard, Tawil, Reicher, Ramadan, and Jafari (2014) mentioned that in Germany, in 1975, a conservation of architectural heritage law was enforced in cities which resulted in development of old towns' public spaces by creating traffic networks outside the city center and hence "more space was created" for the pedestrians.

3.2 Recent Literature Review

In present time, a debate among scholars and practitioners has arisen about the definition of public space- in general and streets in particular- in terms of its inclusiveness, overlapping with private realm, free or restrictive access, and so on (Gehl and Matan, 2009). People choose to interact with the public spaces for socialization and/or recreational reasons; therefore, the role of public space in general, and streets as one of its components, in the people's public life has taken more than one shape, which necessitates creating appropriate public spaces to accommodate different uses and interests (ibid). In this regard, the two books *Designs on the Public* (2007) by Kristine Miller and *Convivial Urban Spaces* (2008) by Henry Shaftoe have illustrated the differences among scholars' and practitioners' perspectives regarding the definition and scope of public spaces in general (ibid). In describing the two authors' approaches, Gehl and Matan (2009) stated that although the authors define public

spaces differently according to each one's perspective, they both agree on the necessity of having inclusive and democratic public spaces.

Talking about streets specifically, the *Living streets strategy for crafting public space* book by Gehl (2009) offers a wide range of ideas to different stakeholders (citizens, policy makers, government officials, ..etc) on how to make the best use of their streets by accomodating the streets for a more multi-use orientation; in addition, he assumes that having better and healthier communities is linked to having better streets.

Gehl (2009) assures that there is a common global vision for the future of streets that encourages creating enough space for pedestrians; thus, a collaborative effort is seeked from different spheres such as elected officials, designers, law makers, communities, relevant advocacy organizations, and any other concerned party, in order to advocate and work for having our streets more pedestrian-friendly. In this regard, Project for Public Spaces Inc. (2012) has issued, in collaboration with the UN-Habitat, a handbook named *Placemaking and The Future of Cities* that highlights 10 best practices for public space projects. In this handbook, the first best practice was named "Improve Streets as Public Spaces", which entails the concept of deciding first to design the streets as safe and comfortable places for people on foot, not people in cars. Thus, the global orientation in cities is heading towards prioritizing the improvements of streets with the pedestrian-friendly approach in mind.

3.3 Definitions and Terminologies

3.3.1 Walking, Walkability, Walkable/ Pedestrian-Friendly Environment, and Pedestrians

In this study, the terms walkable and pedestrian-friendly streets are used interchangeably. This decision has been concluded from the body of literature that has been reviewed and studied. In addition, this study is an exploratory one that aims at investigating the factors that influence pedestrians' walking experience in Cairo streets; thus, the walking

purpose is not one of the traceable data, so there is no distinction between walking to reach a specific destination or for pleasure.

In reference to walking, it is a human behavior that can be influenced by a number of factors that differ in nature, such as environmental dimensions, individual preferences, characteristics and circumstances, and cultural perspectives (Mehta, 2008). People's culture, preferences, characteristics and circumstances are subjective factors that relate to individuals' backgrounds and personal perceptions (ibid). While environmental factors are objective in nature that are relevant to the physical characteristics of the built environment that accommodates the walking activity (ibid).

In order to determine whether the area is pedestrian-friendly or not, the condition of the area's built environment is one of the key determinants that either encourages or discourages walkability (Mid-America Regional Council – MARC, 1998). Thus, walkability can be referred to as a measure of how an environment is pedestrian-friendly (Gebru, 2015).

In defining walkability, MARC (1998) linked it to the availability of quality walking conditions in the sense that the built environment encourages walking by accommodating comfortable, safe, convenient, and attractive path to pedestrians. Southworth (2005) has agreed with the latter definition of walkability in terms of safety and comfort aspects of the built environment, but has provided more explanation to convenience and appealing factors by stating that:

> Walkability is the extent to which the built environment supports and encourages walking by providing for pedestrian comfort and safety, connecting people with varied destinations within a reasonable amount of time and effort, and offering visual interest in journeys throughout the network. (p. 247-248)

Another opinion was indicated by Eng. Nagati, who differentiated between the two concepts: pedestrian-friendly and walkability by stating that

"Walkability" is moving from one point to another on foot. This concept may be more useful in studies such as examining walkability of children to schools. This issue entails conceptual and geographical dimensions. While "pedestrian friendly" concept is beyond the "walkability", as it is wider. It is not limited to the walking as a physical practice, but it includes for example activities on streets, such as carnivals. This contributes to transforming the urban experience from motorists dominating uses to pedestrians' uses. This gives livability to cities; Jan Gehl has contributed much in this area of research (Interview with Nagati, 2016).

After reviewing relevant literature, it can be concluded that factors influencing walkability in terms of environmental aspects can be categorized under macro-scale environmental characteristics and micro-scale ones. This research is concerned with exploring the micro-scale environmental characteristics at the street level, along with other factors, that influence pedestrians' perceptions towards a walkable street; hence, impacting their overall walking experience.

Walkability can be assessed at a number of levels, for example at a neighborhood, site, community, or at a street level (Southworth, 2005). As this study investigates the walkability of a street, the assessment of the walkable environment will be against the criteria applicable to the street scale level.

On street level, the street built environment should possess some key elements in order to be considered pedestrian-friendly. In this concern, MARC (1998) has mentioned a set of guidelines that has been adapted from Washington DOT, Pedestrian Facilities Guidebook. Based on these guidelines, elements that constitute a pedestrian-friendly street can be grouped under major categories in terms of their focus. For instance, in relevance to urban design, streets are advised to be interconnected to allow for pedestrians' access and mobility; in addition, narrow streets give more opportunity to pedestrians and less chance to motor vehicles to speed. A second group of elements is concerned with traffic-calming features that help control vehicles speed. Another group encompasses the conditions of sidewalks in terms of being accessible, wide, with a fair height level, and well maintained. Other groups of elements refer to well-designed intersections, well-marked crosswalks, the provision of median islands on

wider streets, and the installation of signs for pedestrians and motorists, all to ensure safe crossings; besides, street lightings, furniture, and trees for shade and buffer, which are all listed as significant features asserted to enhance the pedestrians' walking experience.

Pedestrians are the group of street users whose walking needs are sought after in this research. Hence, it is essential to be aware of who exactly can be considered as a pedestrian in order to be able to investigate the factors that accommodate his/her walking requirements. According to New Zealand Transport Agency (2009), a pedestrian is "a person on foot, or in or on a contrivance equipped with wheels or revolving runners that is not a vehicle" (p. 17). According to this definition and throughout the guide, New Zealand Transport Agency (2009) has not limited the pedestrian to the physically able person on foot; but, it has divided the pedestrians into three groups of people as follows: People on foot, people with mobility impairment, and people on or pushing small wheels such as skateboarders or those who are pushing a stroller.

Given the variety of pedestrians and their classification into diverse subgroups, streets should be adaptable to consider a wide range of walking needs as each subgroup may differently prioritize factors that are relevant to the users' specific needs, which in return affect their overall walking experience.

3.4 Approaches/Concepts Defining the Key Attributes of a Walkable/Pedestrian-Friendly Environment that Encourage Walkability and Improve Pedestrians' Experience

As this research is concerned with pedestrian-friendly streets and not pedestrian-only streets, the approaches reviewed in the literature are those that focus on improving the street environment for the pedestrian use in the presence of motorized vehicles. New Zealand Transport Agency (2009) suggests four concepts, three of which are relevant to the focus of this study in terms of sharing the street with multiple users. These concepts are living streets,

shared zones, and sharing the main street, which are introduced in more detail in the following section.

3.4.1 Living streets

The concept of living streets can be applied in designing new streets and in adapting existing ones. This concept considers the importance of all street users, including pedestrians, car drivers, cyclists, residents, and owners of shops and businesses. In this regard, "a living street approach aims to balance the needs of residents, businesses, pedestrians and cyclists with cars, and thereby encourage a better quality of life and a greater range of community and street activity" (New Zealand Transport Agency, 2009, p. 37). In order to achieve its goal, living streets approach suggests the provision of elements that can incorporate to guarantee success of the concept in application. These elements include traffic-calming measures, lighting enhancements, seating, hard and soft landscaping areas, places for social activities, and children's play areas. In order to encourage decision makers to take into account living streets concept, it is assumed to have the following advantages: improves security and safety for pedestrians, enriches economic vitality, improves social interaction, generates a sense of place and identity, encourages cultural activities, allows for ease of access, and creates a sustainable and a pleasant environment.

3.4.2 Shared zones

A shared zone is defined by New Zealand Transport Agency (2009) as "a residential or retail street that has been designed to give priority to residents and pedestrians while significantly reducing the dominance of motorized vehicles" (p. 39). These types of streets are known with different names such as home zones in the United Kingdom while in Netherlands they are denoted to as *Woonerfs*. In practice, shared zones are assumed to promote the sense of care among different street users as both the design and its implementation consider some physical measures that limit the presence and the speed of motorized vehicles, such as narrow

turning radii and landscaping. It is supposed that these constraints help minimize the number of vehicles passing through the street while the vehicles drivers who have to drive through this street take into consideration the presence of pedestrians and other street users. Hence, the benefits of having shared zones are suggested to be improving safety by expecting less number of cars and thus less crashes and injuries, improving the environmental conditions of the street in terms of landscaping features, and improving social interactions.

3.4.3 Sharing the main street

New Zealand Transport Agency (2009) defines sharing the main street as "adapting it − or a center along a minor arterial road − to improve the safety and the quality of the road environment for all its users" (p. 40). This approach is applicable to the main streets of rural towns and minor arterial roads in cities that have commercial activities and thus conflicting needs of pedestrians and traffic, which have to be managed in a way that balances the diverse street uses. The diverse needs of street users can include car drivers need to move and park, pedestrians need to be able to cross safely, businesses need to attract clients, and trucks need space to load and unload goods. Sharing the main street is asserted to offer a variety of benefits to all street users, such as reducing the conflict among pedestrians and motorists that helps improving the quality of the street environment; consequently, the street environment attracts businesses and customers, which enhances the economic vitality of streets.

3.4.4 The 5Cs layout

According to the Pedestrians' Quality Needs Report, the 5Cs approach is a comprehensive classification of the street characteristics that prioritize and consider the pedestrians' needs aiming at improving walkability and creating a pedestrian-friendly environment (Methorst, 2010). The term 5Cs stands for the initials of the features that the street environment should be providing for people on foot. Referring to Transport for London (2005), this approach calls for a street environment to be:

Connected by having walking routes connected on both the street level and the district level.

Convivial by making the walking routes safe, pleasant, and inviting for users through allowing for social interaction.

Conspicuous by providing streets with clear signposts and wayfinding system.

Comfortable through providing features for rest and shelter, high quality pavement surfaces, attractive landscape, and safety from imminence to motor traffic and from harassment.

Convenient through making the street scape appropriate for all users, including pedestrians with mobility impairment.

Another set of street level characteristics that are assumed to improve walkability are stated by MARC (1998) as follows:

Coherence: Sidewalks have to be well structured, beside a street and land-use system that has to be consistent with the scale and function of the surrounding urban context. The sidewalk and street system should link points of interest by providing informative signage.

Continuity: A pedestrian system that brings together the design and usage of the street environment.

Equilibrium: A balanced transportation system that encourages and accommodates pedestrian involvement.

Safety: Protecting pedestrians from automobiles and bicycles that can be effected through physical separation from cars. In addition, protecting pedestrians when crossing intersections can be realized by installing traffic signalization and allowing for adequate time.

Comfort: Unhindered passageway on the sidewalk/pavement and at corners with secure crosswalks.

Sociability: Sidewalks/pavements should accommodate a variety of uses and activities in order to encourage individual and community interactions.

Attractiveness: Surroundings should be clean and well-maintained, with nearby storefronts and activities that provide sidewalk interest.

Accessibility: Different types of individuals can access the pedestrian environment regardless of age, ability or personal conditions.

Efficiency: The walking route should be simple and cost-effective in design and function in order to allow for a minimum delay along the pedestrians' walkway.

