



University of Strathclyde
Department of Architecture

**A Multi-layered Mechanism to Evaluate
the Quality of Transformed Public Spaces
in Mediterranean Waterfronts**

THE CASE OF ALEXANDRIA'S WATERFRONT

By

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

In The Name of Allah, The Most Beneficent, The Most Merciful

DEDICATION

*To the ones I love more than myself, my beloved family and close friends
My Dear parents; Dr. Nagy Mahmoud Elsimillawy & Soheir Nabil Khairy, my two sisters
and friends Aya and Omneya . You Always made me stronger, better and more fulfilled
than I could have ever imagined. Thanks for making my life Wonderful.
I will be always grateful and thankful*

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ABSTRACT

The transformation of port cities throughout history has impacted various urban settings. In particular, the transformation and modernization of the Ottoman Empire's port cities has altered urban characteristics, reshaped the urban settings and resulted in new public behavior never existed before. This has been evident in urban spaces and waterfronts where functional, social and perceptual aspects are continually changing. Such a transformation demonstrates the importance of public spaces and their qualities not only on a physical level but also as a stimulator of social life. This is mainly true in Alexandria where its old public spaces (squares) on the waterfront in the city center play a critical role in the urban structure of the city and its residents' daily life. Enhancing these public spaces requires a complete analysis which generates new knowledge about their quality, current and potential use, as well as future prospects.

This research addresses the assessment of public squares in the Eastern harbour of Alexandria, placing emphasis on their physical qualities, setting an appropriate context for people's diverse activities and whether they contribute to users' satisfaction and public life. Utilising a multi-layered method for evaluating these spaces to offer suggestions for improving the quality of life in Alexandria through enhancing the quality of its public spaces, the research strategy develops into a people-based approach and involves studying the analytical context as (a) spatial aspects, by exploring the physical and spatial structure of the selected public spaces and their function, (b) social and perceptual aspects, by exploring the users' perceptions, professional's perceptions and users' behaviour.

The research adopts a case study method choosing five old public spaces (squares) on the waterfront for their characteristic features, and a multi-layered methodological approach. A range of different qualitative and quantitative tools, was implemented systematically including: (1) An impressionistic inventory assessment to explain the current situation of the public spaces, (2) a walking tour assessment to evaluate the qualities of functional, social and perceptual attributes from a professional perspective, (3) observation and behavioural mapping to understand the users' behavioural pattern and finally, (4) an attitude survey involving user reactions to public spaces and visual preference questionnaires to understand the users' perception of the spaces under investigation to interpret various forms of experiences that take place.

The findings reveal several aspects of the selected public squares while emphasizing different qualities that support and stimulate the general liveability of the city life while demonstrating qualities that need to be enhanced. The transformed selected spaces; squares; could not be considered as high quality spaces, although there were positive qualities within each. The transformed spaces appeared to have a serious problem in the provision and quality of the public facilities. Other problems, such as safety and poor maintenance emerged as basic problems, which could not be dealt with at the open space level from experts' perspectives. Residents and users considered the transformed spaces have a high potential usage, as they perceive that the quality of the spaces make possible for them to interact with each other. Consequently, this is driven by place attachment.

The examination draws some conclusions, which will develop into general recommendations. Underscoring the physical and spatial characteristics of urban space is critical for sustaining social interaction as these demonstrate that it is crucial to have a participatory process of design and management to assert that the delivery of the regenerated spaces (squares) or creating ones should meet the continuously transforming users' expectations.

Keywords: Port Cities, Waterfronts, Public Spaces, Alexandria, Urban Transformation, Urban Space, Urban Life.

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1. Introduction

Throughout history, the coastal area which can be described as the intersection of water and the land, has been shaped and transformed by the technological developments according to the daily needs of the people who have lived there. Consequently, the area has been used in various ways, one of which is the creation of ports. Over history, maritime transport and the establishment of overseas relations gave rise to the port cities of the coastal area and the port has been an important factor in the development and transformation of the cities (Agirbas and Ardaman, 2015).

The most constant feature of cities is transformation, they respond to continually changing need. Cities change because life changes. Urban form adapts to changes in society reflecting their social structure (Clerici and Mironowicz, 2009). Urban transformation is often considered as a modern feature of the city. Three urban transformations in the Mediterranean basin led to different forms of the city structures, as a consequence, to new city forms. Starting with the urban transformation due to the new type of settlement in the 4th millennium BC, followed by the ancient Greek city and finally the city model based on medieval order (Mumford, 1961).

The fourth urban transformation started since the first half of the 19th century which is still continuing and can be considered as so far incomplete. This process of shaping a new pattern of the city has two aspects; on one hand is massive growth in area, population and influence on the global economy. On the other hand the second aspect is transformation of internal city structure. Urban patterns react to social needs and technical development. There is no hesitation that the form of the city should follow the level of civilisation reached by particular society. Places change their importance and meaning within city structure. It is a normal process where places are transformed in response to new needs. What is important in this transformation is the stage of decline and degradation. Places losing their utility and meaning, and possibly as a result, their importance within the city structure.

The research focuses on the second aspect of transformation and it considers the port city as a city built around a port, to provide infrastructural support, or as urban sprawl.

1.1 Research Overview

The transformation of port cities throughout history has impacted urban settings; for example, the transformation and modernisation of the Ottoman Empire's port cities altered urban characteristics, reshaped urban settings, and resulted in new public behaviours (Tekeli, 1971; Keyder, et al, 1993). This has been evident both within urban spaces and waterfronts where their functional, social and perceptual aspects face ongoing change. Such transformations demonstrate the importance of public spaces and their qualities, not only on a physical level, but also as a stimulator of social life.

'Cities are the places where people meet to exchange ideas, trade, or simply relax and enjoy themselves. A city's public domain – its streets, squares and parks – is the stage and the catalyst for these activities' (Gehl and Rogers, 2013) p.IX).

Moreover, open public spaces are the core and lungs of a city since they play a vital role in urban life around the world. They are required to function efficiently and successfully, regardless of the way in which both social and spatial contexts shift (Madanipour, 2013b).

Open public spaces first became a concern in the Nineteenth Century when the main issue for Europeans was health; this concern had a positive impact on the quality of the urban environment at the time. Similarly, key urban issues in the Ottoman Empire's port cities were health, order and beauty (Abdel-Salam, 1995; Reimer and Bridgehead, 1991, 1993; Awad and Pallini, 2001). Meanwhile, in the Nineteenth and Early Twentieth Centuries, Mediterranean cities addressed such issues through the construction of wide boulevards with grid plans and public squares. This became a new model of European dominance in urban design which impacted on other cities, notably the Ottoman Empire, which, during the Tanzimat period of reform, saw the development of new public spaces (squares), particularly amongst its port cities.

Following these changes, many scholars raised concerns about public spaces; this included the Austrian urban theorist, Camillo Sitte who, in 1889, expressed concern with the squares and streets in European cities to define a unity between modern and artistic methods through the establishment of suitable and appropriate public spaces for people (Collins, 1965). Furthermore, in the 1960s Jacobs (1961) expressed apprehension about the quality of such squares and streets; however, approximately twenty years later, Whyte (1980) offered initial observational investigations into users' social activities in such public spaces by evaluating the support between public spaces and urban life. From this point, an understanding of active

and successful public spaces developed and this formed the definition of good quality areas that are generally well-used by citizens.

Today, active, efficient and successful urban spaces have to meet different perceptual, social, functional, visual and physical criteria. Open public spaces provide opportunities for social interaction, including all kinds of personal, cultural and economic exchange, and can provide liveable places that play a significant role in community identities (Carmona, 2010). Moreover, a functional public space is perceived by citizens to be an attractive and secure environment for people to use, and this often includes a subjective assessment of the quality of the space. Various researchers, such as Whyte (2001, 2009), Shaftoe (2012), Gehl (2013) and Madanipour (2013b), describe successful urban spaces as sociable where different communities can meet, socialise and otherwise use the space (either individually or in groups).

Additionally, Carr et al. (1992), Marcus and Francis (1998) and Woolley (2003) focused their research on the principles that underpin the creation of successful public spaces, identifying that they attract a wide variety of people through their flexibility of use, diversity of building type, and accessibility. Gehl (2013) also recommends that new developments should take into account the following types of inquiry: what variety of life do we want to encourage, what types of space will be required for this, and, how can the surrounding buildings support this? As a result, new developments must be organised by the following priorities (in decreasing order of importance): life, spaces, and buildings. Subsequently, urban spaces, first and foremost, provide a base for urban life; this is particularly important because it is known that, when considerations for open spaces and urban life are absent from a network, residents become segregated from each other (Carr et al., 1992).

Despite extensive research on public spaces, there is still a gap in comprehension concerning the public realm in cities. For example, Francis (2003) raised the following queries: why are some public spaces more memorable and notable than others; how can the understanding of social, cultural diversity direct the design and the management of urban spaces; what physical forms and structures are the most effective; and how could planners, designers and managers effectively apply the guidelines provided within a vast number of published contextual analyses? Furthermore, there is still a gap in understanding the meaning that people attach to public spaces. Indeed, Francis (2003) suggested that the design and management of urban spaces could be based on the realisation of cultural diversity. Francis also stated that research on public spaces should be more comprehensive in order to fully

understand the meaning that public spaces have for people and the role of urban design in shaping their future.

Recently, some Western and European organisations, such as the Commission of Architecture in the Built Environment (CABE) and the Project for Public Spaces (PPS) have expressed interest in, and provided guides to, develop better ‘Placemaking’ (an approach to planning that uses a community's public amenities to make economic progress in a specific location) (Spaces, 2005, Environment; et al., 2000, Day, 2017). However, in most cases, these guides are based on what professional designers consider a good or appropriate place/space. Furthermore, Shaftoe (2013) stated that few investigations have focused on what users want and need from their public spaces and what they perceive as a good place to use. Thus, urban spaces should be analysed and evaluated with a view to developing a comprehensive framework of place and process that considers such users’ views.

The primary purpose of the urban public space throughout history is to enable people to meet and practice diverse activities. However, administrative, political, socio-economical and spatial changes have influenced the function of urban spaces. Moreover, scholars have established different characterisations of the urban space that are influenced by their research method, theoretical background and motivation to investigate, which in turn, influences their understanding of a public space. However, indicators of the economic, environmental and social benefits of urban spaces have been explored since the mid-1960s. Improving the physical quality of urban spaces helps to enhance their successfulness and the activities they attract, which thereby affects the health and lives of users, and contributes to the protection of the city’s built environment. Furthermore, different categories of urban space have differing characters and a variety of contributions to offer the city (Zucker, 1966 (1959), Whyte, 1980, Whyte and Underhill, 2009, Canter and Canter, 1977a, Alexander, 1966, Alexander et al., 1977, Punter, 1991, Carr et al., 1992, Madanipour, 1996).

Interestingly, different types of urban space have appeared in dissimilar cultures and societies. For example, the Middle East is one of the regions where urban public spaces (squares) were influenced by both European dominance and the Ottoman Empire’s period of reform which emphasised and supported modernisation, especially within Mediterranean port cities, and specifically in Alexandria. However, researchers have subsequently concluded that squares in the Middle East are not as successful as their traditional open spaces nor based as much on the European form (Aljabri, 2014, Germeraad, 1990, Mandeli, 2010). Nevertheless, in Alexandria, old urban spaces (squares) on the waterfront city centre

perform a critical role in the urban structure of the city and its occupiers' daily lives. Furthermore, the type and use of urban spaces have changed throughout time, and these shifts have been influenced by changing socio-economic circumstances, which have subsequently posed challenges, due to the implementation of European designs. In particular, this produced various weaknesses in Alexandria, in terms of the quality and efficiency of its urban spaces. Alexandria, the second largest city and the main port of Egypt, is a representative case of a port city where the transformation of the urban space and the impact of European design can be seen. Throughout history, Alexandria has been represented as a metropolitan mix of diverse peoples who brought together different ideas and traditions within one society. Moreover, it has been a place that clearly showed its contact with other world cultures, especially within the the Mediterranean and Europe; thus, its resulting culture has been described as a blend, and its character eclectic (Thomas, 2007). Substantial changes to Alexandria began in 1805 when Mohamed Ali was selected as the Ottoman Viceroy and Pasha of Egypt (Ilbert, 1996). He started to transform the city into a modern state and launched a significant development programme that aimed to upgrade its education and health services, providing a modern infrastructure, and developing the city's natural resources. Seeking to use Egypt as a source to expand his power, he reopened Alexandria's access to the Nile by digging the 72 km long Al-Mahmudiyyah Canal (completed between 1818 and 1820) (Marbo,2006). However, some Egyptians were called up to join the urban labour force, and most were drawn in by the rapidly expanding economic opportunities: for example, cotton was introduced into Egypt in the 1820s, and by the 1840s Europe's growing appetite for the commodity saw the development of strong trade with Egypt generally, and Alexandria specifically. The city soon became an increasingly important banking and commercial centre in which foreign traders were encouraged to settle through the assurance of legal rights and privileges. Thus, the opening of the Cairo railways in 1856, the cotton boom by the early 1860s and the opening of the Suez Canal in 1869, were all significant events that re-established Egypt as the main staging post for trade. This, therefore, led to further rapid growth in both its indigenous and foreign populations. However, in 1882, the British bombardment of Alexandria caused a local nationalist revolt; this became a significant contributor to the British occupation that lasted until 1922. Nevertheless, despite this change, the city continued to prosper, maintaining its position as the second capital of Egypt.

Under British support, the foreign community in Alexandria continued to flourish and, in 1890, it eventually became a self-administrated city. This saw the launch of several cultural, geographical and public health projects, such as the construction of the Greco-Roman Museum, the development of a public library, improvements and changes in the street and sewage systems, and the recovery of the shoreline from the seawater upon which the waterfront (Corniche) was later placed. This change also saw the provision of a modern infrastructure and urban amenities to meet new lifestyle standards. However, although the majority of Alexandria's residents were Egyptians, the public franchise was closely regulated, and the city council was controlled by a group of European and Levantine merchants and property owners.

The substantial transformation and modernisation initiatives that were adopted from European planning and urban design concepts remain visible in Alexandria today, and are particularly prevalent in the new urban public spaces that have been recently introduced. However, squares and urban spaces in Alexandria are not well-maintained and used, which raises concerns about the influence of planning and urban design in promoting efficient and successful urban public spaces in the city. Currently, different experts and authorities are involved in developing urban open spaces in Alexandria; however, they do not take the urban public space as a severe arrangement. Therefore, this research conducts the first in-depth study into the quality and efficiency of the public squares on Alexandria's Eastern Harbour waterfront. This thesis therefore represents an opportunity to interface contextual analyses and the case studies from Alexandria with studies on the qualities of successful urban spaces; this combination will enhance the data and findings to enable useful correlations and comparisons.

1.2 Research Focus

European influences on Alexandria's urban setting, architecture, urban spaces and urban life have been a concern to the researcher for some time. This concern developed through studying and working on projects in the city centre as an undergraduate student, and later as a Lecturing Assistant. Visiting, being part of, using and observing this area for more than a decade stimulated the researcher's interest to investigate the European imprint on the architecture of Alexandria, which entailed an investigation into its transformation and the evaluation of European influenced urban spaces. The vast differences in quality, maintenance and use of squares between Europe and Alexandria strongly motivated the

researcher to investigate the underlying factors of such a phenomenon. It was also noted that such transformed public spaces in Alexandria lost their quality and efficiency. Moreover, there is currently a lack of research into public open spaces in Egypt generally, and Alexandria particularly; thus, to the author's knowledge, there is no existing research into the quality of public spaces in Alexandria.

The researcher believes that the quality of public squares in Alexandria should be improved to ensure appropriateness for its urban population, to effectively accommodate its users, and offer various activities and opportunities to relax. Thus, the researcher's interest includes questions, such as: how do people in Alexandria use and perceive public open spaces on the waterfront; what effect does the spatial structure of the city have on people's perceptions and behaviours in public urban spaces; how do professionals perceive public open spaces, and what is the role of professionals in delivering new and managing existing spaces? The researcher's initial observations and personal experience of public open spaces in Alexandria suggested that citizens have a healthy relationship with such spaces, especially those on the waterfront with a view of the sea. They spend much of their time outdoors engaging in their city spaces, especially when weather conditions are favourable. On spring and summer afternoons, and despite the present quality of these spaces, many people can be seen outdoors on the corniche or waterfront. According to the Oxford English Dictionary (2017), the meaning of corniche is "*any coastal road with panoramic views*". For Alexandria, this is the coastal road and waterfront promenade that runs along the Eastern Harbour. It is one of the major corridors for traffic in the city. The western end starts at the Citadel of Qaitbay and it runs for over ten miles to end at Montaza Palace. Therefore, this research focuses on the squares on the Eastern Harbour waterfront, which represent a blend of traditional Egyptian and European design.