3.4.5 Complete streets

According to Laplante & McCann (2008), Complete Streets is an urban planning paradigm that considers streets as a main element of the public space have to encompass multiple uses. The authors assume that this urban planning paradigm encourages street planners and designers to take into their account the various user groups of the streets including walking, cycling, and public transit beside the car uses. As a result, each group of users will be in need of practicing different activities in the streets; thus, a balance in compromising the different uses should be considered since the street planning phase and continues to the management and maintenance practices.

Beside the street environment features, pedestrians' needs and perceptions of a walkable environment are assumed to be part of the factors that influence their walking experience. The following section will shed light on the literature that tackle these issues.

3.5 Pedestrians' Motives, Needs, Perceptions, and Backgrounds

Peoples' perceptions, motives, and needs are interrelated feelings, which require more elucidation. Maslow (1943) asserted in his *Theory of Human Motivation* that in order for a person to get motivated towards a certain action, a diversity of needs are expected to be fulfilled

first before deciding on that action. He assumed that there are five set of goals that each person is motivated towards achieving them, but in a hierarchical order in which the lower-level needs are more crucial and basic than the higher-level ones. This means that any individual will not be motivated to satisfy a higher-level need in the hierarchy before fulfilling a lower-level one. These needs are ranked in a bottom-top approach as follows: physiological, safety, love, esteem, and self-actualization.

Building on Maslow's (1943, 1954) theory of human motivation and hierarchy of needs model, Alfonzo (2005) developed a *Hierarchy of Walking Needs* model that elucidates the needs of a specific group of people, who are pedestrians, when deciding to consider a certain behavior and hence an activity, which is walking. The hierarchy of walking needs model suggests that before a person decides whether to walk or not, he/she has to consider five levels of needs. These needs follow the hierarchical structure of progressing from the most basic need at the bottom of the hierarchy to the higher-level ones at the top. The walking needs start by feasibility, which is classified as a non-urban feature that relates to personal limits and not to the setting's built environment characteristics. The following needs are labelled as urban features namely accessibility, safety, comfort, and pleasurabilty respectively. Following Maslow's down-up hierarchical pattern, Alfonzo (2005) suggested that the decision to walk will be guided by satisfying first a basic lower-level need; for instance, "if the need for safety is not met, a person would not consider his or her need for comfort or pleasurabilty when deciding whether to walk because the more basic need, safety, is unmet" (p.818).

People's motivation towards certain actions is not only guided by their needs, but is also guided by their perceptions and backgrounds. As per Mehta's (2008) study in which pedestrians' behavior, perceptions and attitudes towards walkable streets were investigated, the findings revealed that "even on the same Main Street people had different perceptions of the environment at different blocks" (p. 240). Regarding pedestrians diversity in terms of their

backgrounds and personal situations, Hofstede (2001) and Early (1989) noted that people in different circumstances and with dissimilar cultural backgrounds possibly will not have the same priorities regarding needs (as cited in Methorst, 2010). Thus, once needs are realized and hence expressed, their prioritization becomes a subjective matter that is influenced by the person's cultural backgrounds and circumstances.

On the other hand, it has been claimed that if a certain need is not well perceived by the person's conscious, he/she may not express that need explicitly in terms of a requirement or a necessity to consider the walking decision (Methorst, 2010). Not only the unconsciousness of the person's need that may hinder the expression of an explicit prerequisite, but also the low cost of walking, less attention to its importance, and its relative feasibility, make pedestrians' problems not clearly realized and hence can be deniable (ibid).

In this study, pedestrians are the target user group whom their needs are investigated. On the other hand, the street environment is the target place of investigation, which possess certain features. Methorst (2010) asserted that pedestrians' needs are translated in practice through providing the street environment with the features that fulfill their needs. For instance, if pedestrians say they want traffic lights or a zebra cross lines; it can be understood that these street characteristics can satisfy their implied need to cross the street safely (ibid). Thus,

> needs and wants are a feature of the pedestrian, whilst a requirement is to tell something about the object or service that is needed: which is a documented characteristic of what a particular product or service should be or do (Methorst, 2010, p.47).

In an attempt to consider people's perception of their surrounding environment, relevant literature especially environmental perception research has been reviewed to get more insights on this issue. In this concern, Ewing and Handy (2009) have defined five categories through which pedestrians perceive their walking environment: *imageability, transparency, complexity, enclosure, and human scale*. They described them as follows: *Imageability* refers to features that help yield an image of a particular place. *Transparency* "refers to the degree to

which people can see or perceive what lies beyond the edge of a street and, more specifically, the degree to which people can see or perceive human activity beyond the edge of a street", where outdoor merchandising and outdoor dining are examples of human activity in the street (Ewing and Handy, 2009, p. 78). *Enclosure* denotes the space offered by the physical environment; it includes streets, buildings, greenery such as trees, and sidewalks. As for *complexity*, it is defined as "another quality that adds to the perception of the physical environment" (Li, 2015, p. 28). This quality relates to the diversity found within the environment and the individual's ability to perceive the variation. For example, the presence of signage, street furniture, and the interaction among people help to create complexity. Finally, the authors gave an example to clarify *Human scale* aspect by stating that huge signs with large letters are designed to be read by high-speed vehicles' drivers, while signs with smaller writing are more comfortable and appropriate for pedestrians. Thus, in more detail, it is defined as:

> Size, texture, and articulation of physical elements that match the size and proportions of humans and, equally important, correspond to the speed at which humans walk. Building details, pavement texture, street trees, and street furniture are all physical elements contributing to human scale (Ewing and Handy, 2009, p. 77).

With reference to the models and theories that depict the prioritization of people's needs, there is an argument among scholars about them. Although Maslow's (1943) *Hierarchy of Needs* is one of the most influential models in this concern, there is no consensus among researchers in reference to organizing human needs in a hierarchy. Some researchers asserted that practically people do not necessarily go through the levels of needs one by one; accordingly, it becomes optional to tightly stick to the principle of a hierarchy.

Examples of those researchers are Lapintie (2008), who regarded needs as clusters rather than organizing in a hierarchical order, he assumed that human needs can be understood through a multi-disciplinary perspective, such as psychology, sociology, and design and planning sciences, besides cultural and ethical considerations (as cited in Methorst, 2010). The

clusters of pedestrians' needs are stated as existence needs, aesthetic needs, social needs, psychological needs, and needs that are relevant to open and public spaces uses (ibid). However, others explained that, regardless being ordered in a hierarchy, Maslow's model highlights the idea that people primarily focus and pay more attention to needs that are not yet fully achieved (ibid).

Another researcher who introduced other groupings of human needs in a non-hierarchical pattern is Alderfer (1969) (as cited in Yanget al., 2011). He expanded and developed human basic needs into *existence needs, relatedness needs, and growth needs* and proposed the *ERG theory* (ibid). According to the ERG theory, Alderfer (1969) assumes that, in contrary to Maslow's theory, it is not essential that the realization of a higher-order need depends on satisfying first the lower-order need (ibid). Thus, he claims that a person can be motivated to satisfy more than one need simultaneously without supposing that they should be organized in a ranked order (ibid).

Although Alfonzo (2005) stated that the model of walking needs follows the hierarchical structure, the author acknowledged that a person may not fully satisfy a lower-level need, but rather be partially satisfied before trying to fulfill the higher-order walking need. For example, although accessibility is a lower-level need in the hierarchy of walking needs that is ranked before safety, "a person may only be partially satisfied with his or her need for accessibility, yet still consider his or her need for safety when determining whether to walk" (Alfonzo, 2005, p.818).

Moreover, Alfonzo (2005) emphasized that the person can be motivated to walk when he/she expects to satisfy more than one need simultaneously. For instance, "A person may be motivated to walk both because the walk is comfortable and because it is pleasurable" (Alfonzo, 2005, p. 818).

In relevance to the displayed arguments, this study is guided by Maslow's (1943) hierarchy of needs as per his theory of human motivation and Alfonzo's (2005) hierarchy of walking needs. Both models act as a base for the research which assist in guiding the investigation of the needs of pedestrians and the relevant street features. However, this research aims at exploring the issue regardless of the hierarchical pattern. Accordingly, the data collection process and hence the analysis of the findings will not be subject to the idea of which factors to be fulfilled first, but rather focus on the factors that impact walkability simultaneously.

CHAPTER FOUR

Empirical Findings of the Case Study

4.1 Introduction

The case study area is Abou El Ataheya Street, which is an extension of Abbas El Akkad Street Main Street. This street is known with its mixed use nature, where it includes residential, commercial, businesses, and services uses. Thus, different types of pedestrians are visiting it for diversified purposes. For example, there is the international park, which is a destination for school trips from different governorates. Besides, there is the wonderland amusement park and mall that includes cinemas, restaurants, coffee shops, a well-known supermarket, and other types of shops. On the other side of the street, there are residential buildings that have clinics and shops on their ground floors, and the Egypt Air travelling office, as well. The researcher believed that this street is diversified in its uses and activities thus in the people visiting it.

(Source: https://www.google.com.eg/maps/@30.0506147,31.3421809,1613m/data=!3m1!1e3!5m1!1e4?hl=en)

(Source:https://www.google.com.eg/maps/@30.0506147,31.3421809,1613m/data=!3m1!1e3!5m1!1e4?hl=en)

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Nineteen interviews were conducted; besides, field observations were made in several field visits providing answers to the detailed research questions directly or indirectly.

The data collected from observations and interviews are summarized in Tables (1), (2), and (3) respectively. In addition, photos are attached.

The street characteristics and pedestrians' and other street users' behavior were the most observed elements by the researcher while pedestrians walking needs and perceptions were extracted from their responses through interviews. Thus, both participant observation and interviews techniques reinforced each other towards answering the research questions.

In light of the relevant literature, street characteristics represent an essential part in such type of research, which can be examined in terms of physical, social, and land-use features; thus, it was included in the study's conceptual framework. Accordingly, the current status of the case study street environment was observed in accordance to the mentioned classification and hence findings are presented as follows.

4.2 Field Observations of Street Characteristics and Users' Behavior

4.2.1 Physical Characteristics

4.2.1.1 Pavement/sidewalk

The researcher found that the pavement on the side of Egypt Air office in Abou El-Ataheya Street-the study area- is broken at the corners, where bricks are out of place and sand appears. Besides, metal protrusions were more than one on the same pavement. As for the street middle island pavement, it was in a very bad condition. Tiles were broken and wrecked totally and they obstruct pedestrians; beside, the pavement is too narrow that pedestrians can easily fall. On the other side of the street, at the side of the international park and wonderland mall, the pavement was higher than that on the other sides, especially in front of the mall, which may cause difficulty for people to step up and down it. Nevertheless, some parts of the pavement along the international park side were lower than normal. So, no steady design of pavements was recognized.

4.2.1.2 Street furniture

On the side of Egypt Air office, there were only the bus stop seat that was recently installed. No seats were seen elsewhere within the area limits of the study site. Besides, during one of the interviews, two participants stated that they were using the seats of the bus stop to have some rest, and they were not waiting for the bus. Other participants were observed sitting on the grass in the street's median island eating their lunch, as there were no benches to rest on.

4.2.1.3 Lightings

As for the lightings, one of the sidewalks was lit up by lamps that are installed by Egypt Air office on the fence surrounding it; no other lights are installed by the municipality. While on the pavements of the street middle island, municipality lighting lamps were installed overlooking both sides of the streets; however, the researcher found that at evening approximately half of them were not working. On the other hand, the advertising signs that were posted on these lamps were lighting up.

4.2.1.4 Signage for wayfinding

There was no signage showing the directions to streets or even to landmarks around the site selected. During the participant observation, more than one pedestrian was asking about the directions to nearby streets and shopping malls. Only advertising signs were noted everywhere.

4.2.1.5 Crossing lines/signs/speed bumps

No zebra crossing lines or signs were observed. Besides, there were no speed bumps to slow down cars despite the high pedestrian traffic on that street especially school trips with different ages of students visiting the international and the amusement parks.

4.2.1.6 Trees and green areas

The street has a landscape that can be categorized as an aesthetic factor, particularly due to the presence of the huge international park. However, the trees are not perceived to provide the shade needed for pedestrians.