However, current development and changes in Alexandria has transformed successful public spaces into spaces that are not well used, including squares on the waterfront. There is a lack of research into planning and urban design in general and transformed public spaces in particular. In Alexandria, the governments and army undertake the major role in creating and changing the built environment. Although the social ethos, users requirements, image of the city, and specific changes to port cities, were considered within the modern open spaces in the cosmopolitan and modernised city, they are currently missing in the transformed public spaces. This is an issue that needs to be addressed in order to provide successful public spaces that transform through history. Due to the current rapid transformation of

Alexandrian society, there is a need to develop unique public spaces that are not necessarily reflective of any traditional or European concepts. Instead, these need to be exclusive responses to present needs and enable the regeneration of the image of the transformed port city. The main challenge for urban planners and professionals in Egypt is to consider innovative and supportive policies and to re-consider and restructure their current planning system in order to provide successful public spaces in a constructive manner that maintain the image of the city and its history.

This study concludes that successful public spaces are a crucial element in the structure of a city. Although a good deal of research already exists in this area, insufficient emphasis has been placed on transformed port cities and transformed public spaces on the waterfront. There is an urgent need for research into the current position of such spaces in the region and an evaluation of their provision. This research bridges the gap in providing successful places, especially transformed public spaces, in Alexandria as a port city.

1.3 Research Aim, Key Questions and Objectives

1.3.1 Aim

This research aims to develop an assessment mechanism to evaluate public space in transformed port cities.

1.3.2 Research Questions

The key research questions are, therefore:

- What are the key factors that initiated and shaped urban transformation in port cities?
- How do the physical features of Alexandria's Eastern Harbour squares offer an appropriate context for the range of users' activities?
- How do these squares contribute to their users' satisfaction with the settings?

1.3.3 Objectives

In order to achieve the aim and answer the key research questions, the following objectives have been determined:

1. To identify the physical, socio-cultural, socio-economic, political and administrative aspects of transformation in port cities.

2. To critically identify key attributes which affect users of waterfront public spaces, and develop a framework for the assessment.
3. To develop a theoretical and methodological framework for assessing public spaces in transformed cities.
4. To explore the nature/type/influences of the growth of transformation in Alexandria.
5. To test the assessment mechanism on four selected spaces on the Eastern Harbour Crescent seafront of Alexandria, in order to firstly, evaluate the quality of the public spaces, and how responsive they are for different users and secondly, to understand the processes that generate and manage such spaces.
6. To draw lessons from the Alexandria case study and recommend guiding principles to enhance and improve the existing and future development of public spaces in Alexandria and other transformed port cities.

1.4 Research methodology

The methodology is based on multiple evidentiary sources as a means to respond to the identified objectives of this research and to answer the key research question. The research strategy adopts a people-based approach to develop an understanding of the analytical context, which includes the: (a) spatial aspects (by exploring the physical and spatial structure of the selected public spaces and their function), and (b) social and perceptual aspects (by exploring users' and professionals' perceptions and users' behaviours). This research involves a case study as the primary research method, to discover general insights about the nature of public open spaces in Alexandria and to explore its social and spatial attributes. Within that, mixed qualitative and quantitative techniques are used for the data collection and analysis.

By implementing a case study method, the study selects five old public spaces (squares) on the waterfront, which are known for their characteristic features (section 4.5 and 4.6 in chapter 4). This multi-layered methodological approach employs both qualitative and quantitative tools, which are systematically implemented. This entails:

1. An impressionistic inventory assessment to explain and articulate the current situation of public spaces.
2. A walking tour assessment procedure to evaluate the functional, social and perceptual attributes from a professional perspective.

3. Observation and behavioural mapping techniques to understand users' behavioural patterns and engagements with the identified spaces.
4. An attitude survey involving users' reactions to public spaces, and visual preference questionnaires to understand users' perceptions of the spaces and to interpret the variety of experiences that take place in such spaces.

These techniques form a comprehensive people-based assessment framework and enable an in-depth analysis of the selected case studies within their broader context. The selection of the case studies will help to develop an in-depth understanding of the phenomenon, that allows the findings to be generalised. As previously discussed, different types of method were selected to meet the research objectives and answer the research questions. Data collection tools were designed from the literature review to evaluate successful concepts in transformed public spaces. The following tool matrix summary in Table 1-1 provides a brief overview of the research objectives, their related questions, the chosen tools, the participants in each tool, the methods and the expected outcome of the findings from each method. Furthermore, a detailed explanation of the methodology is provided in Chapter 4.

The findings reveal that the physical quality of public spaces is an important aspect in their use. Modern design concepts that have been found to be relevant in improving the quality of public space in Alexandria are facilities, and the use and meaning of public spaces, which includes place attachment, space identity and spatial meaning. In addition, enhancing active engagement by providing family friendly spaces, user-oriented spaces, leisure facilities, food and drink provision and activities for women, children and elderly people would enhance user satisfaction and the spatial efficiency. Place management and maintenance is essential in order to ensure long term sufficiency. Good quality facilities, such as toilets, coffee shops, stalls, playground, shops, and vendors, are essential in improving social activities in any public space.

The investigation into social interaction and how users react in urban open spaces was underpinned by a review of theory in relation to the social life of public spaces on urban waterfronts in Chapter 2. In addition, social interaction, environmental psychology and the morphology of urban public spaces were examined. In order to explore the social life of public spaces it is necessary to understand the relationship between the public space as a setting and the people as users. Significant research on the subject of urban public spaces is first presented to explore the key features of successful public spaces from the perspective

of a people-based approach. This considers specific waterfront public spaces; although such spaces may share similar key qualities with public spaces in other locations, those on waterfronts tend to possess unique elements. The level of detail in the data collected is significant in comparison with previous studies based on the scale of the square from experts' and users' perceptions

Addressing three design aspects (social, functional and perceptual) provides the opportunity to understand how each can affect both social interactions and the use of transformed public spaces. The study's main contributions to existing knowledge are:

- Identifying different typologies of transformation of port cities and its public spaces, specifically in the Ottoman Empire and Alexandria.
- Uncovering the different roles of design attributes in the port city, urban space and waterfront.
- Understanding patterns of social interaction among users in transformed public spaces in Alexandria.
- Testing the existing assumptions regarding the impact of design on social interaction in transformed urban spaces in Alexandria.
- Testing the existing expectations regarding the impact of design on the reactions of users and Alexandria's residents to transformed public spaces.
- Developing new measures and indicators.

Transformation and change of public spaces in Mediterranean port cities						
Research Aim: To develop an assessment mechanism to evaluate public spaces in transformed port cities						
Key Research Questions: Do the physical features of Alexandria's Eastern Harbour squares offer an appropriate context for the range of users' activities, and Do these squares contribute to their users' satisfaction with the settings?						
Objectives (Why)	Questions	Data Collection (Tool)	Participants	Methods (How)	Expecting Outcome and Data Finding	
Ob.1 To identify the physical, socio-cultural, socio-economic, political and administrative aspects of transformation in port cities.	Q.1 What are the factors that determine the transformation of port cities in general?	Literature review and official documents (secondary data)	Researcher	Reviewing relevant books, articles, journals, conference papers, theses and websites on water and city relationships, the Mediterranean Basin and the evolution of the Ottoman Empire port cities.	A general understanding of the transformation of port cities, with a focus on the Ottoman Empire era, determining the aspects that transformed the port cities (city centre and public spaces) that will lead to learning in similar contexts, identifying issues from sample port cities and from this process to develop further understandings about Alexandria	
Ob.2 To explore the nature/type/influences of the growth of transformation in Alexandria.	Q.2 What are the factors that determine the transformation of Alexandria as a port city?	Literature review and official documents (secondary data)	Researcher	A literature review will be conducted on the origins of Alexandria's transformation as a city since its foundation, in terms of its urban population, the modernisation of the city, its internal migration, physical expansion and public spaces creation.	An understanding of Alexandria's transformation, and the importance of its city centre and public spaces on the Eastern Harbour	
Ob.3 To identify the attributes that affect users of waterfront public spaces, and develop a framework for the assessment	Q.3 What are the physical/morphological and socio-cultural attributes of public spaces on waterfronts regarding their facilities, uses (people-based approach) and sense of place?	Literature review and official documents (secondary data)	Researcher	Reviewing and exploring previous theories and frameworks concerning public spaces, the waterfront and the two phenomena considered together.	Identify the key issues of public spaces in port cities Leading to the preparation of a framework for analysis	
Ob.4 To develop a theoretical and methodological framework for assessing public spaces in transformed cities.	Q.4 What are the factors that should be considered in assessing the transformed urban public spaces?	Literature review and official documents (secondary data)	Researcher	Categorising the concepts learned from the literature review.	Producing an analytical framework	
Ob.5 To test the assessment mechanism on four selected spaces on the Eastern Harbour Crescent seafront of Alexandria, in order to evaluate the quality of the public spaces, and how responsive these spaces are for different users and understand the processes which generate and manage them	Q.5 To what degree do the current Eastern Harbour squares (in terms of physical features) set an appropriate context for users' diverse activities, from a professional perspective?	Impressionistic assessment (primary data)	A team of 10 Architects/Urban planners	Site visits to score presence, absence or degree of selected urban design aspects – recorded on score sheets. (Quantitative)	Explains the current situation in terms of public spaces.	
		Walking tour assessment (primary data)	A team of 10 Architects/Urban planners	Site visits to evaluate the degree of functional, social and perceptual attributes – recorded on score sheets. (Quantitative)	Final score based on weighting systems in the assessments	
		Observation and behavioural mapping (primary graphical techniques)	Researcher	Users' behavioural patterns. (Qualitative)	Understanding behavioural patterns	
	Q.6 To what degree are the current Eastern Harbour squares in terms of physical features set an appropriate context for users' diverse activities and satisfactory, from a user perspective?	Users' urban sense questionnaire (primary data)	Residents of Alexandria	Online close-ended questionnaire (Quantitative)	Users' perceptions of the case study spaces	
Ob. 6 To draw lessons from the Alexandria case study and recommend guiding principles to enhance and improve the existing and future development of public spaces in Alexandria and transformed port cities.	Q7. What improvements can be made to the planning and urban design systems in Alexandria to achieve appropriate transformed public space?	Visual preference survey (primary data)	Residents of Alexandria	Online close-ended questionnaire (Quantitative)	Users' perceptions of the case study spaces	
		Synthesis of the main findings.	Researcher		Highlight the weaknesses in the current public open spaces and their facilities processes.	
	Q8. What improvement tools can contribute to the better assessment of transformed public spaces in port cities?	Drawing lessons from the case studies			Recommendations to improve the public open spaces in Alexandria and other Mediterranean cities.	

Table 1-1 Tools matrix summary

1.5 Thesis Structure

This thesis is structured into the following eight chapters, as illustrated in Figure 1-1:

Chapter 1: Introduction This chapter includes the background, the research focus, significance and knowledge gap investigating the purposes for undertaking this study. It sets out the research aim, the key research questions, the objectives, methodology and outlines the structure of the thesis.

Chapter 2: Transformation of Port Cities and Alexandria The first part of this chapter explores literature that studies water - land combinations and the appearance of cities at the water's edge. Additionally, the terms 'waterfront', 'frontier', and 'edge', will be explored in terms of the ways in which they define an active element of the urban city form. The chapter analyses port-cities, which are a distinct type of city whose characters are arguably reflected on their waterfronts, based on their intensely physical and morphological settings. The second part of the chapter offers a review of early modern port cities. The third section in the chapter will review the Ottoman Empire's port cities (semi-colonial) and the aspects that influenced the rise and transformation of such cities.

And the final part: from **Alexandria as a Port City (Appendix A p.367)** This section provides a general overview of the context of Alexandria; it identifies the key morphological periods in the history of Alexandria in terms of the nature and characteristics of the urban space. Firstly, the historical background is reviewed through three periods: the Greco-Roman, Arab, Turkish, and Eighteenth Century to explore the physical expansion of the city and the deterioration and decline of particular eras. Secondly, the appendix explores the development of the urban population, its annual growth and internal migration. Additionally, the morphological transformation of Alexandria is discussed by examining the older districts of the early Nineteenth Century, followed by the period of early expansion, the various stages in public regulation, and the recent transformation to the present day. Finally, the current city centre is studied within the large urban area of Alexandria, including its services and leisure core and the transformation of its open public spaces.

Chapter 3: Theoretical Underpinnings This chapter reviews previous theories, frameworks and approaches to examine and analyse the urban public space. It provides a review of the body of knowledge, particularly scientific studies, concerning: public spaces, waterfronts and the two elements combined in terms of urban design, social behaviour, the quality of life in public spaces. It also determines key issues for public spaces in port cities, and provides an overview

of the qualities of a public space under the following key concerns: functional, social, and perceptual. It considers the nature of use, environmental conditions, comfort and relaxation, the social use of space, the diversity and social mix, safety and security, and environmental meaning. Following the outcomes of these reviews, the study then focuses on approaches to produce an analytical framework to evaluate the public spaces on Alexandria's Eastern Harbour through the establishment of key aspects identified in Chapter 4.

Chapter 4: Research Methodology This chapter introduces the analytical framework and research methodology employed in addressing the research objectives. It starts with a description of the strategic approach, which is followed by the method used and finally the techniques which been applied in the research utilising key transformed key transformed public spaces in the Alexandria as a case study.

Chapter 5: Case Studies from the Professionals' Perception This chapter firstly, presents the selected case studies of Alexandria's Eastern Harbour square by analysing data from the score sheets, it examines professionals' perceptions of the current situation of the selected public spaces using various criteria to form an impressionistic assessment (Urban Design Inventory). The professionals' perceptions of the selected are further examined by analysing data from the walking tour assessment sheet; this layer of evaluation includes an investigation of the functional, social and perceptual aspects of such spaces.

Chapter 6: Case Studies from the Users' Perception This chapter reviews the users' behaviours in the case study squares by analysing the data gathered from observations and behavioural mapping surveys. Next, the chapter discusses residents' perceptions of the selected public spaces by analysing data from the close-ended questionnaire. Finally, it summarises the multi-layered method results of each selected case study from chapter 5 and 6.

Chapter 7: Discussion of Findings. This chapter links the main findings from the data collection described in Chapter 5 and evaluates the quality of public spaces in Alexandria's waterfront according to their functional, social and spatial results. At first, it evaluates the efficiency and success of the case study, and then discusses the city's responsibilities. Finally, the chapter identifies general recommendations to improving such public spaces in Alexandria.

Chapter 8: Conclusion The final chapter will review the research, summarise the main findings and discuss the achievement of the research objectives. It will also consider the appropriateness of the methods and techniques for the tasks undertaken. Finally, some limitations are highlighted before opportunities for further research are identified.

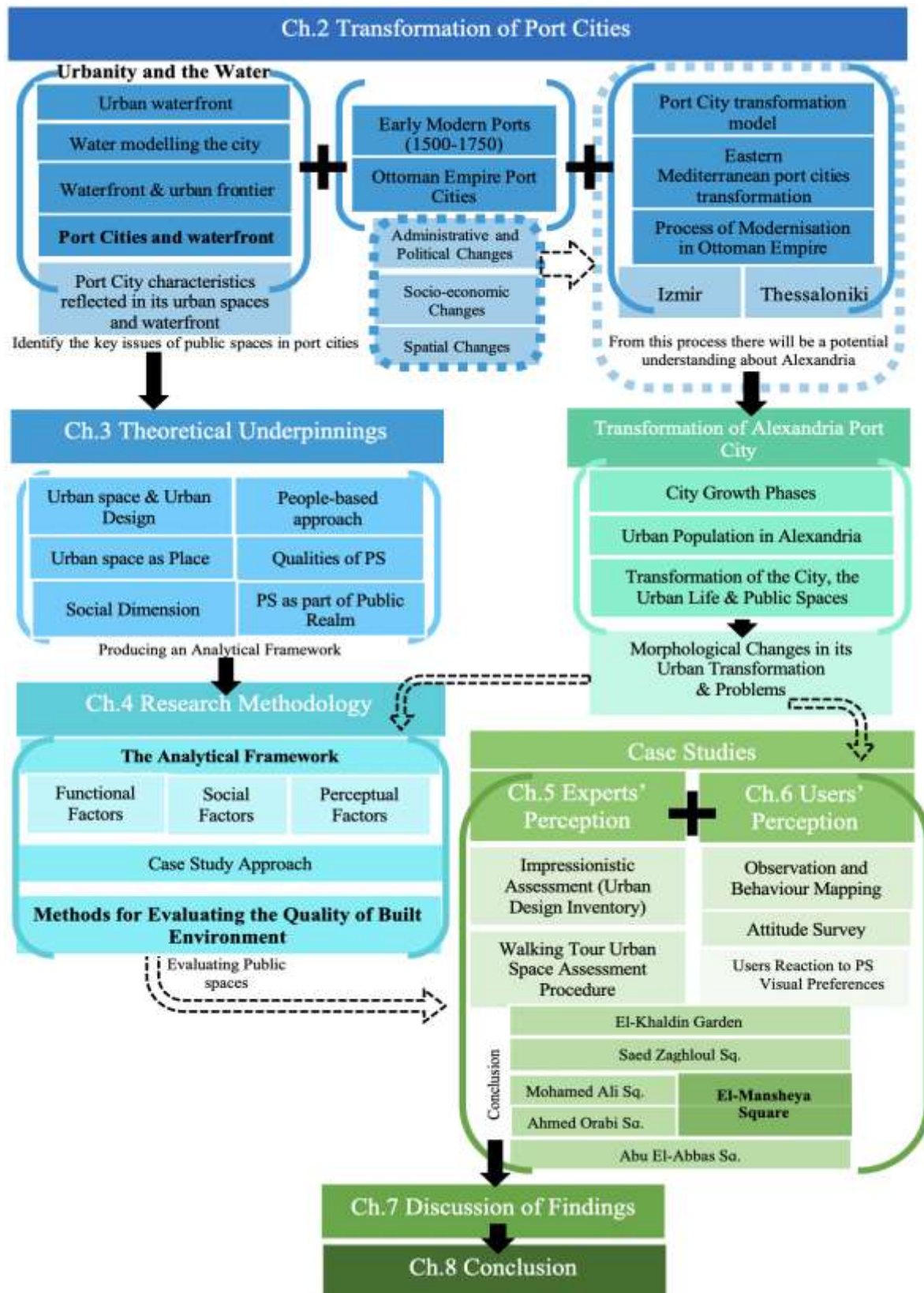


Figure 1-1 Thesis Structure

2. Transformation of Port Cities

2.1 Introduction

This chapter reviews the factors that determine the transformation of the port city in general in order to identify the physical, socio-cultural, socio-economic, political and administrative influences. The data is gathered through a review of relevant literature and official documents (secondary data), including books, articles, journals, theses and websites on the water and city relationship, the Mediterranean basin and the evolution of Ottoman Empire cities. There are two key intended outcomes from this chapter, namely to: firstly, identify the key issues of public spaces in port cities (this informs Chapter 3, on the theoretical underpinnings and the preparation of a framework to analyse the case studies) and secondly, to establish a general understanding of the transformation of port cities, with a focus on the Ottoman Empire era. Determining the aspects that transformed other port cities (city centre and public spaces) will lead to learning that is applicable to Alexandria, which is further examined in Appendix A (Alexandria as a port city) as illustrated in Figure 2-1.

The chapter is divided into three sections; the first will examine the water-land combination, and the appearance of a number of port cities. This section will particularly research the definition of the following terms: waterfront, frontier, and edge, which are active elements of the city's urban form. The section will also analyse a range of port-cities, which represent distinct types whose characters are arguably reflected on their waterfronts. This will only involve an examination of their physical characteristics and landscape features, and function help to demonstrate the distinct individualities of such ports.

The second section of the chapter will review early modern port cities, whilst the final section will review the Ottoman Empire port cities (semi-colonial) and the influences behind the rise and transformation of its port-cities. It will focus the 19th Century Ottoman Empire port cities that were subjected to the process of semi-colonisation which transformed their urban fabric and growth. This particular century has been selected as it represents a period when the modernisation efforts of the Ottoman state, under the influence of Europe, were at their peak. This section therefore analyses the effect of the European influence and the Tanzimat changes on the institutional and socio-economic structures of the cities in the context of trade relations and changing urban systems. Finally, the impact of the demands of the new classes concerning new institutions and urban spaces will be discussed and conclude the chapter. The framework outlining the structure of the chapter is presented in Figure 2-1.

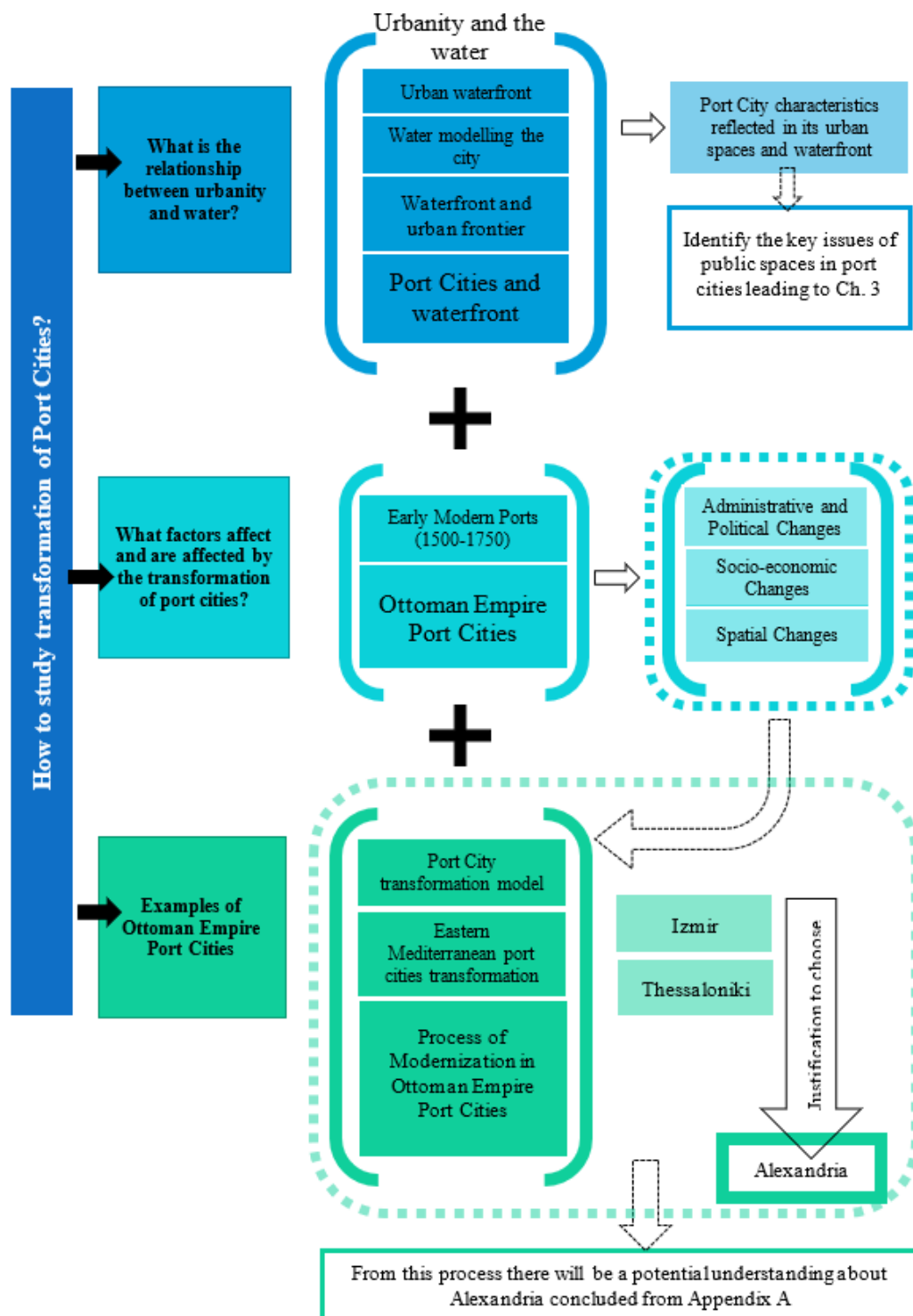


Figure 2-1 Chapter's Framework

2.2 Urbanity and the Water

This section highlights some significant periods and events that have shaped the city-water relationship, and to explain how these events affected the nature of the public space on waterfronts. Sections 2.2.1 to 2.5 are based on the history of the port city. Urban waterfront

redevelopment was not entirely limited to port cities, but rather found as a common feature in most places where settlement and water were co-located, regardless of whether commercial port activity was present. Waterfronts are generally vibrant places by nature, providing a superior environment, and overlapping different communities of users. They also represent dramatically different conditions, which can result in substantial complexity. In their connection to human history and use, waters' edges have a long history of shifting and changing forms and levels of use, and after a period of stasis they are, again, now becoming more productive and engaging public use (Konvitz, 1978, 1994, Hoyle, 1994).

2.2.1 Definitions of the Waterfront and Urban Waterfront

The meaning of "waterfront", according to the Oxford English Dictionary (2017) is as "*A part of a town or city alongside a body of water*". Meanwhile, Carr et al. (1992) defined the waterfront as a type of space that includes harbours, beaches and piers, whilst Bruttomesso (2004) considered it a special border type of urban zone that is both part of the city and in contact with a significant water body. However, according to Moretti (2008), the term means the urban area in direct contact with water, and the waterfront area is described by Hou (2009) as the joining area of water and land. Moreover, according to Yasin et al. (2010), it is defined as the field of interaction between urban development and the water. Moreover, Breen and Rigby (1994) consider that a waterfront and an urban waterfront are the same, whilst Morena (2011) classifies the water's edge as those in cities, towns or urban areas of all sizes. Thus, scholars use the terms port city, harbour front, water's edge, seaside, shore and littoral instead of waterfront.

2.2.2 The Influence of Water Modelling on the City

Three factors are important in forming cities; the first is the natural structure of the city, which includes the water and other natural resources, the second is the physical structure of the city, whilst the third is the city's social structure. These factors create a system within the city through their interactions with each other.

Throughout history, and from the very first residences of ancient civilisations, water (including rivers and the sea) was one of the most valuable natural resources that influenced the man. Water was not only a vital natural resource to generate life, but a tool for agricultural production, fishing, defence (due to location), transportation and recreation. Some of the ancient cities were dependent, and thus established, on water edges to establish the continuity, growth and development of their structure. Moreover, the limits and edge-borders of water controlled

the shape of the city. Indeed, (Detwyler, 1972, Deleuze, 1988) argue that there is a fascinating relationship between the city and the water borders, which are inter-dependant and influence each other.

The port city's urban form took shape and meaning from its characteristic combinations of water and land, land and city, centre and boundary. Conflicts arise between the water and land, and the influencing factors are varied, including exterior tensions, social actors' impacts and movements under which the city changes and transforms. The typography of such urban areas is water, which is a determinant of the urban form informing the natural selection of site, the foundation of settlements and the shaping of the urban form. According to Lynch (1960), topography is defined as "*an important element in reinforcing the strength of urban elements....*". Kostof (1992), stated that "*The particularity of the site and the way the settlement meets the water, give characteristic to the city form*". Figure 2-2 shows a characteristic river settlement and natural harbour.

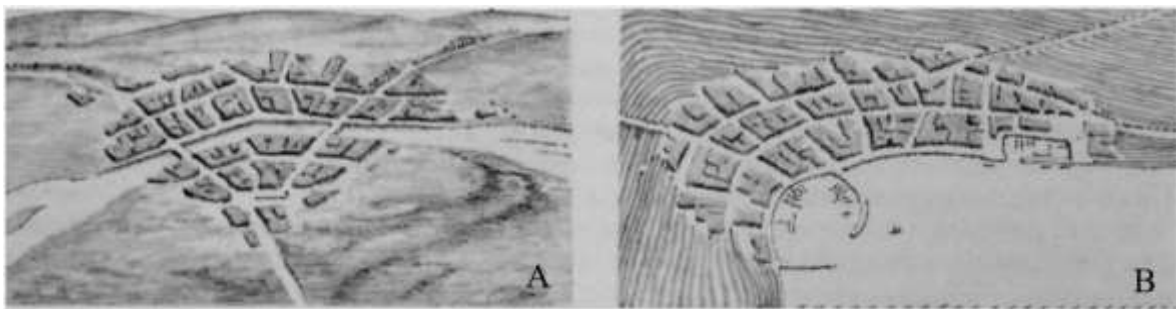


Figure 2-2 Topography as a determinant of urban form A) River settlement and B) Natural harbour city source: (Kostof and Tobias, 1999)

The water has a substantial effect on the city form, its urban pattern, and the environment of its inhabitants. Particular aspects of the water-city relationship involve the incorporation of one with the other, and the co-existence of the city, or any urban context, with water; this creates a bond between the two facets. However, challenges arise concerning urbanity and the life of cities; these represent the essential characteristic features of their existence and development; in port cities, one of these challenges is the waterfront.

2.2.3 Waterfront as the Urban Frontier

Thus, the city and water are two settings that continuously exchange their effects. Although it is clear that the water is the domainant element that affects the physical form of the city, the city, with its physical structure and social factors, influences the shaping of the water, particularly at the waterfront. Breen and Rigby (1994) describe the urban waterfront as a dynamic and vibrant area in cities and towns where land and water connect and intersect.

Bruttomesso (2004) defines the urban waterfront from the physical perspective as that squeezed between the urban fabric and the water. In comparison, Lynch (1960) states that the waterfront represents an edge or boundary between two phases, and over time span it not only defines the specific physical elements of the urban context, but also grows and sustains any transformation. Thus, the urban frontier is the space of contact between the two settings that acts as a boundary. The frontier is not only the city edge in the urban context, but also a procedure foundation, natural limit, defensive wall or custom's border. Thus, the connection between the city and its waterfront, sometimes called the urban frontier, is significant due to their mutual influences that manifests in their appearance, transformation and continuity.

Furthermore, Lefebvre (1992) introduced "spatial practice" which is the continuity of social, economic and political processes that influence the city. Nijenhuis (1991) argued that external tensions and actors involved in transformation processes give the city the quality of a social, cultural and morphological boundary that emphasises its sense and identity. The culture and identity of a society are arguably displayed on its waterfront spaces.

Humans have broadly used waterfronts for their utility in travel, trade, recreation, and general enjoyment. (Carr et al., 1992, Bruttomesso, 2004) The most attractive characteristic of the waterfront is its very nature; namely, the fact that a significant ribbon of the city is in contact with a body of water, which has an individual value and importance over other parts of the urban structure. Moreover, it demonstrates the qualities, values and characteristics for the presence of the port.

2.2.4 Port Cities' Waterfronts

Port cities' characteristics are the sense of place and urbanity that are created from their diversity and complexity. Soffer and Stern (1986) p.102 stated that, "*All ports, by definition, stand where land and water meet. Everyone stands at the end of the road or inland waterway...*" Thus, the port city is different from non-port cities due to its physical characteristics, and the fact that its main feature is the presence of water, which often functioned as protection from enemies by sea. Accessibility between the waterfront and the centre is a vital factor of a successful port city. Moreover, the port city's character is reflected in its urban spaces and waterfront. The city and its urban frontier experience transformation, development and urban dynamics, whilst the port cities' waterfront urban spaces, which form its border, are often where particular activities start; it defines its urban identity. Kostof (1992) stated;

“Aesthetically unified designs for seaports ran foul of the multiple activities that were dependent on access or proximity water. At best, one could dramatise or accent with architectural effects certain features of the waterfront, or else create landmarks on the skyline immediately behind the edge of the water to impress incoming vessels with an initial, striking picture.”

However, according to McEwen (1993) p.84 ports are populated by the “*shifty character of everyday representation*”. Ports are places where people repeatedly come and go, where urban fabrics are not known as understandable, and their inhabitants do not form stable communities. Nevertheless, port cities, in general, have reliable contact with economic and industrial development, as well as foreign influences and the social forces of mixed communities.