4.2.2 Social Characteristics

Cleanliness and safety are important elements for people on streets, especially pedestrians. Thus, street users' behavior towards those elements was observed. It was noted that restaurants and food outlets keepers throw their waste beside the garbage containers and in the green middle island, despite the presence of huge waste boxes allocated close to the pavement. As a result, street dogs get gathered around the food leftovers and cause fear to people on foot either trying to cross the street or just walking. The presence of troops of dogs on street is one of pedestrians' concerns on this street as part of their safety. For example, pedestrians tried to avoid the garbage around the corners and on the pavements, but this decision exposes them to risk of going down the pavement near the cars speeding on the street, which is noted to be unsafe act. During participant observation, two young girls wanted to cross the street from one corner side to another. They stopped the researcher and asked for help in crossing because they were afraid of the dogs surrounding the garbage. While crossing with them, the researcher seized the opportunity and asked them about what they dislike in streets. They answered quickly and without delay, "The bad smell of the garbage and the dogs".

In addition to the dispersed waste by the food outlets, pedestrians' were observed throwing waste while walking. Moreover, restaurants' motorcycles for delivery, private cars, and buses of school trips parked along the pavement side, leaving no space for pedestrians to walk safely neither on the pavement nor down the street, as they will be much closer to the traffic. Details of these concerns are discussed later as part of interview responses reflecting people's walking needs.

Regarding the places available for people gathering on street, there was no such feature except if people purchase a ticket and enter into the amusement or the international park; besides, there were no seats or benches on the street where people can sit to rest or socialize. Instead, it was observed that people use the bus stop seats to rest and talk and the middle island to sit and eat together. Thus, it was observed that people needed to use the street in social

activities such as gathering, eating, or just to rest from a walk, but there were no facilities satisfying their social needs; however, people managed to use the bus stop seats and the middle island to practice their needed activities.

4.2.3 Land-Use Characteristics

Abou El-Ataheya Street is a mixed use street, where it has a variety of land use. There is the International Park, that attracts people especially school trips. And, Wonderland Mall and Amusement Park that includes cinemas, shops, supermarket, besides the amusement park.

There are business offices, medical care clinics and centers, pharmacies, bookshops, groceries, and other outlets. Hence, the street was noted to be offering a variety of services to its visitors, which observed to be an advantage as it attracts different groups of people to enjoy the diversity in goods, businesses, and services.

Table 1. Field observations by the researcher

Element Observed	Location	Street characteristics	Uses	Observation
Pavement condition	At the side of Egypt Air Office	Physical		-Part of the pavement is broken; bricks are out of place; people step in sand. *[Photo attached]* -Metal protrusions on pavement and I was about to fall more than once. *[Photo attached]*. -Encroachments: Kiosks, shops supplies, vehicles, garbage.
Lighting lamps	- At the side of Egypt Air Office. - At the street middle island	Physical		
Wayfinding and signage	On both sides	Physical		-No signs indicating the names and directions of streets & even the directions to landmarks such as the park and the shopping malls around.

				-No crossing signs for pedestrians. -Only signage of ads. Are everywhere. -More than one person stopped me and others to ask about the directions to Al- Serag shopping mall and other streets.
Crossing lines/signs/speed bumps	On street	Physical		No zebra crossing lines or signs. No bumps to slow down cars speed.
Street furniture	On both sides	Physical		No seats except the bus stop newly installed seats. People use them to rest on.
Trees and green areas	On both sides and in the middle of the street.	Physical		Abundant on both sides and in the median island besides the International Park view.
Variety of businesses	On both sides of the street.	Land-use		There are a number of shops, clinics, shopping mall, amusement park, supermarket, kiosks, and the international park
Gathering places	In the middle green island	Social		People were observed gathered in the middle green island sitting on the grass eating and kids playing.
Motor vehicle parking	On both sides and adjacent to the middle island pavement.		Vehicle drivers	Encroachments by cars and motorcycles that are parking partially or totally on the pavement. *[Photo attached].*
Street venders			Street venders	This feature is not observed on the case study street except for one with a cart selling slippers aside the shopping mall.
Shop keepers	Adjacent to the middle island and inside it.		Shop keepers	Food leftovers and waste from restaurants are thrown outside the garbage bins and scattered on the ground where dogs are gathered fetching in the waste annoying and frightening people on foot. *[Photo attached]*
Garbage and stray animals	At the street corner	Perceived safety as a social	Users' behavior	Two young girls [probably from a gatekeeper family]

| | | characteristic (stray dogs frightening people) | (throwing garbage on street) | asked me to help them crossing from one corner to another as one of them was carrying a baby. They said that they are afraid of the dogs. While helping them to cross, I asked them about what they dislike in the street; they rapidly answered: Dogs and the garbage bad smell. *[Photo attached]* |

(Developed by the researcher)

4.2.4 Street Users' Behavior

4.2.4.1 Vehicle drivers

It was observed that cars and motorcycles park partially, totally, or adjacent to the pavement, leaving limited space to people on foot to either walk on the pavement or on the street itself as they become much nearer to the traffic.

4.2.4.2 Street venders

This phenomena was not observed on the case study street except for one vender with a cart selling slippers aside the shopping mall. Accordingly, the absence of this factor on the case study street makes it difficult to analyze the influence of street vending on pedestrians' walking experience. Hence, street vending absence on the street is one of the study's limitations that needs further research in other areas.

4.2.4.3 Shopkeepers

Food leftovers and waste from restaurants are thrown outside the garbage bins and scattered on the ground where dogs are gathered fetching in the waste annoying and frightening people on foot.

Photos taken during the field study are shown below

Photo (1) & (2) People using the middle island to sit and eat.

(Photos taken by the researcher)

Photo (3) Garbage at the corner; sidewalk is wrecked; light lamps are installed by Egypt Air office only and no lamps by the municipality on this side

(Photos taken by the researcher)
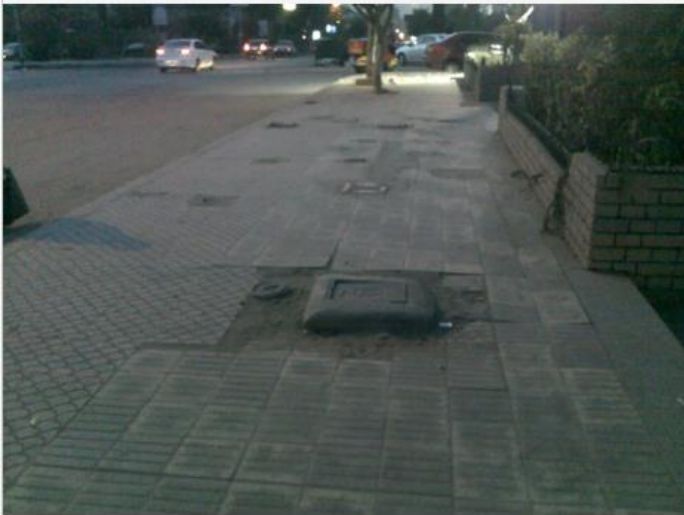
Photo (4) Metal protrusions on the pavement.　　Photo (5) Encroachments by a gov. entity; No lights

(Photos taken by the researcher)

Photo (6)　　Where would people walk?　　Photo (7)

(Photos taken by the researcher)

Photo (8) Metal protrusions on sidewalks

Photo (9) Wrecked pavement

(Photos taken by the researcher)

Photo (10) Damaged sidewalk; garbage bin in peoples' way

Photo (11) Wrecked pavement with non-standard height

Photo (12) Garbage and parking aside and on the sidewalk

(Photos taken by the researcher)

Photo (13) Lights are located on the fence of Egypt Air office

(Photos taken by the researcher)

Photo (14) Obstacles and motorcycles parking in people's way

(Photos taken by the researcher)

Photo (15) Obstacles and garbage outside bins

Photo (16) Garbage scattered on the street and stray dogs fetching in it

(Photos taken by the researcher)

Photos (17) Encroachments on pavement

(Photos taken by the researcher)

Photos (17) Different types of encroachments on the pavement

(Photos taken by the researcher)

Photo (18) The pavement discontinue and cars use the space for parking

(Photos taken by the researcher)

Photo (19) The motorcycle used by the restaurant for delivery parks on the sidewalk as if this space is an extension for the dinner.

(Photos taken by the researcher)

4.3 Interviews with Pedestrians

Participant observation included observing the street features and pedestrians' behavior. In addition, interviews with willing participants were conducted. Table (2) below shows the gender, age, and occupation of participants, as the researcher was concerned with these dimensions that may result in patterns of interest to use later in the analysis. The data collected mainly point out people's perceptions of walkable streets, which in turn clarify their walking needs.

Table 2: Summary of Study Participants

Gender	Age	Occupation	Comments
Man	36	Private driver	Sudanese
Man	23	Engineering student	He is not from the neighborhood; he is From Shoubra.
Man	18	kiosk boy	Uneducated
Woman	17	Student/ daughter of a gatekeeper	Teenager
2 Women & 1 Man	Could not ask	Could not ask	A family coming from a rural area who were sitting in the middle island to rest and eat
3 Men	14,15,18	Students	A group of teenagers who were sitting and having snacks in the middle island

2 Men	Could not ask	Could not ask	They were sitting on ground in the middle island eating
2 Women	Could not ask	Could not ask	They were sitting on ground in the middle island eating
3 Women	Could not ask	Could not ask	A group of young ladies walking by the side of the shopping mall
Woman	30 s	Architect	She was walking with her kids
Woman	Could not ask	Could not ask	She was walking with her kids
Total: **9 men &** **10 women**	**Age range:** **From 14 to above 30**	**Ranging from uneducated to educated**	**Different circumstances**

(Developed by the researcher)

After reading the interviews transcripts over and over, meanings and labels were assigned to words; subsequently, codes were generated. Thus, codes of similar nature were grouped under one category. However, some codes fit under more than one category.

4.3.1 Categorization of Pedestrians' Needs According to Street Interviews

The research design in terms of its questions, conceptual framework, and guiding models, such as Alfonzo (2005) Hierarchy of Walking Needs and Maslow (1943) Hierarchy of

Needs, were all the guiding keys to designing the interview questions, which yielded responses

with themes that were categorized as follows:

Table 3. Sample of pedestrians' interviews' transcripts [Coded and Categorized]

Category	Sub-Category/Code	Reference
Safety	• Crossing • Car speed • Bumps • Harassment • Kidnapping • Robbery • Light • Stray animals • Homeless people	• Crossing: "crossing is very unsafe especially that I have children" • Car speed: "who is riding a car feels safer than people on foot, as car drivers do not care about pedestrians". • Bumps: "There is no single bump on this street to slow the speed of cars although there are a lot of people on foot here visiting the international park and the mall" • Harassment: "I do not let my sister walk alone because of the dirtiness of people on street, they do not respect women". • Robbery: "I have been robbed while I was walking" • Stray animals: " I find a lot of dogs when I go to school early in the morning which makes me afraid to walk, but I have to go to school" • Homeless: " I have been chased twice by homeless people and beggars"
Comfort	• Seats • Pavement conditions • Car parking	• "We are sitting here –bus stop seat- to have some rest" • "The pavement does not have a standard level especially in front of shops; this interrupts my walk especially with my baby stroller" • "Where can I walk? Cars park partially or totally on pavements in more than one row and I find myself closer to cars on the street"
Usability	• Priority for vehicles • Encroachments • Middle island	• "I do not prefer walking except if I have to. I prefer using transportation" • "Each shop has extensions that makes the sidewalk full of obstacles for people" • "What is the use of this space? Why does not it has at least seats for people to rest?"