2.2.4.1 Historical Transformation of Port Cities’ Waterfront

Most cities on bodies of water also have ports; these tend to have long-established urban activities that are linked to their waterfronts. Such activities arose from the establishment of a vital and durable relationship between the city and the port. From ancient times, port cities continually adapted their waterfronts, which represented their maritime facade; this space stood for their opening onto the world of maritime commerce, which enabled them to enhance their economic position in trading terms. Thus, a port city's waterfront was traditionally its ‘commercial front door’. One of the important factors that broke the connection between the port’s functions and the city was the technological evolution of maritime transport, when development strategies were thus required to manage the relationship between city and port. Although Hoyle (1988) classified the historical evolution and development of the port-city relationship within six stages (illustrated as the circles in Figure 2-3), the transformation of a port could actually be considered in four main steps (indicated by the brackets in Figure 2-3).

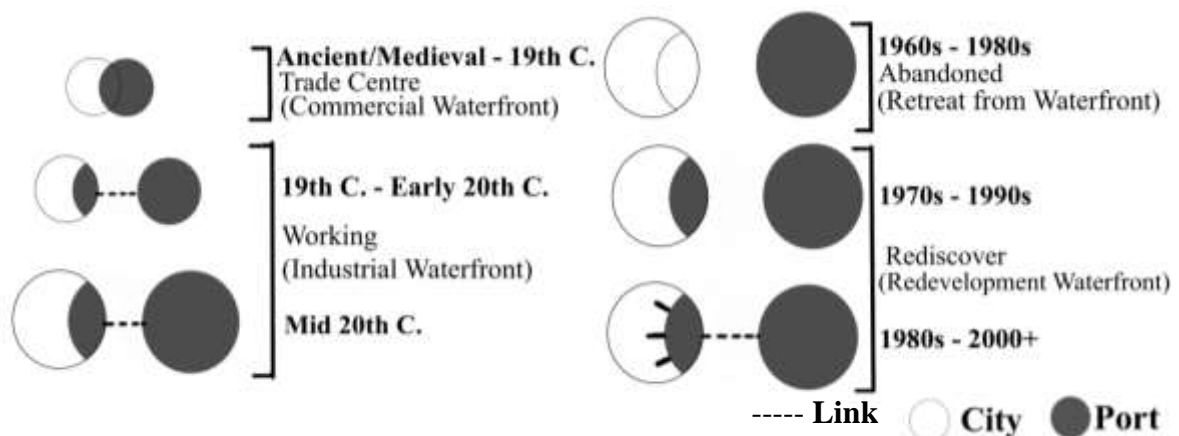


Figure 2-3 Port-City Relationship Transformation (Adapted from Hoyle (1988, (p.405))

Religious, knowledge-based and economic changes accompanied the first transformation stage in the port-city relationship, namely from the Ancient/Medieval period through to the 19th Century). These changes were influenced by a functional approach, which was largely dominated by the Industrial Revolution, and later the spread of capitalism, when port cities became known as the “commercial or trading city” (Mumford, 1961). The second stage started in the 19th Century and continued until the mid-20th Century; this change was triggered by rapid commercial and industrial growth that was motivated by the invention of the steam engine during the Industrial Revolution. In this period, most of the ports in major port cities changed in scale, and other uses were introduced along the waterfront. Although this period is generally considered to represent the closest socioeconomic relationship between the port and its city, this was not reflected in the physical arrangement of the port city, which remained informally accessed from adjacent urban areas (Kostof, 1992). The third stage, namely from 1960s to 1980s, is known as the “abandonment” of, or retreat from, the waterfront, when the role of ports gradually weakened due to the increased use of rail and airline transportation (Tunbridge, 1988). As a result, between the 1960s and 1980s, ports and cities went their separate ways in terms of both their respective physical and socio-economic development. The final stage starts from the 1980s and sees the rediscovery and redevelopment of waterfronts, which start to represent the cure for the socio-economic, environmental and spatial issues of many port cities. Thus, the continuing redevelopment of the waterfront sees it return, in a broad sense, to the core element of life in an active, growing port city.

This classification of the port-city waterfront enables an overall perspective of its historical transformation and establishes a background from which to better understand the developments that have occurred on the port city interface of Alexandria. Additionally, it offers the possibility of comparison between similar geographies, particularly for the city of Alexandria which developed within the Mediterranean basin amongst other competing port-cities.

2.2.4.2 The Mediterranean Port Cities and its Waterfront

Through a shared history and evolution, the social and spatial transformation of Mediterranean port cities are both similar to each other and different from cities exterior to the Mediterranean Sea. Mediterranean port cities emerged as importance spaces during ancient times, from which their fortunes and development broadly flourished. For example, Braudel (1995) stated that, during the age of Philip II, *“In the Mediterranean, the great cities were all near the sea, the greatest route to all; inland they were less frequent being served only by the overland roads, which carried less traffic...”*.

Nevertheless, the relationship between water and cities in the Mediterranean basin was both intimate and complex. The Mediterranean port was well linked to the city creating its centre through its the social life and activities; moreover, such cities and their ports were significantly connected throughout history (Mumford, 1961). Similarities therefore exist between Mediterranean port cities' physical and morphological features, and the spatial transformation of their waterfronts, including their use, life and urbanity. The majority have a panoramic city that spreads around a curved harbour, whilst the landscaping of each port retains its individuality but remains firmly connected to the city core. Nevertheless, during their transformation these elements were combined to increase the differences in the port area of maritime cities.

2.3 Early Modern Ports (1500-1750)

Since ancient time, ports have been gateways for the exchange of goods, people and ideas (Braudel, 1975, 1985); therefore, they represented the primary transportation for transactions. The sea has been a link between countries and ports providing a connecting bridge between different cultures. From the Ancient Greeks, passing through the Roman, Arab and Ottoman empires, the Mediterranean Sea has been the focal area on maps as a centre that held everything around it in place, and as a powerful connecting influence (see Figure 2-4 for representative maps of this era).

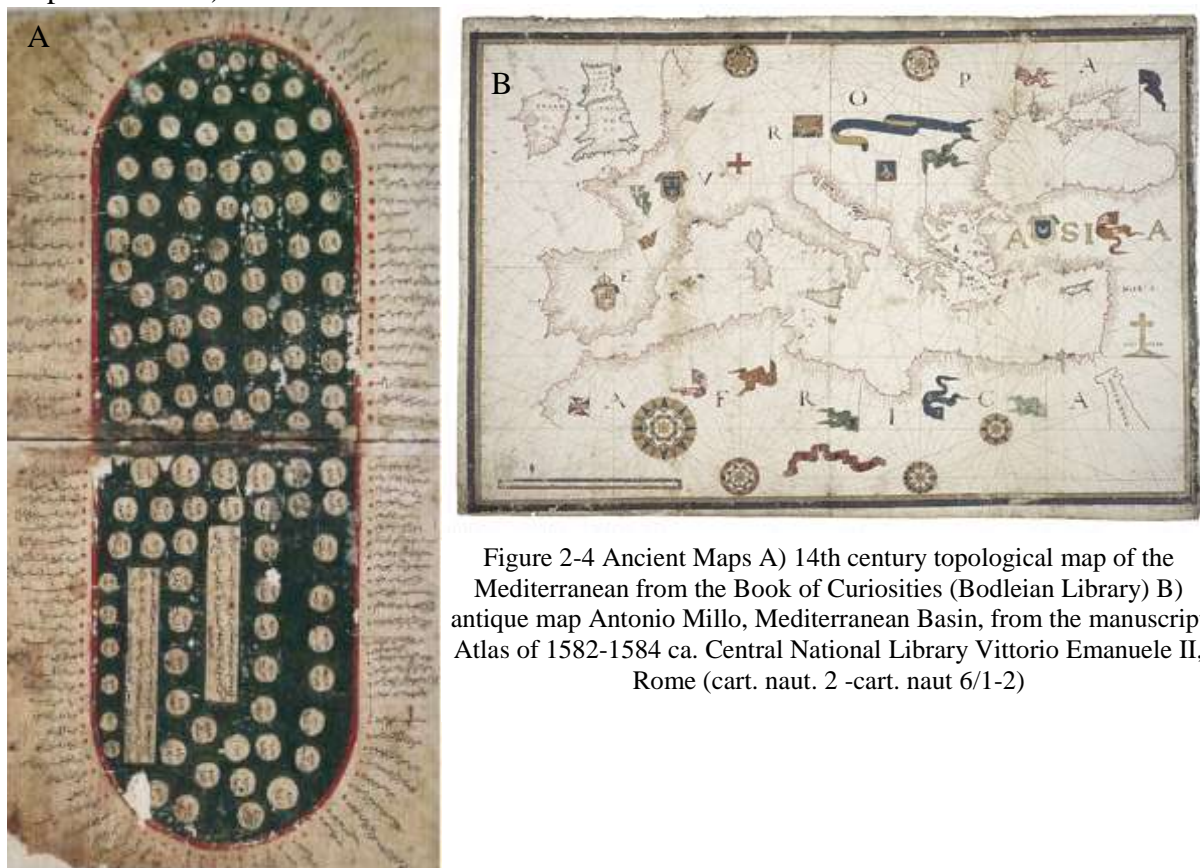


Figure 2-4 Ancient Maps A) 14th century topological map of the Mediterranean from the Book of Curiosities (Bodleian Library) B) antique map Antonio Millo, Mediterranean Basin, from the manuscript Atlas of 1582-1584 ca. Central National Library Vittorio Emanuele II, Rome (cart. naut. 2 -cart. naut 6/1-2)

Ports had a role, not only in bringing communities closer, but in their significant functions that were characteristic of their location and position as links to the sea and connections between different political powers and civilisations. The trades at the time settled in such cities establishing their contribution to world history by shaping universal connections. Between the Late Medieval and Renaissance periods, European ports located on the Mediterranean Sea established their political, socio-economic and cultural role which broadly continues today, as they remain focal nodes for global interactions. Thus, this section highlights three main concepts that form a framework within which historians have considered ports and their influence and role in history, namely as ports, frontiers and regions.

2.3.1 Administrative and Political Changes

Not all early modern ports were growing, even though most were wealthy as urban environments. There were two possibilities for the success of ports; this could either be achieved by force, by taking chances outside the traditional informal hinterland systems, or by gaining a competitive position among the upper classes at the regional level. For example, the success of ports, such as Lisbon, Cadiz and Venice, owed their status to the central role they played in the broader movement of development overseas. Moreover, they became centres of the known world before the mid-16th Century due to the context they provided for the exchange of new merchandise, culture and knowledge that developed in regions beyond their traditional informal systems. Their successful development was determined by their conquests abroad, which fed their wealth. However, despite their expansion and achievements overseas, they were poor centres of regional networks compared to other contemporary ports from northern and southern Europe. In contrast, these ports were willing to support their central state to enlarge its influence overseas; they became an instrument of political force during this period. Thus, many Renaissance and early modern ports were required to seek partners within Europe due to their weaknesses and their lack of steady regional hinterlands which would otherwise enable them to survive as centres of trade and connection. Moreover, the choice of partners were particularly focused on smaller local ports with effective hinterland connections, and the process for partnering followed the waves of diplomatic exchange and political agreement (Antunes, 2004, Antunes and Fatah-Black, 2016).

Moreover, most northern European ports had to compete with local participants to qualify for engagement with a major southern European partner. However, this regional competition conflicted with the development of southern European ports that were powered by their complementary advantages to partners. One of the Northern European port mechanisms used

to attract connections with potential southern port partners was to create a set of rights and treaties for the trade in people, products and ideas, or to found manufacturing plants and industries. Thus, through these mechanisms, Northern European ports became centres of ownership practices which controlled the formal and informal transaction networks of merchandise, people and ideas (Antunes and Sicking, 2007, Antunes, 2010, Antunes and Fatah-Black, 2016).

2.3.2 Socio-Economic Changes and Transactions

During the early modern period, various transactions reflected the multifunctional character of ports; however, those whose urban environments provided the context for operations and trades were considered gateways. Although the transaction of goods and materials were the primary role of ports trading at that time, they also functioned as stock exchanges, shipbuilding, and provided various supporting services for trade and business. For example, the position of the port city in trading networks meant it provided a gateway for the development and sale of products. Thus, some ports were vital centres of global transactions, such as Lisbon and Venice, whilst others, such as London and Amsterdam, grew from regional into global intercontinental powers that linked both established European trading networks and new routes (Antunes, 2004).

The source of information for the early modern period was mainly the people who travelled between the ports, who transferred and spread information and whose views could influence a port's favour amongst other towns. Consequently, news could travel relatively fast in most ports due to their environment, which that functioned as an attraction for individuals, particularly immigrants, who were attracted by the potential for work. Most information flow between ports was commercially-based and related to trades; however, ports also represented the opportunity to exchange of new political concepts, different religious ideas, and technological developments.

Moreover, most European ports demanded an extensive labour force due to the spread of services, manufacturing and military activities. Ports attracted massive numbers of immigrants from the hinterlands, their wider regions and from overseas due to the availability of work, which often paid higher wages than in towns. Therefore, the social structure of ports was significantly influenced by urban migration, and meant they became an open field of religious and cultural exchange, and social interaction. However, some European ports traded in slaves from the west coast of Africa who were forced into migration against their will, whilst other groups left their towns for port cities due to religious discrimination (Antunes, 2010). A number of these migrants escaped to European ports, such as London and Amsterdam, where, for more

than 350 years, they had a substantial influence on the social, cultural and economic life of the ports (De Vries, 2013). However, early modern migration was not always successful for all migrants; for example, more vulnerable members of the population who were less able to secure work and did not have a traditional family framework, such as single women or widows and orphans, could become victims to the challenges posed by poverty. During the 17th and the 18th Centuries, those in need of income who could not work were forced into robbery and pick-pocketing, and the females into prostitution (Antunes, 2010). Moreover, port cities became shelters for local and foreign scholars, priests and vendors who were obliged to flee their homes for their beliefs, faith or politics. As a result, one of the key identities of a port city was the acceptance and tolerance amongst inhabitants, who lived alongside each other despite diverse religious, cultural and social values.

However, one of the significant characteristics of the ports was their overpopulation due to the number of immigrants. Nevertheless, port cities were often better able to survive public health problems than other towns due to their growth outside of traditional walls and borders and excluding the manufactures and industrial buildings from the city wall or near the city centre to create a public health regulation. However, controlled gate access and public health regulations did not save the ports when threats came via the sea. The constant risk of foreign ships with sick crews and infected or spoiled products or who were sometimes unaware of such health issue left a trail of viruses and plagues that could spread widely throughout the city due to its overpopulation. These contacts were known as negative transactions.

Although by moving away, such risks could be avoided, this option was generally only available to the wealthy, or those healthy enough to leave. For those who could not move away, city councils were regulated to make food and water available and to bury their dead as soon as possible through their religious institutions. Western European city councils activated a set of Roman laws as measures to enforce when ships came from infected areas or when the crew had been hit by a disease; this helped to manage or avoid some of the disorder, chaos and economic losses that tended to ensue following widespread infection. This set of laws gave city councils the right to separate and judge the ships and crews that came from specific ports or who were involved with particularly risky areas. Moreover, some ports were placed under temporary bans until the threat had passed. The ban was used as a solution to stop the spread of plagues, although sometimes it was abused for political purposes to control a city's economics and defeat its competitors.

Trade and manufacturing activities developed the idea of a community and society, which related to economic power and port cities, through the opportunities they represented. They became areas that encouraged diversity and maintained political independence. Thus, the main function of European ports was their capability to create and develop a wide range of trades; moreover, they were gateways that enabled the development of a competitive European network (Antunes and Sicking, 2007).

2.3.3 Spatial Changes

‘Port’ was a general title given to towns and cities where trade was their main activity and where they were located next to a body of water. Therefore, as trading and markets were the nuclear activities of a port city, they would usually be controlled and planned by the government and civil authorities. The concept of the port continued from the previous phase through the early modern period. The urban structure of the city would also indicate whether a location was a port, as its centre was the harbour that saw the movement of people and products. Moreover, its urban morphology had particular notable spaces, such as harbours, open markets, waterfronts, and individual buildings, for customs and warehouses that influenced the look of the city. Finally, its socio-economic groups tended to be more distinguished by the number of foreigners, merchants, bankers than others towns and cities (Broeze, 1985, Sacks and Lynch, 2000).

While the direct link between sea and ports provided a vital urban structure, early modern ports’ hinterlands were also part of the urban structure because the city/town controlled it. During the early modern period, the hinterlands were influenced by the port; however, according to the early modern maritime and urban historians, such areas developed informally. Nevertheless, the hinterlands represented the level of influence between a port and its surrounding space, which could include areas of trade, migration and cultural exchange. Furthermore, there was some debate that the character of the hinterlands extended across continents - coast to coast - although this occurred mainly when European ports were investing into overseas activities (Aerts and Clark, 1990, Ringrose, 1990, Gillespie, 1990).

Two theories, developed by Hohenberg and Lees (2009), are usually considered when examining the development and placement of ports in a historical context. Firstly, the central place theory identifies towns as trading centres that not only functioned as commercial markets but also as service providers. The diverse and extensive services enabled towns to develop into regional cities. However, the hierarchy system was not efficient in this theory due to the

dependence on the services provided by the cities and towns; this also applies to economic, administrative and cultural factors. This implies that there must be a certain degree of support between towns and ports. However, Hohenberg and Lees (2009) noted that cities needed to be analysed according to their function and by their links to other urban areas rather than just their geographical location. They assumed that ports in the early modern period were better related to their hinterlands and their urban allies; they came under the hinterlands' formal and/or informal power depending on the amount they produced, their potential for urban connection, and ability to service needs.

The second (network) theory suggested that urban connections and needs increased with the growth of the network of connected ports. These close relationships enabled easier economic, social and cultural distribution. This started with the transaction of materials and products, but later included migrants, ideas, technological developments and information, which contributed to the complexity of the port/hinterland network system. The interactions between the ports and their urban allies in the direct hinterland and regional networks gave them their international function. At that period, ports continued to have different roles, as not all were large or international gateways. Indeed, some provided a social, economic and cultural function for a stable government that needed contact around the globe. Other ports were used as defenders of local borders where the struggle between opposing central government left them unprotected. However, a port's most important role was still as a gateway, and most large cities were ports engaged in the movement of European growth overseas (Christaller and Baskin, 1966, Vance, 1970, Burghardt, 1971, Parr, 1980, Antunes and Sicking, 2007, Munro, 2008, Hohenberg and Lees, 2009).

2.4 Ottoman Empire Port Cities

Due the development of colonialism between the 18th and 20th Centuries, the urban pattern of cities changed on waterfront areas. Alongside changes in trade, port cities witnessed further urban growth and development. During the 19th Century, the course of trade changed direction from inland exchange centres to port exchange centres; furthermore, the Ottoman Empire experienced this shift in the urban pattern. At the same time as the port city emerged, grew and gained in importance, central cities tended to remain static. Port cities thus experienced urban transformation and growth, which left European imprints and had local impacts that led to changes in the socio-economic structures in ports (Tekeli, 1971).

In the process of occupation and semi-colonisation, port cities across many regions of the world functioned as points of economic and social change. The Middle East and North Africa noted a similar process of occupation and semi-colonisation by the 19th and 20th Centuries. The port cities of the Ottoman Empire, such as Izmir, Thessaloniki and Alexandria, attracted substantial European migrants who engaged in trade and political activity. All three cities grew mainly due to European interest in the markets of the Ottoman Empire (Ágoston and Masters, 2010, Abu-Lughod, 1980). Moreover, in representing windows to the West, port cities continued to act as a magnet for immigrants. Meanwhile, European societies in port cities became key actors in the development of a port's social, cultural, political and economic exchange. The population of port cities increased from inland cities due to new economic developments and the movement of populations.

Besides changing economic and political situations, the development of new technologies also affected ports. The main ports were controlled by Europe due to the innovative facilities they brought, which included steam and steel in shipping and railroads. Some port cities were promoted to a higher status in the established hierarchy and became significant gathering points for sea and rail routes while others were demoted due to their comparatively diminished function (Abu-Lughod, 1980).

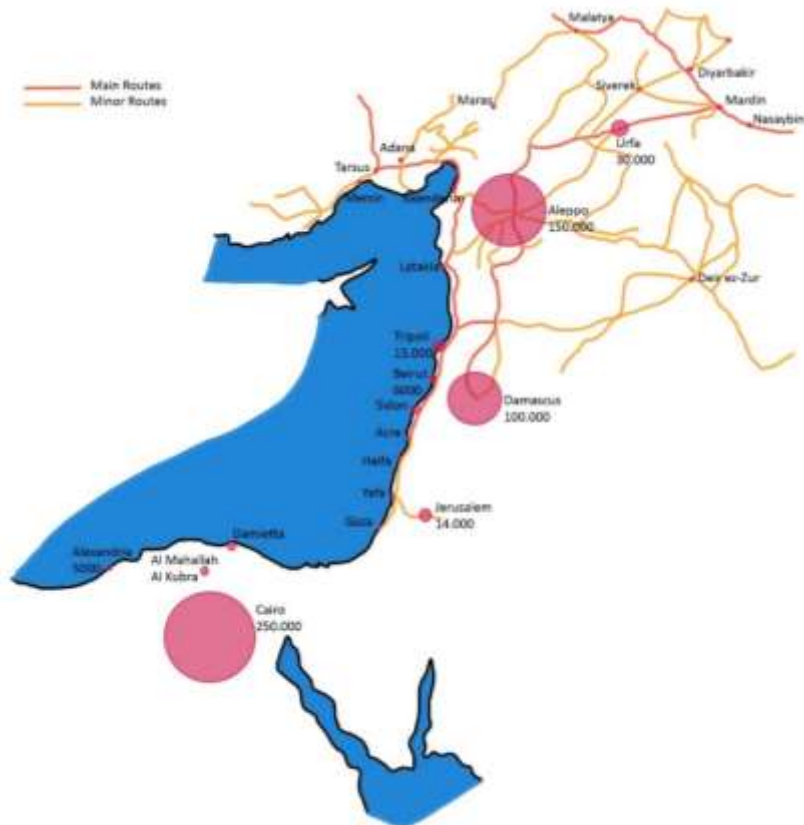
Due to the demand from the growing European population, port cities established new educational, financial and cultural services, which included banks, telegraph lines, railroads, health centres, new business houses and institutions. They established schools, hospitals, factories, newspapers and companies, which were controlled by Europeans, and led to new opportunities in many port cities. The European imprint influenced the local who adapted their activities, dress, cultural habits, architecture and public spaces. Moreover, these overall changes affected the urban pattern of the regions. Thus, by the end of the 18th Century, some port cities had grown because they were controlled by European powers or had become establishments for Western trading (Issawi, 2010).

Therefore, a significant amount of European economic and political powers were focused on ports. For example, at the beginning of the 19th Century, populations tended to be concentrated on inland capital cities, such as Cairo, Damascus and Baghdad. However, towards the end of the Century, the population distribution of cities and their sizes changed to grow port cities, such as Alexandria, Beirut and Basra, who became the main city in their respective urban hierarchies (Figure 2-5). As an example, Alexandria and Beirut have similar characteristics as they both served a significant inland city, namely Cairo and Damascus, respectively; the ports

later became the more dominant cities. By the beginning of the 19th Century, the population of Alexandria was 5,000, and the population of Beirut was 6,000~7,000, but by the end of the Century, Alexandria's populations reached 319,766~320,000 and Beirut over 100,000 (Issawi, 2013). Following the British occupation of Egypt, the port of Alexandria increased its importance by becoming heavily involved in Egyptian cotton export. This trade contributed to the growth of the city, which became a sizable cosmopolitan 19th Century port. Thus, by the end of the century, the population of Alexandria was a cosmopolitan mix (Ágoston and Masters, 2010).

Middle Eastern ports were divided into four groups by McPherson (2002); the first included the ports that had opulent surroundings and were the main economic and political centres in their region; this included Alexandria. The second group contained the ports that acted as a transit, or rest, point for ships on long distance cruises, and this included Port Said. The third group included the ports that mainly served their surroundings without being the centre of economic or political life, and this included Basra. The last group functioned as a combination of the first two groups combined; namely, ports that served their surroundings, that became the centre of European political or military power, and served as a transit point. Moreover, McPherson (2002) noted that Alexandria's sizeable non-Arab population, included all categories of trades, also involving artists, and military and government persons.

1800



1880

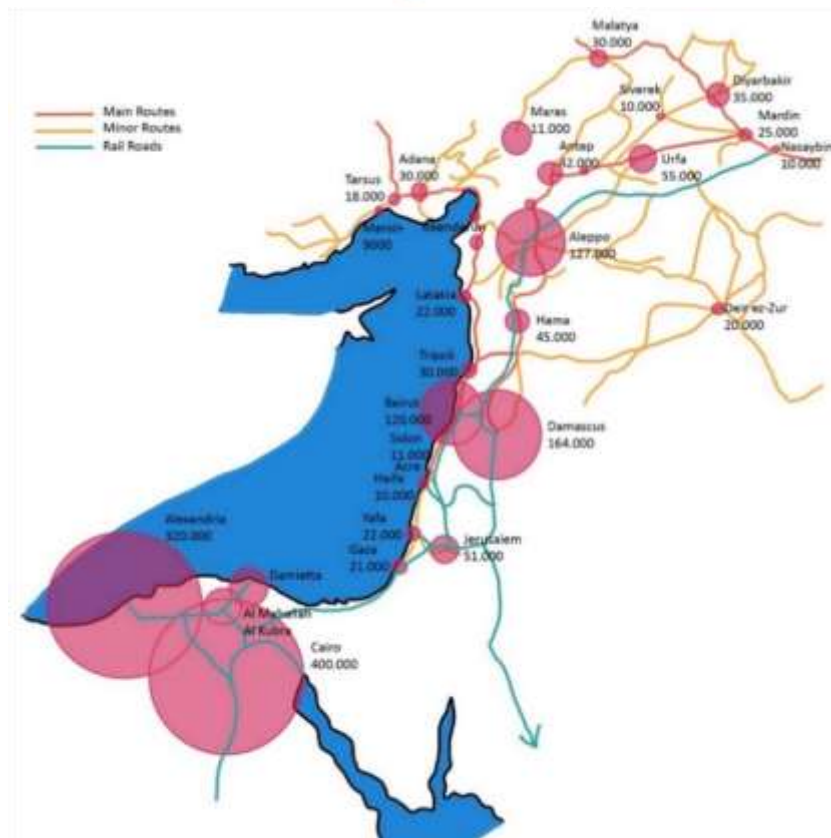


Figure 2-5 The changing urban progression in Inland and Port cities in the 19th Century with the correlation of the population of the cities. (Source: By author)

1800 data collected from the following: Gibb and Brown, 1950, p.280-281; Issawi, 1969, p.102-103; Issawi, 1982, p.101

1880 based on the following: Cuinet, V. 1894. La Turquie d'Asie. Vol. 2 and 3. Paris: Ernest Leroux; Cuinet, V. 1896. Syrie, Liban et Palestine. Paris: Ernest Leroux; McCarthy, J.A. 1970. 19th Century Egyptian

2.4.1 Administrative and Political Changes

The following five administrative and political aspects are noted for their impact on the creation and change of urban spaces. Firstly, in the Ottoman Empire, the Tanzimat Changes were issued by the legislature to support domain controls; this was in response to the increasing impact of European settlement and control. The second aspect was urban life's guidelines and controls. The third aspect was a consequence of the adjustments in the regulatory framework from the impact of the Tanzimat changes and European power; this involved the establishment of municipalities. While the administration attempted to apply their guidelines and controls within their urban communities, the European impact was more grounded in the Balkans, and the Eastern Mediterranean rather than Anatolia (illustrated in Figure. 2-6). The final aspect was the European effect, which included expansionism in the Eastern Mediterranean district of the realm, and the impact of foreign rule on urban areas and the transformation of port cities.



Figure 2-6 The Ottoman Empire's regions. (Source: By author)

2.4.1.1 Tanzimat Changes and Expanding European Impact

The impact of European countries on local powers saw the beginning of the move toward the Tanzimat changes. European countries expected to secure a favourable position when the Ottoman Empire joined the open market in the 19th Century. Therefore, with the establishment of the commercial exchange conventions in 1838, European countries began to dominate. However, they needed to ensure their dominance and that the advantages they had gained would

endure; as such, they empowered and guided the change process that the Ottoman Empire would begin to make during the period.

The rebellions in distant parts of the Empire over that period accelerated the change procedure and influenced the government to apply new standards and controls to support the administration of the realm by expanding the power of the central government offices over the local forces. At this stage, all aspects of the social field were covered by the Tanzimat reforms' rules and regulations (Shaw and Shaw, 1977). The regulations and laws, which had an impact on ports' urban transformations, and are thus further explored later in this study.

The security of life, respect and the property of Ottoman citizens were at the core of the changes introduced by the Tanzimat reform. These could be determined as follows: equality between all citizens by eliminating the different treatment of Muslims and non-Muslims, the approval of private possession, the presentation of the civil rights framework through the toleration of a legal mechanism, besides *Shariah* law, and the introduction of a European rights system with the emergence of the concept of law. Moreover, it also meant the function of the new frameworks of land tenancy and the utilisation of the new regulatory framework with the new foundations (Shaw and Shaw, 2002).

While the Ottoman administration attempted to reinforce its control and power, European impacts and purposes were also involved with these changes. Equality in society meant they were similarly treated as non-Muslims citizens of the Empire, and consequently, they gained an advantage through the expanding interests of European power in the commercial exchange system. As a result, the economic structure became dependent on non-Muslims, particularly in the Empire's port cities. They became operators of foreign corporations contracting business in the cities due to their social and cultural resemblance with European traders and their dialect; this enabled them to communicate with local dealers.

Non-Muslim communities in the Empire start to shift when the European impact became powerful, and the Ottoman administration became weaker. The most potent factor of European control was established in 1881 namely the control of Ottoman finances; this was known as the Ottoman Public Debt Administration. The Ottoman Bank served as the financial institution of the Ottoman Public Debt (Kasaba et al., 1986). These organisations enabled significant development and change in the Empire through infrastructure investment, and the improvement of correspondence, communication and transportation systems. Thus, due to the need amongst

European to retain control over strategic and regional decision making, and the Ottoman Empire's need for productive and efficient administration, the Tanzimat changes proposed more than administrative changes.

Moreover, the Tanzimat period adopted two keywords strategies; European modernisation (Westernisation) and reform. These two words suggested the presence of respectable, founded institutional models with the endorsement of European social, political and financial experience. By the 19th Century, the Ottoman elite admitted the need to better order the Empire by creating an ideal society through control and organisation (Shaw and Shaw, 2002).

2.4.1.2 Tanzimat's Regulations and Laws Affecting Urban Transformation

In 1848, the first building regulation was authorised and in 1849 another was issued. Between the two regulations the Building Manifest was issued, which stated that it was essential to officially announce the perspectives of the Buildings Council, which related to the quality, degree of strength and durability of structures built. The Manifest was critical because it contained detailed technical information on the principles and rules that should be followed during construction, and on the type of material that should be utilised. Both the regulations and the Manifest were only issued for Istanbul. Nevertheless, in 1864, the first regulation was issued for application to all cities in the Empire. Moreover, at the same time, the Street and Buildings Regulation was founded, which had significantly more material and quantity than the previous version. While the core concern in issuing the first buildings regulation was the avoidance of fire, in the later Streets and Building Regulations, there were efforts to determine rules concerning the creation of the urban form.