Navigation	• Signage and wayfinding	• Observation: people on foot stopped to ask me and the kiosk boy about the directions to a specific street and a well-known shopping mall around.
Attractiveness	• Cleanliness • Shops	• "Garbage is everywhere"; "I dislike garbage smell"; "garbage burning smell annoys me" • "Shopping is the only reason that can encourage me to walk"
Sociability	• Gathering	• "We are coming from a rural area and what we like here is the crowd of people and cars". *[photo attached]*
Awareness	• Streets are for cars • Only people with disabilities have to be cautious • Traffic signs	• " It is normal that cars do not stop for me; I have to be patient to cross the road because the street is for cars" • "We do see when the pavement is broken and we can take care, but it is a problem only for blind people" • " Car drivers do not respect traffic lights"
Socio-economic background	• Educational-economic-social standard	• Kiosk boy/ uneducated: "I want to make a living; I do not care about streets, as I will walk anyway" • Gatekeeper daughter/ goes to school: " There should be a law that punishes the harasser, not just imposing a monetary fine" • Engineering student: " I am an athletic and I love walking regardless the status of streets"

(Developed by the researcher)

Category1: Safety

According to COST - the European Cooperation in Science and Technology in its

Pedestrian Quality Needs Report:

> Safety is generally defined by the absence of risk or − less strict - the absence of accidents and potentially harmful incidents. One has to bear in mind however that absolute safety is not possible. The safety of pedestrians should always be seen within the context of mobility and accessibility. In the past safety was often achieved by excluding pedestrians and/or making places inaccessible for them. (Methorst, 2010, p.97).

When pedestrians were asked about their walking experience on the selected street in terms of what they like or dislike, many of them mentioned their safety concerns. They safety factor did not show up in the responses in one linear direction; but, they were stated in terms of more than one element that can be sorted out as safety. For example, most of the informants referred to safety in terms of the difficulty they face in *crossing the street*. One of the interviewed women, who was on the street with her kids, mentioned that "crossing is very unsafe especially that I have children". Another informant who was an eighteen years old boy expressed his concerns by saying, "When I cross the street, I am not sure whether I will reach alive or dead".

Not only was this element recorded during the interview, but also it was observed during participant observation, where two young girls wanted to cross the street from one corner side to another and they were asking for help.

Another meaning and perception that was labelled as safety by pedestrians is *harassment*. Men and women informants mentioned this element, where one Sudanese man who lives in Egypt said "I see that streets are not safe for my wife due to harassment. I do not let her walk alone, so I do all the shopping for my family to avoid letting her alone on streets".

Another young man explained harassment as "dirtiness of people", he literally said, "I do not let my sisters walk alone because of the dirtiness of people on street, they do not respect women". Also, women and especially young ones mentioned harassment as an annoying feature of streets, where one young girl said, "I face verbal harassments by micro bus or taxi drivers when I am on street usually in the afternoon." Another group of young ladies perceived unsafety on streets in terms of facing harassments.

Kidnapping was denoted as a factor that makes walking on the street an annoying experience. This notion was mentioned by one informant, when she was talking about the issues she faces on street while walking with her children.

As for the absence of *bumps* that oblige cars to slow down *speed*, some informants mentioned those elements as part of their fears on streets. One informant said, "Who is riding a car feels safer than people on foot; car drivers do not care about pedestrians", while a young girl cited, "There is no single bump on this street to slow down the speed of cars although there are a lot of people on foot here visiting the international park and the mall".

Some other informants denoted that the presence of *stray dogs* on streets gives them negative walking experience. For instance, two young girls asked the help of the researcher, during the participant observation period, to cross the street as they were afraid of both crossing and the dogs on the other side of the street corner. Another young girl expressed her fear of dogs on streets, but she is helpless about this trouble as she has to go to school walking; she stated, "I find a lot of dogs when I go to school early in the morning, which makes me afraid to walk, but I have to go to school".

One informant, who was a young girl, brought up the issue of *homeless people* on streets, who chased her twice on street while she was walking. She said, "Streets are disgusting. I dislike to walk because of a bad experience I had twice where I was chased by homeless people, I do not know if they were beggars or what".

Robbery was mentioned as well by some pedestrians. One informant stated, "Streets are unsafe for people on foot as I have been robbed on street while I was walking". Other informants mentioned that they heard stories about car drivers who speed up beside pedestrians and grab their handbags.

As for *lighting* on streets, it was thought to be of importance, but no informant mentioned this element as a factor that may influence their walking experience on the studied street.

Category 2: Comfort

According to COST - the European Cooperation in Science and Technology in its

Pedestrian Quality Needs Report:

> Comfort or Comfortable is one of the 5C's regarding to public space requirements for pedestrian. It relates to the extent to which walking is accommodated to competences and abilities of all types of pedestrians. In 'objective' functional terms comfort refers to observable usability, where pedestrians can use spaces or facilities without the apparent need to strain oneself. Comfort is primarily associated with positive feelings. (Methorst, 2010, p.87).

A number of pedestrians' words were embedding the meaning of *comfort* on streets, from which these meanings codes were created. For example, one of the interviews was conducted with two men who were sitting on the bus stop *seat*. During the interview, the researcher tried to know whether they were waiting for the bus or just using the seats to rest; thus, they said, "We are sitting here-bus stop seat- to have some rest". They did not state clearly during the interview that they notice the lack of seats for pedestrians to rest on, while in practice they do miss this feature as an element that influences their comfortability on street.

Another element that thought to be entrenching the meaning of comfort while walking down streets is the *pavement/sidewalk condition.* One informant explained in detail her negative experience with walking on the studied street. She mentioned that pavements do not have standard design in terms of height and width. In this regard, she said, "The pavement does not have a standard level; I have to go up and down every time I walk on the sidewalk as each part of the pavement has a different height". Besides, she referred to the encroachments on the sidewalks in front of shops, where shop owners extend obstacles on the pavement. Moreover, she defined these features as "visual pollution". She continued, "The pavement does not have a standard level especially in front of shops; this interrupts my walk especially with my baby stroller", which makes her see that the street is unaccommodating for her need.

Car parking that is not regulated properly on streets was one of the factors that were mentioned by informants. During one of the interviews, one respondent said, referring to street condition, "Where can I walk?" Accordingly, the researcher asked her what does she mean, as streets have sidewalks for pedestrians?! She replied, "There are no sidewalks for people. Cars park partially or totally on pavements in more than one row and I find myself closer to cars on the street".

Category 3: Usability

Continuing on coding meanings and categorizing them, the researcher made the decision to group *priority for vehicles, encroachments, and middle island use* under usability. In this respect, some participants perceived that streets are better accommodated for cars than people. One participant said, "Streets are for cars; pedestrians should take care not cars". Another mentioned, "I do not prefer walking except if I have to. I prefer using transportation", pointing out that streets are not for people on foot but rather for vehicles.

Encroachments that were once mentioned as an undesirable remark of pavements that was coded under *comfort,* are noted again in people's words as an obstacle in their use of the street for pedestrians.

Final element under usability is the use of the *street middle island*. This feature was not considered initially by the researcher until observed during the field visit. It was noticed more than once that groups of people sit on the grass of the middle island and buy food from a nearby cafeteria and use the island in gathering and dinning. This was a remarkable feature that the researcher listed under the following categories: *usability and sociability* of streets. The researcher captured the opportunity and asked the permission of some of these groups to participate in the study; and they approved. One of these groups was a family coming from a rural area. When they were asked about what they like about this street, they replied, "We are from a rural area and we love the crowd of city streets; we love to sit here on grass and watch

cars and people as it is considered an outing for us." Another group of teenagers were using the island in sitting and eating, as well. However, when they were asked the same above mentioned question, they pointed out, "What is the use of this space? Why does not it have at least seats for people to rest?"

Category 4: Navigation

Signage showing directions and names of streets were absent on the studied street, as per field observations. Besides, no informant has referred to the need for this feature. However, by observing pedestrians' behavior, some of them stopped to ask other people on street or the kiosk boy about the directions to a specific street and a well-known nearby shopping mall.

Category 5: Attractiveness/Pleasurability

As per COST - the European Cooperation in Science and Technology, "Attractiveness means the capability of giving rise to confluences in most pedestrian users through appeal based on intermediate spaces configuration (form, use and structure of spaces) (definition by PROMPT)" (as cited in Methorst, 2010, p.86).

Cleanliness of streets is one element that may attract pedestrians to walk on a specific street. Regarding this factor, most of participants mentioned the lack of cleanliness on the street and the existence of garbage "everywhere" as a negative point. Some quotations of pedestrians' responses are as follows: "Garbage is everywhere"; "I dislike garbage smell"; "garbage burning smell annoys me".

The presence of *shops* on a street can be an attracting feature for people on foot. One informant stated that "shopping is the only reason that can encourage me to walk", as she explained that she prefers going to shopping malls, but the presence of shops on the selected street is the only reason that makes her walk.

It was assumed by Eng. Nagati that as for street attractiveness, such as walking for shopping, it differs from one location to another. For instance, he elaborated that if the study examines Downtown streets, this factor may be mentioned as a main aspect in people's responses, as Downtown streets are full of cinemas and coffee shops that act as destinations for pedestrians. Consequently, it can be concluded that studying different areas and locations can result in different elements of importance and factors, where differences in design aspects may influence people's walking, experience, decisions, and preferences (interview with Nagati, 2016).

CHAPTER FIVE

Discussion and Analysis

Discussing *Walking* as an activity is a multi-disciplinary topic that attracts the attention of researchers and scholars in the fields of sociology, public health, and urban planners and designers. Thus, streets are supposed to accommodate walking by possessing specific features that fulfill basic walking needs. From this standpoint, this section aims at having an analytical insights into collected data in order to reach a synthesized overview, which discusses the empirical findings in light of the suggested conceptual framework and previous theoretical models.

Trying to study factors that influence people's walking experience in a given context is a complicated process due to the fact that the researcher exerts efforts in making connections between what has been observed and what participants have identified as requirements. In addition, examining external environmental factors may reflect inner needs that lie behind the mechanism that makes a pedestrian positive about those factors (Sombekke; Katteler, 2008).

In this study, findings suggest that *safety* and *cleanliness* in the street were the most frequent factors that influence pedestrians' perceptions of a walkable environment. This conclusion is denoted through pedestrians' expressions of those features as explicit or implicit needs; thus, they are suggested to be the main factors that affect their walking experience.

As for *safety,* it is apparently one of the most important factors that influence pedestrians' walking experience, although it was perceived by pedestrians from various perspectives. The main themes under which safety was explicitly or implicitly expressed by participants are: crossing the street, harassment, robbery, stray animals, homeless people, and kidnapping. This finding supports Maslow's model (1943), where safety is the second need after physiological needs. In addition, Henson (2000) has asserted that safety features can have

significant influence on pedestrians' perception of the overall quality of the street environment (as cited in Sombekke; Katteler, 2008).

However, Alfonzo's (2005) model, suggests that *usefulness* is prioritized than safety, where usefulness is defined by Mehta (2008) as the "ability for the environment to satisfy the individual's basic day-to-day needs for shopping, eating, entertainment, and so on" (p. 220). In this study, *cleanliness* was coded as a sub-category *attractiveness.* Thus, Attractiveness that is mentioned in the conceptual framework and has the components of usefulness as per Mehta's (2008) definition, was also mentioned frequently as an apparent requirement of pedestrians.

To sum up, findings of this study are in tandem with both models of Maslow (1943) and Alfonzo (2005), where Maslow (1943) suggested that safety is a priority after satisfying physiological needs, and Alfonzo (2005) suggested that usefulness, which is referred to in this study as attractiveness, along with safety are the paramount walking requirements for pedestrians. Nonetheless, this study used qualitative methods that is not directed towards creating a hierarchy of needs; therefore, findings of this research are not listed in a hierarchy. Accordingly, they cannot be generalized as they are not representative of the population, but rather they are indicators that may need further research.

In an attempt to draw conclusions from both data collection methods used: observation and interviews, some contradictions were found. As per observations, some physical characteristics of streets, such as sidewalks conditions, were obviously in a bad condition; nevertheless, interviewees did not mention them as discouraging aspects, even if they were standing on a broken pavement during the interview. Thus, it can be concluded that factors that influence pedestrians' perceptions of a positive or negative walking experience can be according to each one's priorities, which indicates that walking requirements can be referred to as subjective judgments.

In this regard, people's different perceptions towards their needs was explained by Appleyard (1976) in terms of three modes of perceptions: responsive, operational, and inferential (as cited in Mehta, 2008), which are explained as follows. In responsive mode, people perceive their environment in terms of what they sense, such as smell, color, or texture; while in operational mode what attracts people is the accommodation of the environment to their activities. Finally, in the inferential mode of perception, the environment is perceived as transporters of meanings and people consider features of the environment that are referred to as symbols for communication. It is suggested that once the basic walking needs have been fulfilled, namely feasibility and accessibility as per Alfonzo's (2005) model, the person's mode of perception will prioritize other higher-level needs (Mehta, 2008).

Similarly, the researcher observed lack of seats and signage for way finding besides observing people's behavior towards these two elements. Instead of describing it as a problem, interviewees dealt with the issue in different ways. As for the lack of seats, people were sitting on the bus stop seats or on the grass of the middle island; as well as, for the lack of wayfinding signage, they were asking the help of others to show them streets directions.

Hence, it is concluded that although some pedestrians' behavior indicates the importance of specific elements in the walking environment, these elements may not be perceived as needs. However, feeling the need for certain features may depend on the type of the environment examined. For instance, Heuman et al. (2005) have distinguished between the types of environment that may influence the importance of street benches as follows:

> Built-up environments in predominantly urban locations, and green/open environments that are away from high streets [where] benches that may be valued highly in green areas may have a negative value in urban areas where they prove to be clutter (as cited in Sombekke & Katteler, 2008, p. 22).

Users' perceptions, culture, and behavior towards the elements of the surrounding environment especially in Egypt were referred to by Eng. Nagati, who

pointed out that it is notable that most of the new generation do not know that the new

street signals are for pedestrians as well as cars. Accordingly, he indicated that people's

"attitude" and "culture" on streets is an issue. He elaborated by stating that

The attitude starts by trying to fulfill a "need". For example, if there is no pedestrians'
crossing signals, they will not cross. If crossing signs are installed, they may not use it,
as their "culture" has been already shaped and affected their "attitude", even if the status
has been changed to the better (interview with Nagati, 2016).

Referring to other street users as pointed to in the conceptual framework, *cars* invading

streets was the most notable factor affecting pedestrians' walking experience. Under this

theme, the most frequent issues mentioned by pedestrians were: car users who speed up and

those who do not respect the traffic signs, besides cars that park partially or totally on

sidewalks. Also, *shop owners*, who encroach on sidewalks by extending goods or other

obstacles in front of their shops, were another group of users taken into consideration by people

on foot. These issues were sub-categorized by the researcher under the *safety* and *comfort*

categories respectively; thus, they influence pedestrians from two perspectives: one as a safety

and comfort concerns, and the other as conflict among different street users.

Regarding *street vendors,* there was no mention of this group through interviews.

Besides, observations did not capture this feature at the study area during participant

observation period. It is assumed that this street feature may appear in one location and

disappear in another. Thus, its influence on pedestrians could not be examined in this study.

As for the other elements that may influence pedestrians' perceptions towards

pedestrian-friendly streets, the conceptual framework points out people's cultural, educational,

and socio-economic backgrounds. As per Ewing and Handy (2009), "perception is the process

of attaining awareness or understanding of sensory information. What one perceives is a result

of interplays between past experiences, one's culture and the interpretation of the perceived"

(p.67). In this regard, interviews have shown that people differ regarding these dimensions;

accordingly, a new category was created by the researcher named *awareness*. Findings under this category revealed that there were no consistent patterns relating people's different backgrounds to their perceptions of a walkable environment. Thus, reflections on pedestrians' awareness could not be drawn. For example, the gatekeeper daughter was so aware of what she exactly needs on the street; not only did she identify her walking needs in detail, but also she advised with some solutions in terms of laws and regulations while the kiosk boy who is supposed to be at a similar standard of living mentioned that he cares only about making his living and not about street conditions, as he will walk on streets under any circumstances. On the other hand, one pedestrian, who was an engineering student, was standing on a wrecked sidewalk and did not mention such a feature as an annoying one. Thus, different perceptions were recognized even among people with similar socio-economic backgrounds, such as the gatekeeper daughter and the kiosk boy; besides, engineering student replied to the interview questions in a way that does not reflect the expected level of awareness for an educated person.

On the other hand, Eng. Nagati has advised that people's perceptions in terms of the data collected are significant indicators from which the researcher should learn regardless of the repetition of the mentioned factor. Each one has priorities that may reflect subjective needs. He added that

> If one woman has told you I feel unsafe in streets because of harassments, and then you observed that no single man is on the street, still you should consider that she has a sense of unsafety on streets, because perception is perception and cannot be filtered (interview with Nagati, 2016).

After observing what and who were showing up on streets, some groups of pedestrians, such as elderly people and physically disabled ones were not observed walking on streets. Missing certain types of pedestrians may indicate that the street environment does not

accommodate suitable facilities for such vulnerable groups. For example, wrecked, high, and narrow sidewalks were some of the main observed features.

In this regard, Bernhoft & Carstensen (2008) pointed out to the importance of having an even surface on streets for older pedestrians to walk on (as cited in Sombekke; Katteler, 2008). They assumed that this condition is not influencing younger people with the same level, as it can be the reason of tumbling for older people, who have reduced vision and/ or moving difficulties (ibid). Additionally, Sombekke; Katteler (2008) claimed that the absence of these groups can be related to safety concerns in the sense that when people, especially elderly, women, and people with a disability, think it is unsafe to walk in terms of security, traffic, and social safety factors, they will most probably not walk.

Findings resulted from field observations and interviews with pedestrians reflected patterns ranging from connections to contradictions in reference to each other. On the other hand, the in-depth interview conducted with a professional assisted in connecting and analyzing the information gathered and established a deeper insight into the issue, which was reflected in the discussion and analysis processes. The below section will discuss and analyze those patterns to reach conclusions that may argue with relevant theories and models.

CHAPTER SIX

Conclusion and Recommendations

6.1 Summary of the Research and Conclusion

The aim of the presented research is to explore and examine the factors that help to create a walkable street environment in Cairo. The motive behind studying this topic is the importance of accommodating streets for people on foot in terms of social, economic, and environmental benefits for both the people and the city, as discussed earlier in the literature review. The research is concerned with micro-scale street level features by examining the current situation of one street in Cairo as a case study that could be indicative for similar streets. The case study entails collecting data by using qualitative techniques, namely participant observation, interviews with pedestrians, and one in-depth interview with an expert in the urban planning field. The used techniques are believed to integrate in a way that shapes the issue from multiple angles, which aims at suggesting comprehensive solutions to policy makers and city planners and officials, who can prioritize people's needs in order to make the streets of Cairo better places for pedestrians.

The research's empirical results have already a grounded evidence in previous research as per the theoretical frameworks discussed. Through building on the current models of walking needs such as Maslow's hierarchy of needs and Alfonzo's walking needs, this research indicates the local pedestrians' walking needs besides the case study street characteristics and uses, which all integrate to form a set of factors that may influence pedestrians' walking experience, especially in urban main streets.

The presented results suggests the importance of safety on streets as a key factor influencing pedestrians' waking experience and perceptions towards pedestrian-friendly street environment; however, safety is perceived by local pedestrians differently, who referred to it

either explicitly or implicitly in terms of crossing the street, harassment, robbery, stray animals, homeless people, and kidnapping. In addition, cleanliness that is indicated by the conceptual framework as a sub-category of attractiveness is suggested to influence local pedestrians' walking experience. Other factors such as the deteriorated conditions of sidewalks, the absence of street seats and signposts, and improper street lightings were also recognized through observing their conditions and people's behavior towards their absence. Besides, the study findings propose that cultural and socio-economic dimensions- stated in the conceptual framework- deserve further study.

Moreover, the practical value of this research would be its identification of the characteristics of the street environment in terms of physical, land-use, and social aspects and different street uses by car drivers, shop owners, and street vendors, on which practitioners, community organizations and government entities should concentrate their efforts in order to positively impact the dynamics that were found by this study to influence the pedestrians' uses of one of Cairo streets.

Likewise, the study findings have made additional contributions to understanding pedestrians' perceptions of pedestrian-friendly streets on a micro-scale level by interviewing people on streets to get their insights into the issue. Furthermore, limited research has been conducted on streets of Cairo. For instance, existing research examined other issues, such as street vendors or street children; besides, most of the studied areas were Downtown and its surroundings. Accordingly, this empirical research is assumed to fill the gap of both: limited research on the topic concerned with pedestrian-friendly or walkable streets and studying one of Cairo's peripheral districts or urban centers such as Nasr City district, other than Downtown area.

Furthermore, the findings imply that policy-makers, planners and managers of public spaces not only need to provide physical improvements such as proper sidewalks in height, width, and continuity, street benches, speed bumps, wayfinding signposts, and other microscale physical features that create pedestrian-friendly environments; but also, more importantly, need to attract and encourage a variety of people, through recognizing and supporting the needs of different age groups such as elder people and physically disabled pedestrians, who were not observed on the case study street.

Consequently, improved streets that consider people-oriented plans and designs, and not limited to car-oriented ones, can positively impact pedestrians' walking experience. As advised by Eng. Nagati, the three main stakeholders in the process of streets improvement and management are the government, urban planners and designers, and street users as beneficiaries. Accordingly, solutions and improvements on ground, including but not limited to urban planning, policies, laws and regulations, have to be discussed and studied at those three levels with a special attention to the users' inputs.

The dimensions of the pedestrian-friendly streets issue were discussed through the proposed conceptual framework that examines street characteristics, people's walking needs, and conflict among street users, in order to reach a set of suggested interventions. Eng. Nagati, as anexpert in the field, advised that the issue of pedestrians and streets can be viewed from different angles in order to have a wider range of choices for the study. He stated that

> it depends on how relations will be made and what is the unit of investigation and analysis. For example, different sets of issues can be grouped and compared against each other in terms of their dynamics. The first option can be grouping "planned/conceived/formal" vs. "practiced/perceived/informal". Each group can be divided into tangible and non-tangible sub-elements. Street design and structure is one of the tangible elements under the "planned" group (interview with Nagati, 2016)

As for the intangible sub-elements, Eng. Nagati advised that policies, laws, regulations and programs for designing and planning the public space can be investigated. Both tangible

and intangible sub-groups can be listed under the" formal" concept of the public space. For instance, when designing or planning for a new street, the government should take into considerations the street width, length, sidewalks design, pavements width and height, and so on. So, this "formal" side of the issue should be taken into account at the level of planners or designers who are working in the public/governmental sector or at the private sector, and decision makers (interview with Nagati, 2016).

As for the other group-"practices"- He referred this part to people's uses and perceptions, which can be sub-grouped into tangibles and intangibles as well. Eng Nagati explained that intangibles can be people's perceptions towards the place. Under street uses, the different groups of users and their priorities are examined, such as street vendors, shop owners, residents, and car drivers. Out of this model, "conflict" can arise, and this can be part of the hypothesis of the study, where the planned or conceived plans for the street or public space are inconsistent with the actual practices on ground (interview with Nagati, 2016).

Eng. Nagati added that other sides of the issue can be investigated forming other models For instance, "policy", "design", and "practices" can be investigated as main categories of the study. In this assumption, "practices" refers to the informal uses, such as the shop owner who extends his shop boundaries into the pavement, or the street vendor who occupies part of the sidewalk, or the car driver who parks the car partially or totally on the sidewalk that is designated for pedestrians. Even restaurants and car dealers are encroaching the sidewalks, which can be called "five stars encroachments". He pointed out that in this second model, "conflict" can be investigated in more than one direction. The investigation can include examining the relation between "policy" and "design"; "policy" and "practices"; or "design" and "practices" (interview with Nagati, 2016).

In addition to the expert's insights, , it has been concluded due to this study findings that practicing walking as the main way of getting from one point to another makes the person capable of identifying his/her needs and suggesting detailed solutions to solve any inadequacies, maybe in a better way than planners and urban designers. Thus, people-on-foot, who are going through the walking experience with its details, give valuable insights that can be referred to when identifying the problems and their solutions to improve the walking environment for pedestrians.