These rules remained in effect for twenty years with no change. (Selman, 1982, Sevin, 2017). These regulations and laws aimed to find solutions for the Ottoman Empire's cities. The laws were proposed and issued according to the problems faced by 19th-Century Ottoman cities and particularly concerned the orientation and width of streets, the settlement problems of a growing urban population and destruction by fire. Moreover, the regulations specified the height of the buildings, the window cornices, and the thresholds. Furthermore, it banned any projecting parts to the street, such as stairs, fences, and basement windows (Tekeli, 1971). Maps were prepared in accordance with the new regulation and laws, as well as the construction of gardens, and for the foundation of new quarters on vacant lands. In 1882, a new building law (1877 Province

Municipality Law), more comprehensive than the previous regulations, was issued and legislated by the development of municipalities in the Ottoman Empire's cities; this concerned urban development activities (Tekeli, 1971). These regulations advocated a significant change through the application and management of activities that would be carried out by local instead of central administration (Selman, 1982). Moreover, it was recommended that the municipalities prepared maps showing the streets that would be opened and their surroundings, and to publish them publicly for renovation. Designing the new dead-end street (cul-de-sac) was firmly banned, the widths of the streets and roads were categorised into five categories, the building heights, the outdoor properties of the buildings and fire safety measures were stated in building laws. (Tekeli, 1971)

The model administrative system of the Ottoman elites was only applied in Istanbul during the Tanzimat period while in areas distant from the capital, local traditional administration systems continued to be applied (Gerber, 1994). This variation between the centre and the cities was also witnessed in urban planning activities and development. Although the urban planning regulations accepted for Istanbul were considered for other cities of the Empire, this did not occur until the implementation of building and street regulations (Uluengin and Turan, 2005). Firstly, the regulations concerned the renovation of the existing urban fabric due to natural disasters (mainly fires); the administrators who assisted in these renovation activities were held responsible for fires in the old city centres. Secondly, they concerned the responsibilities of local administrators and municipalities who were in charge of renovating the urban area and infrastructure. The central Ottoman government, its local administrators, European citizens, and non-Muslim merchants were associated with the application of these new reforms in cities (Yerasimos, 2006).

One of the most important laws of the Tanzimat period was the 1858 Land Code. It addressed the concept of "ownership" that accompanied the Tanzimat changes. As a consequence of the Land Code, the recognition of the right of foreigners to own land was issued in 1869 by European powers who wanted to purchase land as investments (Aktüre, 1981). Property owners became members of the developing new classes and, with their associations and new organisations, they had influence on the urban form. With recognition of private ownership, the new demands of these classes emerged in the urban form. Mortgages and insurance functions also brought the need for a cadastral order through a property recording system. Among other requirements, this confirmed the establishment of new organisations, such as the municipalities.

2.4.1.3 Foundation of Municipalities and the City Councils

The application of the new models of urban planning in the Mediterranean was just part of the European modernisation process in the Ottoman Empire. Ottoman cities changed according to European models, and this triggered the development of the Tanzimat reforms, which developed in two directions. Firstly, reform occurred with central and local administrators and secondly, changes were made through the services of municipalities. These organisations were the primary institutions of the Ottoman government within European modernisation development, as the government wanted to use its officials. The municipalities were introduced to the process by the power of foreign staff members and local non-Muslim merchants who decided the area in which they were to live. More financial opportunities were given to local administrators than municipalities with the aim of making local administrators more powerful in the decision-making and implementation process. As such, municipalities were left without financial allowances and could only fund the services of lightning, waste dumping and pavement works. Therefore, municipalities mostly survived in cities for public works. However, on the other hand, the changing of province governors once a year prevented central government from gaining more power. In the Eastern Mediterranean, and with European involvement, cities faced a change in the administrative positions of their cities, and the decisions of the municipalities were affected by the new European members who were appointed to key positions (Yerasimos, 2006).

The first municipality was formed in Istanbul in 1857; although there were similar efforts in Alexandria at the same time, the regular municipality was created in 1882 through the support of English administrators. The municipality of Beirut was established in 1863, Damascus in 1864, Cairo in 1867 and Izmir was established in 1868 (Yerasimos, 2006). Accordingly, the first acts were taken mainly in the port cities. In these port cities, existing institutions did not address the basic needs of foreign merchants. Quarantines and hotels in particular needed improved sanitary conditions, and new transportation systems were similarly required. Thus, the institution of a municipality that assumed responsibility for these requirements was first established in the port cities (Ortayli, 2000).

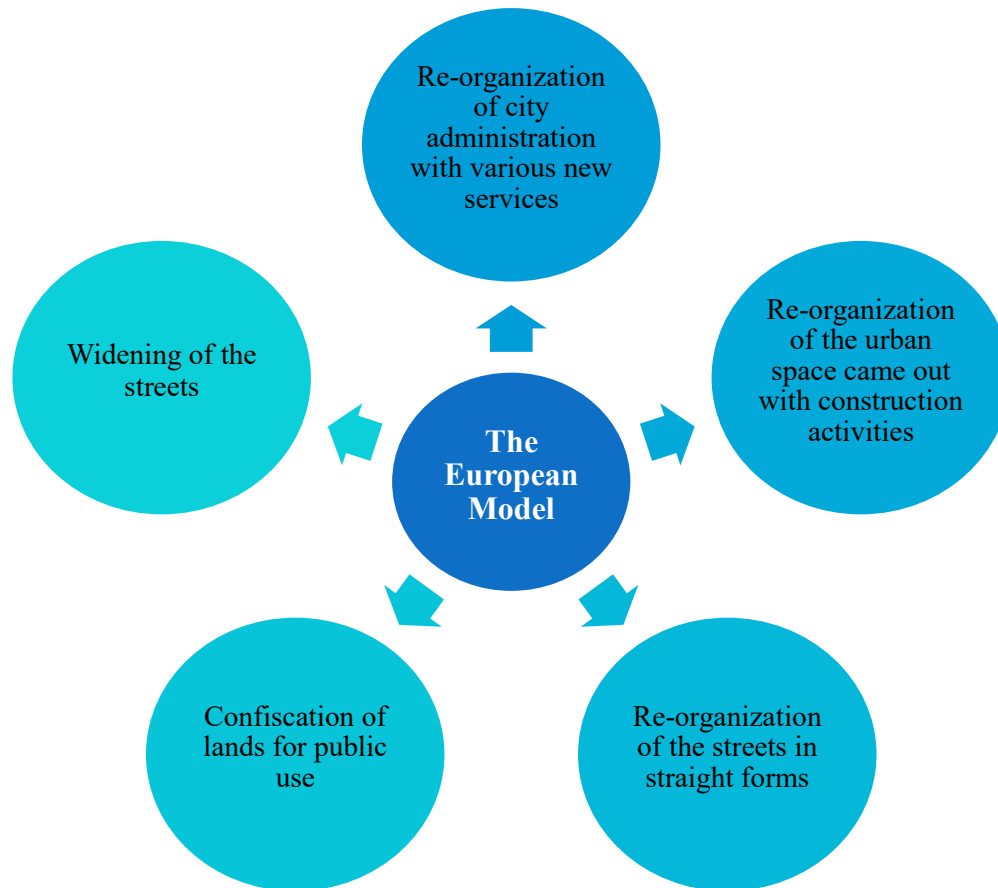


Figure 2-7 The European Model that affected the transformation of port cities. (Source: By author)

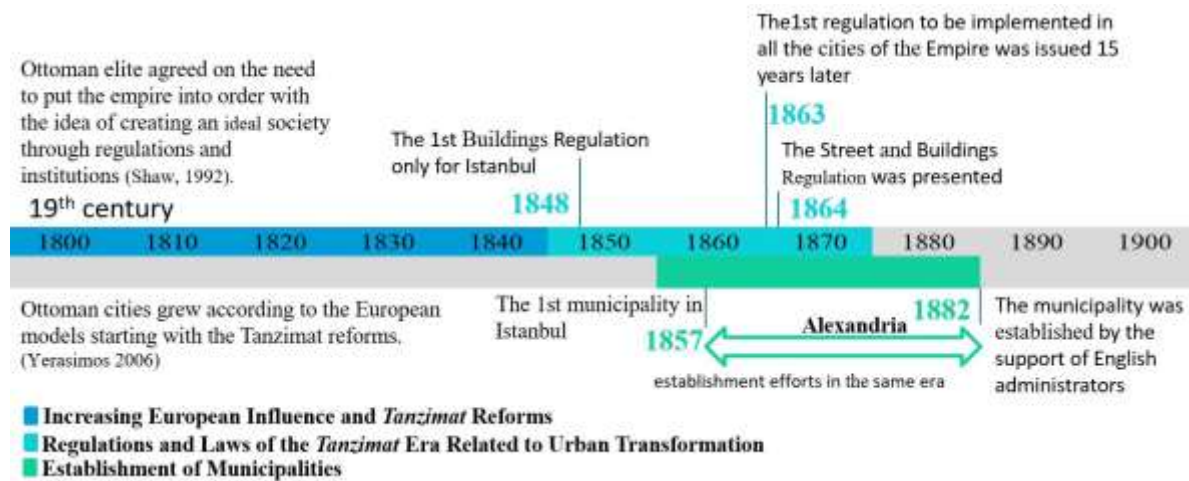


Figure 2-8 19th Century Time Line Political and Administrative Changes. (Source: By author)

2.4.1.4 Domination in the East Mediterranean

The European relationship to the Ottoman Empire was an illustration of semi-colonialism; this term indicated the strength of the indigenous administration, trade, and production, as well as the imposition of European power (Reimer and Bridgehead, 1991). The guarantees given to European countries for their investments in the Empire started the semi-colonisation period of the Ottoman Empire which immediately resulted in infrastructure investment. The occupation of the Eastern Mediterranean by European powers in the late 19th and early 20th Centuries brought the region under the intense political and economic influence of Europe (Davison, 2015). The foreign rulers controlled the economies of these areas. In this period the physical features, as well as social structures, of urban centres, came under the influence of the European powers.

By the beginning of the 19th Century, several parts of the Eastern Mediterranean were included in the international network of trade and finance. This integration caused the immigration of European factory owners and technicians, the investment of foreign capital, the development of mechanical transport, and the shift from existing types of agriculture to cash crop agriculture. Foreign competition resulted in the loss of handicrafts. All these events marked the effects on the location, size and structure of Eastern Mediterranean cities. The economy began to orientate outwards, toward the export of primary regional products, such that transport systems were accordingly developed, with railway lines and steamboat services leading to the shores, and the associations of the main cities shifting to seaside areas. The growth of these coastal areas was also stimulated by the immigration of hundreds of thousands of French, Greeks, Armenian and Italians who came to establish either a majority or a vast minority in these cities and thus gain relative power (Issawi, 1969).

2.4.2 Socio-Economic Changes

The empire became progressively exposed to European powers during the 19th Century, and mainly after the 1838 commercial exchange conventions, the Ottoman Empire was forced to become an open market where European goods were bought and sold freely with low customs duties. The Anatolian and Eastern Mediterranean Ottoman cities became centres providing European markets with raw materials, and the production structure increasingly came under the influence of European goods. The immediate consequence of this was a rapid decline of production in cities (Kent, 2005).

2.4.2.1 Commercial Exchange Conventions

Capitulation gave advantages to European countries until World War I; however, this function changed during the 19th Century. Advantages became rights as European powers grew and the Ottoman power weakened. In 1838, the Commercial Exchange Convention, which stood between the Empire and European countries, exposed the Empire to European products by standardising customs duties on imported, exported and transit products. This allowed European traders to purchase products and stocks from any place in the Empire. These arrangements were inconvenient for local producers and centres of local production. However, cities that became centres of exchange with European countries developed from these agreements.

This process was signed firstly with England in 1838, which attempted to include the Ottoman Empire in the European market. Similar agreements were later signed with other European states (Geyikdagi and Geyikdagi, 2011). The impacts of the Commercial Exchange Convention also altered the social structure in cities, especially in trade centres and port cities. Before the increase of imports, Muslim traders conducted the majority of exchange activity in the cities, however, this shifted to non-Muslim merchants who gained a dominant position in the trades by using their advantage to collaborate with European dealers while communicating with the local population (Burton, 2000).

The expansion in the exchange of imported products and their changing financial structure had two contrasting economic impacts on the cities of the Empire; firstly, it had an adverse impact on the local production centres, and secondly it had a positive impact on port cities. Local production centres lost their importance as trade centres, and the new business centres that emerged were connected with European countries that would change the settlement hierarchy in the Empire (Burke III et al., 1987).

2.4.2.2 Development of Port Cities

Most of the Eastern Mediterranean cities have been highly urbanised throughout history; firstly, during the Greco-Roman era, from 300 B.C. to 600 A.D., and secondly during the periods of European dominance, from 1800 to 1920s, when the urban centre moved to seaside areas (Issawi, 2013). Nevertheless, the Eastern Mediterranean started the 19th Century with a large population of city inhabitants and an accumulation of populations in the cities of its inland regions. However, but by the end of the century, wide-ranging urban growth and a population increase in the seaside cities were observed. Inland cities, such as Cairo, Damascus and

Jerusalem declined, while port cities, such as Alexandria, Antioch, and Beirut, flourished (Ibrahim, 1975).

Moreover, the Industrial Revolution influenced the development of a new international exchange route and the growth of Mediterranean trade. Furthermore, the connection with Europe affected the urban growth of port cities. These cities became the meeting point of merchandisers that were transported goods by the railway system from the hinterlands and smaller ports. This passage and transportation structure required the development of big harbour cities, such as Istanbul, Izmir, Thessaloniki and Alexandria (Issawi, 2013).

In the 19th Century, the core port cities and their hinterlands were divided among the European settled authorities. All port cities were typically developed by railways, which were constructed by foreign firms and linked to the hinterlands. Consequently, port cities became a changing point of a system of transportation, and the control of the hinterlands resulted in European and foreign domination over Ottoman rule. Moreover, foreign firms and their governments became highly connected to the administrative powers in the region (Toksöz and Kolluoglu, 2014, Tekeli, 1971).

2.4.3 Spatial Changes in Cities

Industrial development in Europe brought growth and transformation in cities through accumulative migration; this led to expansion and planning problems. The Ottoman Empire prepared and published urban transformations within the Tanzimat changes in order to respond to the issues posed by Europe. The regulations and laws issued in the 19th Century established the physical transformation of the capital, Istanbul, and of port cities in accordance with the European model. This involved the renovation and planning of streets in a grid form and with particular width measurements, the confiscation of lands for public use, and the reform of city administration by providing it with new services (Goffman, 2002).

Throughout the 19th Century, the urban population grew due to the increase in commercial exchange activities; this resulted in the development of transportation facilities, and the improvement of public administrative and municipal actions, which were thus improved. Administrators and governors were responsible for the modernisation and transformation of cities; thus, the urban space transformed due to these renovation activities.

2.4.3.1 Establishment and Formation of New City Centre

In the 19th Century, a new city centre was formed with different purposes ; it became a business centre for trade with the bourgeoisie, especially foreigners, who came to settle as a result of the

new foreign exchange relations (Aksoy and Gültekin, 2006). The city centre was thus formed for several reasons: firstly, the need for communication between the city and its hinterlands (by railways) and globally (by maritime ships); secondly, the need for new financial facilities due to foreign commercial activities and control. European citizens imported new financial services, such as banks and bourses, to the cities. Besides, there was a need for new administrative buildings brought by the Tanzimat changes due to the administrative transformation from military organisations to appointed governors. Thus, new administrative buildings were established in the new city centres. Finally, entertainment facilities, such as theatres, cafes and shops for luxury goods, were created in the new city centres; this met the habits and lifestyle requirements of Europeans and demonstrated their impact (Tekeli, 1971).

2.4.3.2 Renewed Urban and Architectural Forms

Urban growth transformed in the cities of the empire. There was a gradual expansion from the city to more open cities, and from irregular urban fabric, to a network following the new Tanzimat rules. Although extensions were the most visible phenomenon of the transformation, the 19th Century also represented a period of city reconstruction. Urban landscapes were recomposed through several types of intervention, seen in the introduction of new architectural forms on the one hand, and in the arrangement of layouts on the other. (Jayyusi et al., 2008)

2.4.3.3 Developing and Changing Street System

As the old system was not applicable to the new connections and transportation systems, the physical structure of cities altered due to changes in their traditional street systems. By the end of the 19th Century, railway stations and improved docks were added to the city's expanded street system. Thus, the redesign of urban transportation frameworks, the broadening of streets and boulevards, the improvement of streets connecting the city centre to new residential areas, and the expansion of tramways were significant concerns of the Ottoman administrators. These changes provided new settlement areas either outside the city walls or in dense areas (Tekeli, 1971)

2.4.3.4 Formation of New Settlement Residential Areas

The construction of new roads in the cities supported the construction of new settlements. Cities were developing and spreading through the spatial diversity of business and residential areas. As the traditional narrow streets had become inefficient for the new type of vehicles, transportation routes and traffic flow, the newer, wider roads enabled increased movement in the cities. The modern city was more integrated with its surroundings through its increasing

transportation options and purposes. Thus, as wealthy citizens established summer residences in the countryside or on the shore, the new settlement areas with broader streets were first occupied by these affluent families, as private transportation was not suitable for the old street system. According to this change, agricultural land around the city was recognised under private ownership, and the cities expanded throughout the plains around the cities (Tekeli, 1971).