6.2 Research Implications and Recommendations

After conducting a field study, reviewing relevant literature, and discussing findings in light of guiding theories and models, this study suggests that in order to have walkable streets in Cairo, efforts in multiple directions have to be incorporated. As for Cairo, it is not an isolated city; thus, officials have to study how other cities around the world have succeeded in transforming their streets to pedestrian-friendly environments. In this regard, it was alleged by Mehta (2008) that those cities are paying attention to walking and its impact on the well-being of people and the city; thus, efforts towards having pedestrian-friendly streets begin by policy-makers, who are writing relevant policies that guide city planners and managers to improving existing streets and promoting new ones to be pedestrian-friendly environments. Thus, policy-makers and city officials are main stakeholders, whom political will is supposed to be the spark that encourages all other efforts to start and continue.

In light of this study findings, reviewed global experiences, and assuming the presence of the political will, the following section will display a number of suggestions that are regarded as tools that can help improve Cairo streets to be pedestrian-friendly environments. Thus, it is divided into themes of interventions as follows: The importance of research in policy-making and city planning processes, participatory planning approach, enforcement of legislations and laws, and raising public awareness.

6.2.1 The Importance of Research in Policy-Making and City Planning Processes

Policy-making and city planning efforts are suggested to be in tandem with research conducted in the fields of environment, psychology, public health, urban planning, and other fields of research, where the results may help to study further the subjective factors influencing pedestrians' walking experience that are understood through deeply investigating and studying individuals' perceptions and needs. This can be achieved by conducting research that targets different types of streets and investigates the perceptions and needs of diverse local pedestrians, which may result in multiple factors depending on the features of the studied area and the needed improvements in order to facilitate people's walking experience. Thus, results can be used in shaping tailored decisions regarding the most convenient street features that help accommodating people on foot per street type and nature.

As there is no one-size-fits-all solution, research that links the local people's perceptions and needs to the different characteristics of streets is regarded as an important step that helps any improvements on the ground to be evidence-based and not just trials that may be a waste of resources. For instance, the results of this study can be indicative for understanding the factors that influence pedestrians' walking experiences on certain types of streets, which are main streets with mixed-uses, where safety and cleanliness issues have been dominantly mentioned by participant pedestrians; besides, other issues in terms of sidewalks conditions, improper lightings, and lack of seats and wayfinding signage, which were observed during the field study. Another successful example of applying research is CLUSTER's recent research and work in Downtown passageways that aimed at considering them as a community that can be connected to serve as a pedestrian web. A pilot study was conducted on two passageways, where they were re-paved and cultural activities were established inside these two passageways in order to be more pedestrian-friendly (interview with Eng. Nagati, 2016). Hence, the methodolgy of applying research through grounded practice is believed to be an

effective tool, where an issue is selected, a hypothesis developed, and changes on ground take place to get results.

The results of this research and similar research efforts that are concerned with the needs of non-motorized road users, such as pedestrians, can be used in an early planning phase of new streets with similar features and conditions; otherwise, postponing consideration of these evidence-based results until the final construction phase may not be an appropriate decision where resources allocated for such adjustments may not be available or necessary modifications may add to the problem instead of solving it, if they are implemented on the wrong time or phase.

Although this study adds to the knowledge of linking the built environment characteristics and people's walking needs through presenting subjective perceptions of individuals towards their walking environment, it is limited in number of interviewees, location, and timing. Therefore, more studies are needed that can better examine diverse locations, in different timings of the day and around the year, and with other research techniques that may encompass a wider range of pedestrians.

On the other hand, if the policy-makers and city officials are not aware of the importance of having walkable streets for both the people and the city in terms of social, environmental, economical, and health benefits, any other effort in other directions, such as conducting further research and enhancing the urban planning of streets to be more people-oriented, will be an incomplete work as it will not be reflected in reality.

6.2.2 The Participatory Planning Approach
Starting by the planning phase and continuing till managing a city, the target should be the well-being of residents. Thus, setting priorities for planning a new street or managing an

existing one can be supported by local people's feedback, which is difficult to detect without allowing them or their representatives to participate in the planning process.

As per the Building Law 119 for 2008, Article 11 and 12, the legislation in Egypt stipulates the participation of people's representatives through entities such as the elected local councils and local units in setting urban planning needs and priorities at the local level along with representatives from residents and civil society organizations to discuss the annual budget plan (Tadamun, 2014). Despite the presence of such a legislation, it is still the absence of the political will to enact laws and enforce effective monitoring tools that can lead to practical participation and representation of people.

In conclusion, if there is a political will to accommodate streets for pedestrians' uses, local people's inclusion in the planning and management processes can be an effective tool to create an environment that reflects their needs and demands and not just implementing technical objective criteria based on urban planners' and designers' points of views regardless of users' subjective inputs.

6.2.3 Adopting People-Oriented Planning Paradigms

After reviewing the existing literature concerned with Egypt, it is concluded that the planning paradigm followed regarding streets and roads are vehicle-oriented, while the global literature shows various concepts and paradigms that exist and can be applied, if the streets are intended to be improved in terms of accommodating and facilitating people's walking experience. As per the relevant literature, it is recommended to consider one or a set of appropriate approaches that are globally implemented during the planning, designing, and management phases of the streets, such as *Living streets, Shared zones, Sharing the main street, 5Cs layout, and Complete streets.* The selection among these concepts may depend on the street

type and local pedestrians' and other users' needs, which can be determined through further research to encompass multiple locations across different time zones.

Referring to the interview conducted with Eng. Nagati, he advised that recommendations for improvement depend on the set of relationships the research will examine so as to suggest for the relevant interventions. He added that for example, if the "policy" and "practices" relationship will be examined; therefore, interventions and solutions should be suggested in a way that helps to minimize conflict or inconsistency between these two parameters. Thus, in this case, policy should be re-formulated in a way that matches what is practiced on ground. He denoted that if policy makers got the notion that shop owners invade part of the sidewalk in front of their shops to extend their goods on, so why the policy makers do not consider this issue and stating that part of the sidewalk can be formally get designated for shop owners? Thus, conflict can be resolved by formalizing the informal practices, which is one of the well-known ways of solving problems.

6.2.4 The Enforcement of Laws

Due to the significance of having walkable street environment socially, environmentally, and economically, public policies need to address the issue of pedestrian use of streets. The policy framework for this issue can be encouraged under more than one policy directive, such as environmental policies, in terms of mitigating emissions by reducing car and vehicle usage, and social rights in streets as part of the public space, in terms of the right to the city.

However, the policy issuance is not the ultimate goal, as the enforcement of the laws that echo the public policy is more essential. In Egypt, some laws are stated in favor of having an environment that encourages walkability such as the **Public Cleanliness Law 38/1967 and the Environment Law 4/1994.** These are two examples of laws that refer to the importance of

having a clean environment by stating the limits and boundaries of dealing with different types of waste. Nevertheless, no tangible results have been shown through the case study street in reference to those two laws.

As per (Fahmy, 2013), the Public Cleanliness Law and its Executive Statue with Decree 134/1968, which was amended by Laws 31/1976, 145/1988 and 10/2005, defines the responsibility of the governmental entity responsible for public cleanness works starting from establishing the places appropriate for putting the rubbish and wastes till their transport. It also prohibits to throw wastes or garbage in other than the boxes or places designated. In addition, Article 9 of the same law states that "whoever commits a violation of the provisions of this Law, or the decrees enforcing it, shall be liable to a fine between 20, - EGP and 50, - EGP" (Fahmy, 2013, p. 32).

Regarding the Environment Law 4/1994, which was amended by Law 9/2009, is concerned with protecting the environment in terms of prohibiting dumping the garbage and solid wastes in any place except at the places or containers specified for such purpose (Fahmy, 2013). Besides, it states that "the local administrative bodies in collaboration with Environmental Affairs Agency, should keep the trucks and bins clean, allocate the bins and places of collection, otherwise the person in charge in the local administrative bodies will be held responsible" (Fahmy, 2013, p. 33).

The two mentioned laws are set as examples showing the presence of laws and regulations that stipulate the responsibilities of the governmental entities towards the public cleanliness and environmental protection; besides, they set limits for public space users regarding throwing garbage. However, the case study findings, which were based upon people's responses and observing the study area, suggest that neither the public are aware of these laws nor the local unit's garbage collectors showed abidance to their stated responsibility.

Moreover, there are no defined mechanisms through which the local governmental unit can practically detect or monitor abidance and deviation of these laws. Thus, it is recommended to further investigate the existing laws that can influence the street environment and to devise suitable and practically feasible mechanisms that can monitor the enforcement of the set laws.

6.2.5 Raising Public Awareness

In order to help creating pedestrian-friendly streets, people's awareness of the value and importance of such an environment is suggested to be a key driver. This suggestion is based on the findings that showed that the case study participants were not all aware of the concept itself. Accordingly, it is concluded that public awareness, which includes pedestrians' and other street users, can be one of the suggested mechanisms to be adopted by relevant government entities and civil society organizations in order to direct people's attention towards the social, health, environmental, and economical benefits of having walkable streets and minimizing the reliance on motorized transport modes.

6.2 Future Research

After concluding this study, and in light of the data collected and analyzed, it is believed that the issue of walkable or pedestrian-friendly streets needs further research in terms of examining different locations, street types, timings per day, seasons per year, and with various research methods. This recommendation is supported by both empirical findings from the field case study and Eng. Nagati, who asserted that future research can be useful if the spectrum of the study is broadened geographically and in different times per day and in different seasons per year. He illustrated that the type of data collected in mornings, weekdays may differ from those collected in the afternoons and evenings, and in weekends; for example, on Fridays, the mosques extend outside for prayers, so streets become full of life and sociability; in the month of Ramadan, people are gathered for eating together on streets. This diversity in time cycles are believed to be important in enriching

the data collected and hence analysis and results. If the issue is examined from multiple facets, this may yield results that differ according to the street type, local people's needs and perceptions, timing and season. Accordingly, effective tailored solutions and interventions can be offered and implemented that help to contribute to the limited research conducted in this field.

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Appendix

SAMPLE OF THE PARTICIPANT OBSERVATION AND FIELD STUDY JOURNAL

I.   Participant Observation Sample

- I went to Abou El Ataheya Main Street, which is an extension of Abbass El Akkad Street in Nasr City district, Cairo on April 30, from 6.30 p.m. to 8.30 p.m.

- I started my observations by taking photos of the pavement on one side and of the pavement on the middle street island: the pavement was broken in most observed parts; bricks are present but out of place, and metal framing of electrical and drainage installments on the pavement are protruded above the surface causing obstacles for people using the pavement, as I tumbled.

- When the sun went down, I started to observe the lighting fixtures on the same sides I observed the pavement condition: I drew a map of the public lighting fixtures and I marked those that were lit up and those that were not.

- I started to go around in order to stop pedestrians for quick short interviews. I noticed two black men sitting on the newly built bus stop bench with pergola; I approached them and introduced myself as a researcher in the AUC and showed them my permission letter signed by Dr. Hamid ElTagany, I got surprised that one of them knows Dr. Hamid- as they are Sudanese as well- and said that " he is a well-known professor especially in international associations such as UN organizations", and he conveyed a sense of ease after reading Dr. Hamid's name on the letter. He started to tell me about his job and how long he stayed in Egypt; then I started to ask him in Arabic: هل المشي في الشارع مشجع بالنسبة لك و لا بتجد عوائق؟. The interested one started to answer me as he views streets in Cairo as only for cars and not for people, as his main concern was feeling unsafe to cross streets as cars have priority. He added that he

gets annoyed because of harassment [referring to his wife using the streets] and this puts on him the burden of doing most of the shopping instead of her. In addition, he was stolen once in one of Nasr City streets.

- I stopped another young man to interview him. I followed the same above mentioned procedures in introducing myself, and I asked the same question. He approved to get interviewed. I asked him first about his age and profession; he is 23 years old and is a student at the faculty of Engineering, living in Shobra district and coming to this street for attending a course. He answered my question as follows: I am athletic and I love walking, but I do not pay much attention to street conditions as I have to walk anyway for physical fitness. I started to ask him more about what annoys him if he pays more attention? He said that garbage and cars invading streets maybe the main annoying features of streets, but anyway he prefers walking for an athletic reason.

- Another two interviews were conducted with a Kiosk boy and an educated girl works as a gate keeper at one of the building. I followed the same procedures and questions mentioned above. But I had to ask more helping questions to make them better understand what I mean, such as: ايه اللي بيخليك لا تفضل تمشي في الشارع ده؟طب نفسك في ايه عشان الشارع يكون مريح في المشي ؟

- I wrote down all my observations, answers of questions, and I took photos of some street features.

- **List of General Interview Questions to Willing Participants on Case-Study Street:**

1. Do you prefer walking down this street? Why?

2. Do you prefer walking or using other transportation modes? Why?

3. What are the obstacles you face in walking down this street?

4. What encourages/discourages you to walk?

5. How can you briefly describe the current status of Cairo streets?

6. What are your suggestions to improve the streets of Cairo to be more people-oriented rather than car-oriented?

1) **Two Sudanese Men at the bus stop seat on sat. Apr 30, 2016; time: 6:45 pm**.

   o *Description:*

   o Age of respondent: 36 years old.

   o Profession: Private driver.

   o Duration of stay in Egypt: 13 years, the other one was a new comer to Egypt.

   o I noticed them in the bus stop seat and I decided to approach them in an attempt to have a quick interview with them regarding their experience as pedestrians on Cairo streets.

   ➢ *The interview:*

   o Me: Excuse me, I am a master student at the AUC and I am doing my research on streets, so can I interview you? And I showed them the AUC PPAD letter of permission to conduct interviews and observations. I assured them that their personal identity will not be revealed except for the gender and age, if they allow me. [This introduction is repeated per each interview]

   o One of them: Yes sure. I noticed the signature of Dr. Hamid Al Tigany; I know him he is a famous Sudanese professor and he is well known in the international associations, as I am a member of some of them such as UN agencies.

- So, I got comfortable with this good impression, and I had a seat beside them and started my interview.

- Me: Are you a resident or a visitor to Egypt?

- The respondent: I have been here for 13 years as a refugee. I am working as a private driver.

- Me: Can I ask you about your age?

- The respondent: Sure. I am 36 years old and I am married.

- Me: Do you see this street is encouraging for you to walk? [Repeated per each interview]

- The respondent: I see car drivers have priority in the street. Those who are in cars are safer than people on foot especially in regards to crossing the street. Car drivers do not care about pedestrians crossing the street.

- Me probing: Is this the only comment you see in streets of Cairo?

- The respondent: I also dislike that my wife goes alone on streets because of harassment, and this puts more load on me as I am the one who goes to get our demands and cannot leave her alone.

- Me: Any other stories?

- The respondent: Yes, I have been once robbed on the street while I was carrying a bag full of gifts for my family and friends and I was on foot and someone grabbed it and ran away, but thanks God that my important documents were not stolen.

- Me: Do you see positive factors that you like about streets?

- The respondent: Yes, in general I believe that the streets in Egypt are more developed than those in Sudan.

- Me probing: Like what?

- The respondent: Like this bus stop seats.

- Me: But these are newly installed. Do not you pay attention to the pavement condition as it I broken around us and cars parking partially or totally on them?

- The respondent: I generally prefer using transportation rather than walking.

- Me: So, you are now sitting here waiting for the bus?

- The respondent: No, we are just sitting to take rest from walking.

- *My interpretations:*

- Re-the last point, he was sitting in the bus stop seat to have a rest after a walk and not waiting for the bus. Despite using the bus stop seat for rest, he did not mention the lack of seats on streets for pedestrians to rest.

- In addition, he mentioned his experience on streets with more than one negative factor, such as harassment, robbery, and feeling unsafe in crossing the streets, but he still regards streets in Cairo as more developed than in his country without referring to any other element except the installation of bus station seats.

➢ *Analysis*:

  - Contradiction in the responses.

  - The frequency of having discouraging experiences of walking on streets of Cairo are more than the encouraging ones.

2) **A young man at the corner of the sidewalk of Egyptair Office; on sat. Apr 30, 2016; time: 7:30 pm.**

- *Description:*

- Age of respondent: 23 years old.

- Profession: Undergraduate student at the faculty of Engineering

- I noticed him buying from the kiosk by the corner and I decided to approach him in an attempt to have a quick interview with him regarding his experience as a pedestrian.

- *The interview:*

- The above mentioned introduction have been repeated.

- Me: What encourages you to walk in this street?

- The respondent: I am from Shoubra and I come here for a course.

- Me: So, you do not usually walk here. O.k., so what is the good or bad things on this street as per your short visits to this area?

- The respondent: I am an athletic and I prefer walking anyway. But, I can notice negative things on streets such as garbage like the one you see at the corresponding corner [photo attached]. In addition, cars invading the street and I cannot cross safely.

- Me: So, I understand that these factors can discourage you from walking, am I right?

- The respondent: Not exactly. I love walking as a physical activity, and I will walk under any condition, even if there are some discouraging factors.

- Me: My last question, if you do not mind. Can you tell me whether you prefer to walk down Shoubra streets or here? And why?

- The respondent: Shoubra is better for me, as public transportation means are more accessible and abundant.

- *My interpretations:*

- Although the interview was conducted on the pavement at the street corner where it was broken and tiles were out place, the respondent did not pay attention to pavement condition and did not even mention this status as one the discouraging factors to walk.

- *Analysis*:

- He assumes that because he is an athletic person, he will walk on the streets regardless their conditions.

- He did not even showing attention to the details of the street environment for pedestrians, as he was already standing on a totally broken part of the pavement, where pavement tiles are out of place and we were standing on the sand.

- Despite being an educated person, he does not have enough awareness about the rights of people on foot to have a better pedestrian environment except for cleanliness and safety in street crossing.

3) Kiosk boy at the corner of the sidewalk of Egyptair Office; on sat. May 1ST, 2016; time: 7:50 pm.

o *Description:*

o Age of respondent: 18 years old.

o Profession: Working at the kiosk; uneducated.

o I decided to interact with the person working at the kiosk in an attempt to understand better the street environment as part of my participant observation. I bought something to drink and started my chat with the boy.

o *The interview:*

o I noticed that the boy is looking at the papers in my hand in a skeptic manner as I was writing down my field observations. So, I decided to reveal my identity to him and I started to introduce myself as a researcher to calm him down, as I guessed up that he thought that I was from a governmental authority.

o Me: So, will you cooperate with me and tell me what do you like about the streets while walking?

o The boy: I do not like the garbage everywhere and people's fights especially youth.

o Me: And what about cars? Do you cross the street easily and safely?

o The boy: Street is mainly for cars and I am the one who should take care while crossing the street. It is normal that cars do not stop for me to cross; it is me who should wait.

o Me: Can you remember any incident that happened in the street that annoyed you and made you dislike walking?

o The boy: Yes, I remember once young men were quarrelling in the street and they were shouting at an old woman. Another time I heard about a famous incident that happened in this street where a car with young men was passing beside a woman and they grabbed her handbag and she refused to let go her bag, and the car kept on driving while the men inside it were grabbing the woman with its bag. Finally, the woman left the bag for them but she was injured.

- Me: Do you have sisters?

- The boy: Yes, two younger sisters.

- After what you have told me, do you feel comfortable when they walk down the street alone?

- The boy: I do not let them walk alone. Streets are full of "dirtiness of people" and girls and women are not respected.

- Me: Do you mean sexual harassment?

- The boy: Yes of course.

- Me: So, in total walking on the street is a positive or negative experience for you?

- The boy: I do not pay attention to street details; I will walk in the street anyway. I only care about my work.

➢ **My interpretations:**

- The boy seems to be poor and is caring only for making his living.

- He does not care about street details for him as a man, but he pays attention to safety when it comes to his sisters.

➢ **Analysis:**

- Tight economic status of the boy & lack of awareness [not education, as in the former interview the undergraduate university young man also lacked awareness] affected his judgment about his right as a pedestrian in using the street.

- This topic seems to be luxurious to him, as he literally stated, " all I care about is making my living" "لقمة عيشي "

4) **Gatekeeper girl at one of the Residential buildings; on sat. May 2, 2016; time: 8:20 pm.**

➢ *Description:*

- Age of respondent: 17 years old.

- o Profession: Daughter of the building gatekeeper; she is studying at school.

- o I noticed her in front of one of the buildings. I approached her and introduced myself as a researcher and asked if she is willing to answer some quick questions and she agreed.

> ➤ *The interview:*

- o Me: Do you usually walk or you ride any means of transportation?

- o The girl: I usually walk when I go to school, after- school private lessons, and when I go to the market to do shopping for the residents.

- o Me: So, do you enjoy your walking experience? Or you face troubles?

- o The girl: Street is "disgusting".

- o Me: Oh! Why?

- o The girl: I go to after-class lessons in the afternoon till evening and I walk down the street in the direction of Enppi Petroluem Co. what usually annoys me and makes me afraid of walking is the chasing of homeless people. I face this twice. Besides, I face verbal harassment from microbus and taxi drivers.

- o Me: What about the sidewalks? Do you have any comments?

- o The girl: I do not use them; instead, I try to walk on the pavement of the street middle island as the sidewalks are crowded by cars parking totally or partially on it. And cars even park in second and sometimes third row along the sidewalk, which forces me to be on the street itself. Also, I dislike the garbage thrown in the street, even if there are garbage bins, I find garbage on the pavement and in the middle island.

- o Me: So, you still prefer walking or you can change your mind and try to shift to using public transportation?

- o The girl: I will choose to walk because I feel unsafe when I use public transportation without accompanying an elder person. I want to add that I get afraid of the street dogs, especially when I go to school early in the morning as they are gathered and no one collects them to protect us.

o Me: What do you want to have in our streets in order to walk without getting annoyed?

o The girl: I want all the problems I mentioned to be solved. I want to find a decent area for people on foot to walk on.

o Me: We have pavements already.

o The girl: The pavements are invaded by cars parking either on or along them and pavements are already narrow. We need wide pavements.

I want also to see traffic policemen to regulate cars especially at road intersections in order to facilitate pedestrians crossing the street.

o Me: But, streets have automatic traffic lights to organize pedestrians crossing.

o The girl: The car drivers do not respect pedestrians, even when the traffic light is red. Even if car drivers stopped, when I start to cross the road I find a sudden motorcycle proceeding.

o Me: Finally, after all these details, if you have a chance to suggest solutions to the officials, what will you say?

o The girl: I will suggest to have rules punishing anyone throws garbage in streets and harsh rules for harassment, because the max. Reaction the girl can do defend herself is to shout, but at the end there is no rule protects us. For example, my friend faced harassment in the street and she succeeded to report a case at the police station, but what she found that the harasser was set free by a bail. We need rules to punish to feel safe on streets. Also, I suggest to install curbs to slow down the speed of cars to give priority to pedestrians to cross the street, as there is neither signs for pedestrian crossing nor traffic policemen.

➤ **My interpretations:**

o The girl astonished me with her attendance to details as if she is an expert.

o Although her young age and modest socio-economic background, she impressed me with pointing out details that were not mentioned by other interviewees.

➤ **Analysis:**

o Paying attention to the quality of walking experience and the person's needs as a pedestrian is not much affected by age or socio-economic background; it is a subjective judgement.

o Practicing walking as the main way of getting from one point to another makes the person capable of identifying his/her needs and suggesting detailed solutions to solve any inadequacies, maybe in a better way than planners and urban designers.

o So, people- who are going through the walking experience with its details- give valuable insights that can be referred to when identifying the problems and their solutions to improve the walking environment for pedestrians.

III. Key Informant Interview

- Interviewer: Sahar El Ghandour [MPA student].
- Interviewee: Eng. Omar Nagati [founder of cluster— Cairo Lab for Urban Studies, Training and Environmental Research].

In an attempt to find one of the experts in the area of my research to get more insights through a face-to-face interview, I have been advised to interview Eng. Omar Nagati as a key-informant. I have already been reviewing their research on public space in Cairo and their practices in Downtown area.

Eng. Nagati is the founder of CLUSTER, which targets establishing a critical space for urban dialogue by relating critical theorization with professional practice on ground.