2.4.3.5 Additional and Different Construction Activities

In the traditional city centres, the urban transformation also occurred due to fires, as most buildings were wooden; therefore, these areas became massive. New materials were used in the new constructions, mainly comprising stone and brick to avoid fires. This situation led cities to move away from their traditional buildings to incorporate new modern styles. The green areas that existed in the cities before the 19th Century had served as fruit and vegetable gardens for residents; however, their distribution and use changed in the 19th Century with the general urban transformation. For example, some green spaces were turned into plots for new residential constructions, whilst some were transformed into public parks and landscapes within the city. Furthermore, the old cemeteries within the old city were also turned into public parks by the municipalities. The growing population had led to inefficiencies in the existing sanitary and health systems, especially in port cities; therefore, quarantines and hospitals were built for health services. Around the cities, another type of land use existed, namely, the industrial area; thus, new factories and warehouses were established near the ports or a cargo railway outside the city core. Although the main production activity was still located within the city, there was a greater tendency for some businesses to move out of the cities (Aksoy and Gültekin, 2006, Tekeli, 1971)

2.5 Transformation of Eastern Mediterranean Port Cities

Demand for a new city form and urban aesthetics appeared in the Eastern Mediterranean cities in the 19th Century. European masters, architects and planners, who tended to be local professionals trained in Western Europe, embraced the transformation of traditional cities. A number of projects created at that time confirmed the transmission of urban aesthetics from Western European centres and their implementation in Eastern Mediterranean cities (Table 2-1).

<i>Cities</i>	<i>Projects</i>	<i>Year</i>
<i>Thessaloniki</i>	• Plans by Ernest Hebrarb and Thomas Mawson	1918
<i>Istanbul</i>	• Enlargement project by Joseph Antoine Bouvard	1902 1922-1924
	• Plans by Carl Lorcher	1924
	• Master plan by Henri Prost	
<i>Izmir</i>	• Plan by Rene and Raymond Danger, consultant Henri Prost	1924
<i>Beirut</i>	• Regularisation plans by the Ottoman administration	1914-1917 1918
	• Projects by the French Mandate	1932
	• Rene Danger's comprehensive plan	
<i>Alexandria</i>	• Creation of the new European centre around the Place des consuls by Italian architects Francesco Mancini and Pietro Avoscani	1820-1855
	• The remodelling of urban space by Italian architects A. Lasciac and others	1882-1918
	• The design of the Corniche by L.Dietrich	1902
	• Comprehensive plan by W.H. McLean	1918

Table 2-1 European Architects and their designs within Mediterranean Port Cities (Source: by author based on Hastaoglou-Martinidis, 2011)

Table 2-1 European Architects and their designs within Mediterranean Port Cities

Since the 19th Century, there was a general move in town planning away from ‘surgical’ operations, where streets were ‘opened’ (the regulation plans) to the artistic principles of design, which manifest throughout Europe (Hastaoglou-Martinidis, 2011). However, another novel approach across the different nations was public art; this evidenced the aesthetic concerns of architects and town planners and indicated a turn towards a ‘genuine art of space’. Indeed, Camillo Sitte was attributed as restoring town planning from engineers to architects, which encouraged the perception of the city as the product of three-dimensional relations between public spaces. Sitte supported a picturesque and psychologically satisfying organisation of space. His description of the architect as the champion of beauty against utility, and his principle that town planning should be considered not only as a technical problem but as also as an appealing problem was destined to have a significant impact on the study and design of the urban space (Hastaoglou-Martinidis, 2011).

However, whether supporters of artistic design or followers of balanced harmony, the integration of art into the city and the ‘civilising action’ of town planning as a tool to reshape urban settings and reform public behaviour was based on a dual acknowledgement that:

- urban aesthetics was the only form of art accessible to the urban masses, and
- the city’s physical setting had the significant potential to affect a citizen’s way of life,

Consequently, urban art became the powerful means for a public authority to regulate its people. Moreover, Sitte believed that city planning was the, "... type of artistic endeavour, [that] above all that affects formally every day and every hour the great mass of the population." Thus, these views suggest that every city has its own set of symbolic spaces that embody the collective memory of its residents throughout years of interaction and association. However, it is important to note what literature in memory studies and cultural geography usually refer to as "spatial" is a general summary of the concept of place and place attachment (Hastaoglu-Martinidis, 2011).

2.6 The Process of Modernization in Ottoman Empire's Port Cities

This arrangement was overturned when relations with European powers changed as a result of the expansion of capitalism and the emergence of Western control. At the beginning of the 19th Century, the Ottoman Empire began a new season of radical change and Westernisation, which directly affected the physical transformation of both Thessaloniki and Izmir. In 1831, the population of Izmir totalled 48,000 while Thessaloniki was 80,000; however, by 1893 Izmir had reached 207,548 and Thessaloniki 103,544. Like Alexandria, both cities had similar administrative, economic, social and spatial changes, including improved waterfronts, leisure and port facilities (Bugatti, 2013).

2.6.1 Administrative and Political Changes

The 19th Century signifies a time of progress in the Ottoman Empire, which was reflected in the different ethnoreligious gatherings. The first changes occurred in 1839, when the urban modernisation of cities was influenced by *Tanzimat* reform when all Ottoman residents (Muslim and non-Muslim) were awarded authorised equal rights. Moreover, in 1856, improvements had become identified with the religious issues of non-Muslims. The changes expressed that, in settlements where there are diverse religious groups, the repair of public buildings, places of worship, schools and hospitals were permitted, while government authorisation was required for the re-creation of these structures. This restriction was due to previous limitations concerning the repair or reconstruction of non-Muslims properties. Thus, this led to the authorised election of non-Muslims as members of administrative boards of districts and towns. It was a defining moment in Ottoman history, combining administration, justice and socio-economic dynamics. Therefore, when the first constitution was declared in 1876, it stated that all Ottoman Empire residents had equal rights, immunity and freedom to

practice religion; planning to establish an efficient change introducing many new regulations in administration, urban order and social life (Shaw, 1992, Shaw and Shaw, 1977).

This influenced a change in the Ottoman Empire's administrative structure; the Empire was divided into administrative sections (States), which were divided into sub-sections (urban areas and cities). The capital, Istanbul, was organised as the first municipality in 1854, followed by Izmir in 1868 and then Thessaloniki in 1869. However, the municipalities were not sufficiently dynamic; as such, a modern municipality organisation was established in 1877, which worked with the municipal council whose members were elected from the Muslim and non-Muslim public. They engaged with prominent ordinary officers to enable the aforementioned improvements before securing approval for election. The municipality therefore controlled construction works, the commercial and business areas, and exchange activities; moreover, it provided health and hygienic administration, lighting, and schools, whilst also collecting municipal returns and recording real estate (Gencer, 2012).

An important trigger for these changes was the new Ottoman elite, who intended to bring Western establishments to the State with the purpose of restoring and strengthening its government. This period of transformation and Westernisation of the Empire introduced regulations on the urban form, mainly regarding the modification of the width of existing streets (Çelik, 1986). Following the Tanzimat changes, the urban texture was managed through new regulations, which concerned buildings, streets and open spaces. During the first half of the 19th Century, the Ottoman authorities officially implemented their European modernisation plan through impressive public buildings, such as the military quarters. The second half of the Century was characterised by the construction of Governor Palaces, and Konaks (Mansions, Villas, and Courts), which replaced the traditional wooden house structures. Modernity was expressed through the use of stone. This material, which, in the past was chiefly employed in monumental religious buildings, was also used in new secularised institutions in the late-Ottoman period. As a result, the duality of the old and the new was noticeable, and this was not restricted to just building types and architectural styles but also influenced the social and behavioural utilisation of open public spaces, affecting recreation activities and social/cultural life.

The visibility of non-Muslims in the urban context resulted from the Tanzimat Changes, which allowed them to own properties in the city and to construct new buildings. This was particularly

prevalent in cities, such as Izmir and Thessaloniki, where Muslims were not dominant and where an increasing number of foreign architects were involved in the urban transformation. Thus, the two urban communities saw the development of huge scale office buildings, banks, masonry mansions, schools, hospitals and religious buildings. Other external variables influenced such urban and infrastructural changes; these included the expansion of foreign capital streams in the form of direct investments and loans as well technologies advancements (Shaw and Shaw, 1977).

Due to the activity of their two port city harbours and to guarantee the active transport of cargos, Izmir and Thessaloniki needed an efficient, organised street network that connected the city centre and downtown with the neighbouring areas and countryside. The first building code was enacted in 1882 and the conditions of the street and public spaces thus changed by the 1870s. Moreover, Midhat Pasha, the then-new Governor of Izmir, denounced the city's social and physical separation between its maritime quarters and its traditional hill districts, and proposed a solution, to widen major existing streets and create new ones.

2.6.2 Socio-Economic Changes

In the first half of the 19th-Century, Izmir and Thessaloniki were two port cities of the Levant, whose harbours were not appropriate for the increase in ship traffic (Hastaoglou-Martinidis, 2010). Izmir's administration managed the disintegrating irregular wooden piers until, in 1867, a French firm contracted new quays and a protected harbour. The new Kordon (quay) represented an unbroken ribbon between the Konak area and the northern quarters, with new urban settlements connected to the existing Frankish quarter (Bugatti, 2013, Bilsel, 1999, Zandi-Sayek, 2000). The Ottoman administrator who successfully managed the Izmir works was reassigned to Thessaloniki, where he carried out a parallel urban transformation (Yerolimpos, 1998, Bugatti, 2013).

In Izmir and Thessaloniki, a significant section of the population was represented by Turks, Greeks, Armenians and Jews, besides its the European occupants, such as foreign merchants and vendors, who comprised different proportions of these groups. Indeed, by the end of the 19th Century, Muslims were the minority in both cities, as the census in 1881-1882 showed that Izmir's Muslim population was 38% and Thessaloniki was 28%, representing less than the half of the total cities' populations (Gencer, 2012, Gençer, 2016). These mixed ethno-religious groups interacted and blended freely in the commercial centre and harbours, but each group

settled in its quarter in the two cities. As shown in Figure 2-9 (A), in Izmir each ethno-religious group inhabited its own neighbourhood; the Turkish quarter was located around Mount Pagas and down towards the port, while the Jewish district was in between the Turks and the harbour zone, which was the city's commercial hub. European merchants and diplomats settled in the European neighbourhood, known as the Frankish quarter, that was located on the waterfront near the shore and around Frank street between the commercial hub (port) and the northern part of the city. Meanwhile, Greeks inhabited the eastern part of the European quarter and Armenians were located between the Turkish and Greeks zones.

The Frankish quarter in Thessaloniki was located close to the waterfront, around the commercial centre and Frank Street while the Turkish were based in the north-east area of the city inside the wall. The Greek neighbourhood was located in the western part close the gate, while the Jews settled in the middle surrounded by the commercial sector, the Greek and Turkish quarters and near the waterfront, as shown in Figure 2-9 (B) (Gençer, 2016, Bugatti, 2013, Gencer, 2012). The urban pattern and zoning of the groups closely corresponded with the urban topography, commercial centre and port in both cities. Moreover, the similarity between these factors influenced the morphological characters of both port cities.

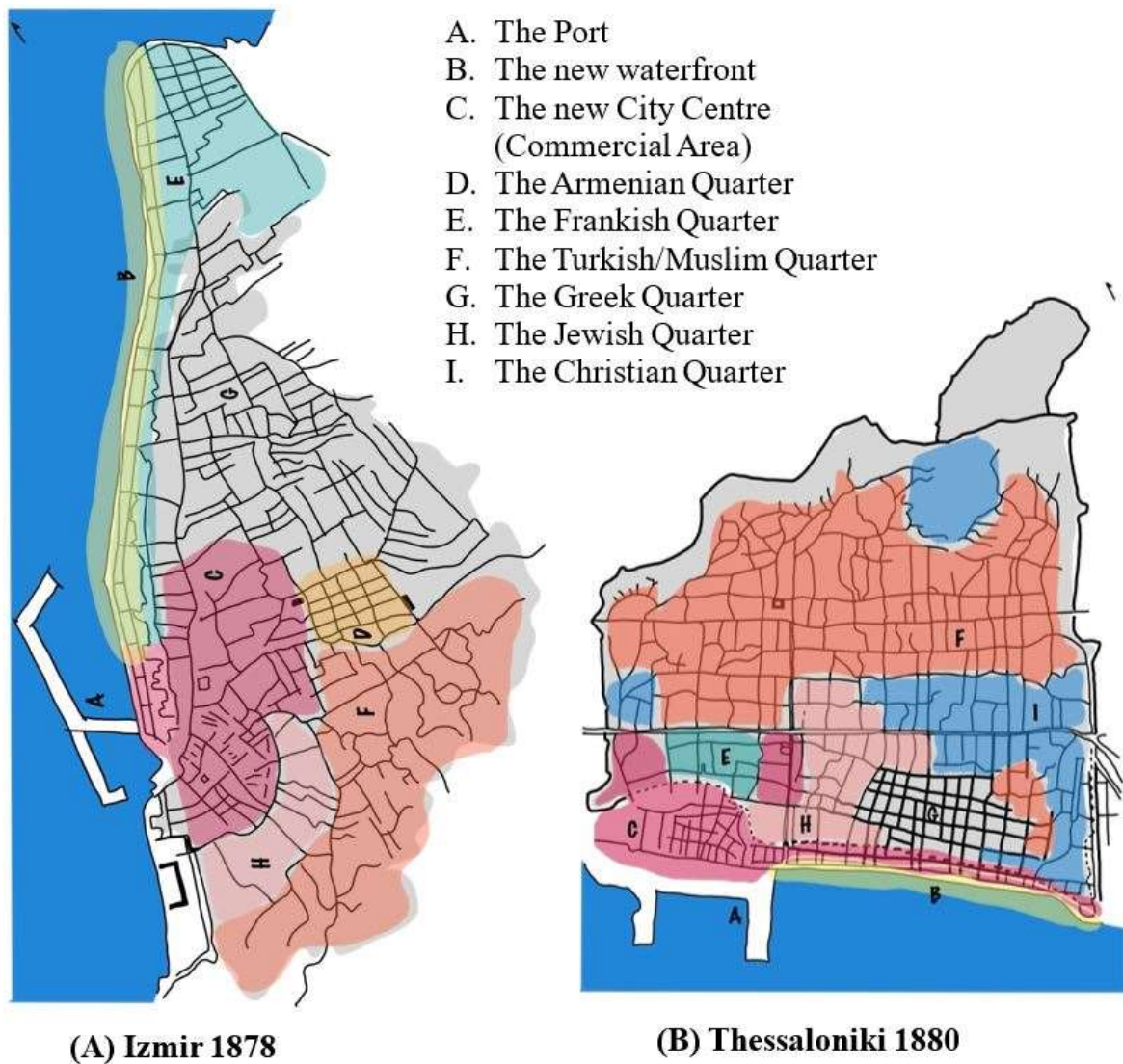


Figure 2-9 Plan of Izmir and Thessaloniki showing the quarters and fire area (Source: By author based on Bugatti, 2013)

Until the 16th Century, Izmir was a small agricultural town of 1300 inhabitants that served the capital city Istanbul. New markets developed after this period, which granted Europeans safe trade rights for silk and spices from the East to the West, and around 1700 Izmir became the new centre in the silk trade. Furthermore, silk, grains, raisins and figs were the city's main export products in this period. From the 17th Century, the port city became part of the international trade routes and more foreign consulates settled in the city, who were French, British and Dutch, against whom the local merchants, which included the Turks, Greeks, Armenians and Jews, were competing (Gençer, 2016). By the end of the 17th Century the economic policies aimed to establish Izmir as the only international trade port in the Aegean region. This attracted more foreigners and Ottomans for investment and enhanced the city's economic development. Developments, such as telegraph lines, were installed in the 1830s, which helped Izmir to increase its commercial and trading relations with European markets

after the Ottomans, and local traders gained access to European markets due to the 1838 Commercial Convention. Moreover, the construction of the railways between 1861-1864 enhanced Izmir's connections with its surrounding neighbours, providing a faster transportation system (Gencer, 2012, Gençer, 2016, Hastaoglou-Martinidis, 2010).