I sent him an e-mail and he welcomed me and set the time of the interview to be on Tuesday at 5.30 PM, and the location is CLUSTER office in Sherif Pasha St., Downtown.

I arrived at CLUSTER on time. Eng. Nagati has welcomed me in his office. He started to ask me about the scope of my research and the literature I have reviewed so far. I have mentioned that my research is on pedestrian friendly streets and Abbas El Akkad Street in Nasr City is my case study. Regarding the literature, I have reviewed the research and books of the pioneers of the field, such as Jan Gehl and Jane Jacobs.

Me: Thank you Eng. Omar in advance for allowing me to take the advantage of interviewing you and taking part of your precious time.

Eng. Omar: Not at all. It's part of our mission to help researchers.

Me: Alright. I have introduced myself over the e-mail, but I will do it again as a reminder. I am Sahar El Ghandour. I am pursuing my master's degree in public administration at the school of GAPP/ AUC. My thesis topic is about "pedestrian-friendly streets". My thesis supervisor is Dr. Khaled A. El Halim.

Eng. Omar: Dr. Khaled is an esteemed professor and practitioner and I have good relations with him.

Me: He advised me to arrange an interview with you when I asked for an expert in the field, and he advised me to read research done by CLUSTER on public space and streets. Part of what I read was concerned with the issue of street vendors in Downtown area, and I am citing part of it in my thesis proposal.

Eng. Omar: Actually we are doing applied research, as we do research by trying models on ground and not theoretical ones only. We have work in downtown area and Ard El Lewa and others.

Me: Yes, I have a hardcopy of "Learning from Cairo" publication that was an international symposium co-organized by CLUSTER and AUC.

Eng. Omar: Yes. And, we have another publications that will be useful for your study. I will give you hardcopies before you go, as we have a library here and it aims at helping researchers.

Me: Thank you in advance. Now, as you know my study's title and angle of concern, do you have suggestions from where can we start our interview?

Eng. Omar: I would leave this choice for you.

Me: OK. As I am now sitting with an expert, I think that the issue of streets may have several interrelated perspectives; so, in order to focus on my issue of concern, I suggest to discuss my conceptual framework, as this is the tool through which I am expressing my research dimensions.

Eng. Omar: OK. Let's begin.

Me: I discussed the dimensions of the issue through the conceptual framework that examines street characteristics, people's walking needs, conflict among street users, and suggested interventions.

Eng. Omar: You may look at the issue of pedestrians and streets from many different angles in order to have a wider range of choices for your study. It depends on how relations will be made and what is your unit of investigation and analysis. For example, you can organize your ideas as follows: To look at different sets of issues that can be grouped and compared against each other in terms of their dynamics. For example, the first option can be grouping "planned/conceived/formal" vs. "practiced/perceived/informal". Each group can be divided into tangible and non-tangible sub-elements. Street design and structure is one of the tangible elements under the "planned" group.

Me: Should I investigate tangible elements technically? As "design" entails technicalities.

Eng. Omar: Not a must. But, at least you should list them.

Me: So, can we consider "street seats" as one of the tangible elements?

Eng. Omar: Yes. I can mention further examples as we are proceeding with this model. As for the intangible sub-elements, policies, laws, regulations and programs for designing and planning the public space can be investigated. Both tangible and intangible sub-groups are listed under the" formal" concept of the public space. For example, when designing or planning for a new street, the government should take into considerations the street width, length, sidewalks design, pavements width and height, and so on.

Me: So, this "formal" side of the issue should be taken into account at the level of planners and decision makers.

Eng. Omar: Yes. Whether those planners or designers are working in the public/governmental sector or at the private sector.

As for the other group-"practices"- here comes the part concerned with people's uses and perceptions. It can be sub-grouped into tangibles and intangibles as well. For example, intangibles can be people's perceptions towards the place. Under street uses, the different groups of users and their priorities are examined, such as street vendors, shop owners, residents, and car drivers.

Out of this model, "conflict" can arise, and this can be part of the hypothesis of the study, where the planned or conceived plans for the street or public space are inconsistent with the actual practices on ground.

Another sides of the issue can be investigated forming another model. For instance, "policy", "design", and "practices" can be investigated as main categories of the study. What I mean by "practices" is the informal uses, such as the shop owner who extends his shop boundaries into the pavement, or the street vendor who occupies part of the sidewalk, or the car driver who parks the car partially or totally on the sidewalk that is designated for pedestrians. Even restaurants and car dealers are encroaching the sidewalks, which can be called "five stars encroachments".

Out if this second model, "conflict" can be investigated in more than one direction. The investigation can include examining the relation between "policy" and "design"; "policy" and "practices"; or "design" and "practices".

Me: In both models, interventions and recommendations for improvement can fit. Right?

Eng. Omar: Of course, but it depends on which relation the research will examine so as to suggest for the relevant interventions. For example, if the "policy" and "practices" relationship will be examined; therefore, interventions and solutions should be suggested in a way that helps to minimize conflict or inconsistency between these two parameters. So, in this case, policy should be re-formulated in a way that matches what is practiced on ground. I will give you a quick example, if policy makers got the notion that shop owners invade part of the sidewalk in front of their shops to extend their goods on , so why the policy makers do not consider this issue and stating that part of the sidewalk can be formally get designated for shop owners?

Me: OK. So, you mean that conflict can be resolved by formalizing the informal practices.

Eng. Omar: Yes. This is one of the well-known ways of solving problems.

Me: But, I want to share with you my preliminary conclusions out of my field visits, I see that people's lack of awareness and not knowing their rights on streets is part of the problem, and not only design and policy aspects.

Eng. Omar: As a researcher, you should leave aside your impressions, and collect as much data as you can, then you can get conclusions after you analyze people's inputs. But, in your stage, it's too early to draw conclusions.

Me: What I meant is that I found pedestrians on the street I investigated telling me that the streets are mainly for cars and they as pedestrians should take much care as it is their duty. So, I concluded that their perception of the street uses is limited to cars and not people. Accordingly,

how would the government care about the people who do not know their rights and do not voice their needs, which they are not aware of in the first place?

Eng. Omar: Not only that. But, you will notice also that most of the new generation do not know that the new street signals are for pedestrians as well as cars. Accordingly, you will face another issue, which is "attitude" and "culture" of people on streets. The attitude starts by trying to fulfill a "need". For example, if there is no pedestrians' crossing signals, they will not cross. If crossing signs are installed, they may not use it, as their "culture" has been already shaped and affected their "attitude", even if the status has been changed to the better.

Me: It is very helpful to know all these different ways of thinking and organizing elements of the issue. Now, I am interested to know your view of the two concepts: pedestrian-friendly and walkability. Are they different?

Eng. Omar: "Walkability" is moving from one point to another on foot. This concept may be more useful in studies such as examining walkability of children to schools. This issue entails conceptual and geographical dimensions. While "pedestrian friendly" concept is beyond the "walkability", as it is wider. It is not limited to the walking as a physical practice, but it includes for example activities on streets, such as carnivals. This contributes to transforming the urban experience from motorists dominating uses to pedestrians' uses. This gives livability to cities. As you mentioned earlier, Jan Gehl has contributed much in this area of research.

Me: Yes. I have read his famous book "Livable Cities". But, in my field interviews, no one so far has mentioned anything about social life of streets. Do you believe that Egypt streets miss this important use?

Eng. Omar: You are neither studying Egypt as an ideal model, nor as one unit. The research can be extended to examine international practices in cities, such as Cairo vs. Copenhagen, or Cairo vs. New Delhi or Johannesburg. These cities have experiences in urban management that can inspire policy makers and city planners and managers with good examples. Some cities have adopted strange ideas such as installing escalators or cable cars on streets to convert them to pedestrian-friendly environments. Also, comparing Cairo Downtown with cities such as Copenhagen can be valuable regarding the fully pedestrianization practices that were introduced in Downtown Boursa and Al-Alfi streets and passageways as well. The comparison can give us more insights into the experience and whether it has succeeded in Cairo or not, and if not, what are the factors that led to its failure? And so on. So, studying specific street elements and comparing between cities is another methodology, which is a comparative one.

Me: Regarding fully pedestrianization, this is not the scope of my study as I am focusing on pedestrian-friendly streets and not pedestrian-only streets.

Eng. Omar: OK. I can share with you some of our recent work that may be of interest to you. We have done research on downtown passageways as a community that can be connected to serve as a pedestrian web. We conducted pilot study on two passageways, where we re-paved them and established cultural activities inside these two passageways in order to be more pedestrian-friendly. So, in that way we do not do basic research, but we practice applied research through grounded practice. We select an issue, develop a hypothesis, and we practice changes on ground to get results.

We are now in our way to publish our latest research on "street vendors & the conflict issue on the public space".

Me: I wanted to share with you the themes I have concluded from my field interviews. People on foot care much about safety issues, for women it was the issue of harassment, but for men it was the robbery. Other issues were street crossing safety, garbage, pavement condition, but what I missed in the responses was the aspects of the cultural and social life of streets.

Eng. Omar: I disagree with you. Sociability is partially mentioned in the responses you got in terms of the harassment issue.

Me: But, no one has mentioned any aspect of street attractiveness, such as walking for shopping.

Eng. Omar: May be it differs from one location to another. So, if you examine Downtown streets, you may find this factor in people's responses. You may get responses regarding cinemas and coffee shops as pedestrians' destinations that attract them to walk. Surveys in different areas can be conducted to get better insights. For example, you can compare Downtown area with suburbs or upper class areas and so on. Another way of studying the issue can be limiting your study into one type of areas, such as "pedestrian-friendly streets in Downtown" or "in upper class areas" or "in new cities". This way is of a geographical criteria. The study can examine one specific element of streets and focus on it as the main analytical unit, but in different geographical locations, such as studying only sidewalks and scan their status and other comparative aspects in more than one location. In this case, the study can be limited to "pedestrian-friendly sidewalks". I have lectured students in MSA University one whole semester on street sidewalks. We have studied different sidewalks in different locations

to see their differences in design aspects and what types of encroachments each has. These elements influence people's walking decisions and preferences.

Me: But what I believe is that in our country people walk as necessary just to get from one point to another and not for luxurious reasons.

Eng. Omar: But if they were asked to choose, you will find them selecting for example to pass through shady passageways to avoid sunny unshaded areas.

Me: What are your recommendations for my study to be successful and to be contributing to research and practice?

Eng. Omar: Firstly, I advise you to keep on the conceptual framework of your research and to develop it step by step.

Secondly, when you collect data from people, you should list it as is, because their perceptions are indicators from which you should learn. Each one has priorities, so needs will be expressed accordingly. For example, if one woman has told you I feel unsafe in streets because of harassments, and then you observed that no single man is on the street, still you should consider that she has a sense of unsafety on streets, because perception is perception and cannot be filtered. So, first level of study should be collecting data by stating people's perceptions and needs as is. While second level can take you to analyzing those stated perceptions or needs. So, you can analyze why x said so and why y said so.

Thirdly, I advise you to broaden your spectrum of study geographically and in different times per day and in different seasons per year. For example, the type of data collected in mornings, weekdays may differ from those collected in the afternoons and evenings, and in weekends. On Friday, the mosques extend outside for prayers, so streets become full of life and sociability; in the month of Ramadan, you can see people gathered for eating together. Those time cycles are important in enriching your data and hence analysis and results.

Fourthly, I recommend that you widen your literature review readings beyond the classics of literature and to read about international case studies about cities around the world. And, you can use other tools for data collection beside observations and interviews. You can video tape a short film to record the dynamics that take place on the street, and then you analyze what the camera has captured. This method gives you a huge number of details in a short period of time. In addition, you should notice who is missing on streets and examine why they are missing. For example, if you do not see elder people or people on wheeled chairs on the streets, you

need to examine why they are not present. This technique serves as an indirect way of analyzing the issue: to examine the absence of some groups of pedestrians on streets.

And now, let me show you our library, where you can visit any day during our working hours.

Me: Thank you so much Eng. Omar. I am grateful for allowing me to conduct this interview with you despite your limited schedule. Now, I have only realized how precious it was for me to have the insights of an expert. Thank you a lot.

Eng. Omar: Not at all. It is our mission and duty. You are welcome any time.