However, massive fires damaged the Armenian quarter of Izmir and part of the Frankish quarter in 1845. These events incited a violent response in Western countries, which had suffered property loss. The modernisation of Izmir turned into a perfect show window for the new Ottoman approach to change, where the new Armenian quarters were composed of an adaptable symmetrical pattern that maintained connections with existing street systems, and the Armenian Church was reconstructed as an urban landmark. This system became a vital reference for later post-fire urban development. Furthermore, the new waterfront was planned in two phases. The first phase was conducted between 1869 and 1880, when a new seafront ten meters in depth was constructed using materials from the ruined ancient maritime walls. The second phase was completed by the end of the 19th Century, which saw the development of a new port, and a tramway line that enabled the movement of merchandise from the waterfront to the railroad station (Bugatti, 2013).

In comparison, Thessaloniki was the capital of the Macedonian region and considered an important port by the Ottomans due to its location at the middle of the intersection of Macedonia and the North Aegean. Due to this, the Ottomans attempted to conquer the city several times and succeeded in 1430. By the first quarter of the 16th Century, the city's population totalled 23,000 citizens; however, by the 18th Century, the city established a place in the international trade routes of the Eastern Mediterranean where Jews and Greeks were active in trading and exporting wool, cotton, silk, tobacco and grains to Europe (Kiel, 2009, Gencer, 2012). The port was a passage point for the British; a transit stop for the ships sailing from London to Izmir. After the Commercial Convention of 1838, the numbers of export and import ships increased, and commercial relations with Europe improved. The construction of the railway in 1874 connected Thessaloniki with the surrounding area and with Istanbul by 1896. After linking the port with Istanbul and its neighbours between 1870 and 1890 the number of ships stopping in the port tripled (Vlami, 2009).

Izmir and Thessaloniki's waterfronts were spaces to move products as well as urban promenades where clubs, hotels, cafes, theatres, cinemas, distribution warehouses, shops, and residences were constructed. Members of the local Ottoman bourgeoisie authorised these structures (Bugatti, 2013). The changing waterfront drove the redesign of the existing locale;

for example, the adjacent Frankish quarter. New commercial spaces and structures repeatedly replaced existing buildings; these were built in these quarters in the late 19th Century. In Izmir, old distribution centres, constructed inside the limited plots that connected Francs street, the primary street of the Frankish quarter, to the Kordon, were restructured with neoclassical elevations. These were similar to the new passages in Paris but also preserved the idea of an enclosed Ottoman commercial space.

In Thessaloniki, sections of Sabri Pasha Street were roofed with steel and glass. The developments that took place in standard housing significantly transformed the surrounding districts. Architects, who were mainly members of the non-Muslim Ottoman communities and supporters from the middle to higher classes, became agents of a substantial unofficial modernisation (Sutcliffe, 1998). Meanwhile, in Izmir, new single-family houses were constructed as row houses, which represented the most outstanding architecture within the urban scene of sea districts (Figure 2-10). In comparison, in Thessaloniki, an uncommon type of housing apartment building was constructed on the waterfront and in the Greek quarter after the 1890 fire. Figure 2-11, illustrated the neoclassical characterisation of this type of buildings.



Figure 2-10 Izmir's waterfront during 1890s. (Source: Bugatti, 2013)



Figure 2-11 Thessaloniki's waterfront district during the 1890s. (Source: Bugatti, 2013)

2.6.3 Spatial Changes and Urban Transformation

In the second half of the 19th century, Izmir and Thessaloniki's municipal bodies were stimulated to renew and transform the urban fabric by the new Tanzimat reforms. Therefore, regulations and laws that concerned building alignments, building types and street widths aimed to achieve a sophisticated transformation by founding public spaces, developing communications and transport, and establishing and constructing railroads and port facilities. At the end of the century, public architectural structures belonging to the administrative-secular institutions, as well as commercial buildings, became landmarks in the renovation of both Izmir and Thessaloniki.

Izmir's streets were narrow, unpaved, dirty and irregular (not-gridded); they lacked street lighting, and no transport roads connected the city to the suburbs. Even Frank Street was not smooth, and there were no port facilities. In 1834, the streets in the European quarter were repaved under the supervision of the consulates and the Greek community, and in 1839, Frank Street was furnished with lights. These transformations resulted in the active participation of foreign inhabitants.

In 1875, the Frank quarter and its surrounding areas enhanced and flourished after the construction of the quay, which also provided the waterfront area with commercial facilities and activities, while the quarters belonging to Muslim and Jewish citizens were old, damaged and falling apart since they had become separated from the modern city. Since widening the streets was challenging due to the high cost and mechanical strain, streets planned in the new areas followed the new regulations of the roads. Gençer (2012) stated that, in 1891, Quay Street was the widest at 18m, followed by Goztepe Street in the new neighbourhood of Konak, which was between 10m and 12m, while Frank Street was between 5 and 8m. However, the rest of

the city centre was barely 4m wide, paved with crushed rocks and occupied by vendors; therefore, using the streets was risky for inhabitants. At the beginning of the 20th Century and after the construction of Izmir's Sarikisla barracks which included the new Governor Palace and clock tower, Konak Square was transformed into a Western plaza, entirely different from the traditional Ottoman open spaces called *Meydan*.

In 1924, the Danger brothers and Henri Prost - members of the *Société Française des Urbanistes* - were appointed the plan of Izmir, after the Greco-Turkish war in 1922 when the city was destroyed. This prompted the departure of a significant portion of the Greek, Armenian and European populations who controlled the economy; this caused the decline of the city. Aside from the need to revive the economy, international financial and contracting companies were pulled by the reconstruction of the city. Henri's model combined modernity with continuity with respect to the aesthetics and social stability of the original cities; however, new urban quarters were planned and created within European concepts and appearances. He started in Izmir with a survey tracing the public buildings to be saved or with minor damage and developed a schematic plan for the ruined area, as a guide for the final design.

The modern city was designed as three areas. The first area was the west part that was destroyed; it was rebuilt as a central area with commercial and university buildings and delineated by a boulevard from the undamaged upper Turkish quarter near the Citadel (Kadifekale). The second area was bordered by another boulevard designed along the former Aydin railways, which contained a wide industrial zone between the new port and the new central station. The final third part, contained residential developments influenced by garden city designs; these were arranged in the western and south-eastern edge of the city to attract new tenants.

The regulations and the municipality's requests were established by Dangers and proposed in a layout that incorporated large open spaces and diagonal streets and avenues that formed a focal visual axis toward the sea or monumental buildings, such as the citadel. The roads overlapped at radial squares, with the most iconic being in the Republic Square by the sea, where the statue of Mustafa Kamel was located. The central axis connected Republic Square to the central railway station, passing by the public gardens surrounding the university buildings. The plan was adjusted, on the request of the municipality by reducing the width of the streets and avenues from 35m to 15m and decreasing the surface area of the public spaces along the quay; this plan obtained approval in 1925. The implementation of the new plan in the 1930s generated the modernisation of the urban structure and form. The previous multi-ethnic spatial patterns

vanished, and the modern city fabric invited new residents of different social and economic statuses to the Republic of Izmir.

Thessaloniki was, at this point, considered a Turkish town due to its common attributes; no consideration was paid to neatness or accommodation in the street, which was filthy, littered, unpaved, disorganised and blocked with house projections. There were only a few stunning architectural style buildings in the Frank quarter, but the city required wider streets and boulevards, squares and monumental spaces and buildings. The visit by the Sultan in 1859 drove the local authorities to demand changes to the city scale and to experiment in the transformation of its public spaces. This included the removal of building projection features along the streets and the demolition of part of the historic eastern walls in order to expand and widened the city, and start paving with the central axis on Sabri Pasha Street. The new street was 8m wide, and linked the white tower on the waterfront to a new square at the gate, Kelemeriya. By the second half of the 19th Century, the city trades increased, and more foreigners settled; this encouraged enhancements, such as the enlargement of Vardar Street in 1868 and the addition of the new axis to the modern city outside the wall on Midhat Pasha Street in 1875. However, by the end of the 19th Century, only the main streets had achieved the based obligation characterised by the regulations and building codes. Nevertheless, in the 20th Century, Western Avenue was furnished with a double row of trees, and Hamidiye Boulevard was urbanised with a two-storey apartment buildings, called Sultanik, which became models for Thessaloniki's modern urban space.

The Greek government of Venizelos decided to use the rebuilding initiatives to modernise the city, in particular the urban spaces where the Greek element remained in the minority until the departure of Turkish residents in 1923. In 1918, Ernest Hebrarb (French), and Thomas Mawson (British) designed Thessaloniki's plan, which represented Hebrarb's most significant work in Europe. The planning model aimed for visual harmony, a rational organisation of space and industrial development, in a perfectly coordinated system, whose implementation presupposed a powerful authority capable of overriding the individualistic economic interests on urban land. The development principles completely met the goals of the government, by paying little attention to oriental urban structures, and by meeting the requirement for a radical reshaping of the city.

For the central part of the city, the arrangement embraced the complex organisation of a typical Beaux-Arts design. To serve the irregular grid pattern of the old city, a new grid network was planned with diagonal street intersections to accommodate modern activity and traffic goals.

The old urban pattern was replaced by building blocks in new urban fabrics. The planner's focal concern in his proposal established a monumental civic centre furnished by a large square (Roman Forum) at the upper (south) part with public functions on the main North-South Boulevard in the city centre and Aristotelous Square on the waterfront. The plan carried a balance and harmony between new developments and traditions with the presence of history retained on the buildings erected on the Boulevard, which reflected the homogenous architectural style of the Byzantine city. Meanwhile, it preserved and relocated selected Ottoman monuments in their context and arranged them in open spaces. However, due to the lack of money, only the reconstruction of the city centre and the design of the civic axis were applied from Hebrard's comprehensive plan. Thus, the quarters which were, for the most part, found near the seashore and waterfront of Izmir and Thessaloniki, characterised the modern city, while the inner elements stayed as they were; old and in some places neglected.

2.7 A Method for the Study of Port City Models

Port cities, with their specific common features, have been suggested as a theoretical model to understand their role as the entrances through which European capitalism found its way into the Ottoman territories (Hanna, 2005). Until the middle of the 19th Century, the existence of a port did not affect the shape of the city that much compared with an inland city. Before the middle of the 19th Century, the demand for space in the port and its hinterland was small as the volume of trade was also small. Loading and unloading activities were generally done manually, and transport to and from the port was by wagon and horse or by donkey and camel or porter. Khans, located near the ports, were sufficient for the ports services, which included warehouses, tax collectors, guards and repair-yards for small sailing craft. From the mid-19th Century and through to the beginning of the 20th Century, trade by the ports of the region grew, and the technology used for transportation changed. Firstly, sailing ships became steam-powered ships which were much more significant and required deeper and wider ports. Secondly, differentiation in the loading and unloading facilities occurred with changing cargo types such as bulk oil, mixed cargo and passengers, which needed more advanced services. Finally, changes took place in the supporting services of the port and its environment like customs, customs agents, importers, exporters, transport services, bank lawyers, insurance companies, travel and tour agents, etc (Soffer and Stern ,1986).

In the geographical context, port cities experienced the most observable change in the 19th Century. Inside the cities, the old and the new settlement areas survived next to each other. The separation of quarters according to religious and ethnic divisions turned into the separations

according to class relations. Soffer and Stern accepted the model of the Middle Eastern city, presented in Figure 2-12 and paid special attention to the differentiation of the Middle Eastern port city models, as presented in Figure 2-13

The model for the Middle Eastern city has two distinct parts. The first contains the old city with characteristic components such as the central mosque, traditional bazaars, khans, narrow winding streets, a fortification wall surrounding the old city, and quarters separated from each other with ethnic and religious identities. The second part of the city is modern and contains the new city centre. New residential areas were built around a new central business district with mixed populations separated according to income instead of ethnic and religious identities. With the establishment of the railroad, which reaches the transition area of the city, the industrial zone was created by the spreading of industrial developments on each side of the tracks. The model for the Middle Eastern port city also had two main sections, the old and the new which overlapped. This overlapping was either partial or complete, but the centres adjoined and linked, resulting from the penetration of port services into the older parts of the city attached to the port. The expansion of the port, in most cases, was linked to its historical site and was gradual. All the rings around the centre were different from those of the inland city model. The port city was constructed on and around one centre which combined both old and new. On one side of the centre, there were elements that belonged to the past, and on the other side were elements belonging to the modern part of the city. The recreation and beach areas and the upper and upper-middle residential areas, including the foreign population, constituted the elements of the modern part of the city (Soffer and Stern, 1986).

The railway constitutes an additional factor in the differentiation of the port city from the inland city. In the model of the inland city, the railroad came just outside the old city where the separation began between the old and the new city. In the port cities, the railroad penetrated to the old city to reach the port. The formation of the industrial zone around the railroad was similar case between both inland and port cities. Furthermore, the differentiation in the residential districts was also similar for both the inland and port cities. However, the formation's differences can be traced in Figures 2-12 and 2-13. In the model of inland cities, the lower class continued to reside in and around the old city centre while the richer population moved to the newer developing areas. However, in the model of the port cities, the city centre housed a mixed population, although differences can be observed. around the city centre. . For example, in Alexandria the northern part of the new city was dominated by the lower class while the eastern part around the city centre was dominated by the middle and upper classes, and the western parts housed those less fortunate.

The cosmopolitan population was also a common phenomenon in all active port cities in the Middle East, and this affected the model. The establishment of a second large commercial centre in port cities was the result of the development of middle to upper-class neighbourhoods on one side of the city with a foreign population. The establishment of El-Mansheya district in Alexandria was the outcome of foreign population settlement; this occurred through the establishment of Mohamed Ali Square, which became the new commercial centre in the district. Alexandria constitutes a typical example of the port city model, as the old city was located on a coastal plain and the port developed through the penetration into the old city. The direction of the railroad, the development of the industrial zones, the cosmopolitan character of the city, the establishment of the new commercial centre, and the creation of recreational areas, which were the general characteristics of the Middle Eastern port city, can be easily observed in the thematically prepared maps of Alexandria (Figure 2-14 to 2-17).

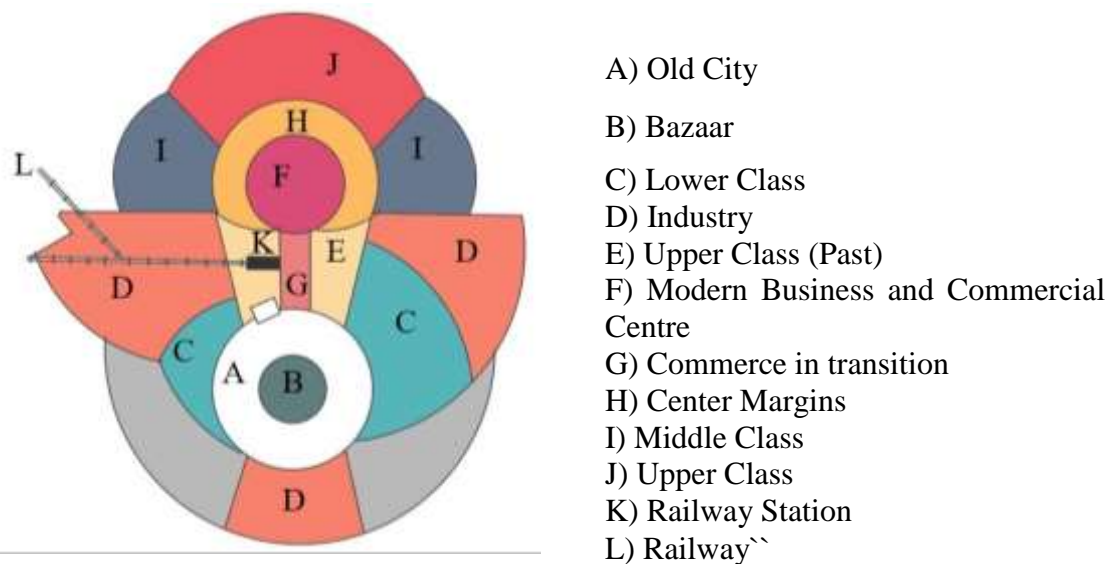


Figure 2-12 The Model of the Middle Eastern City (Source: based on Soffer and Stern (1986) model)

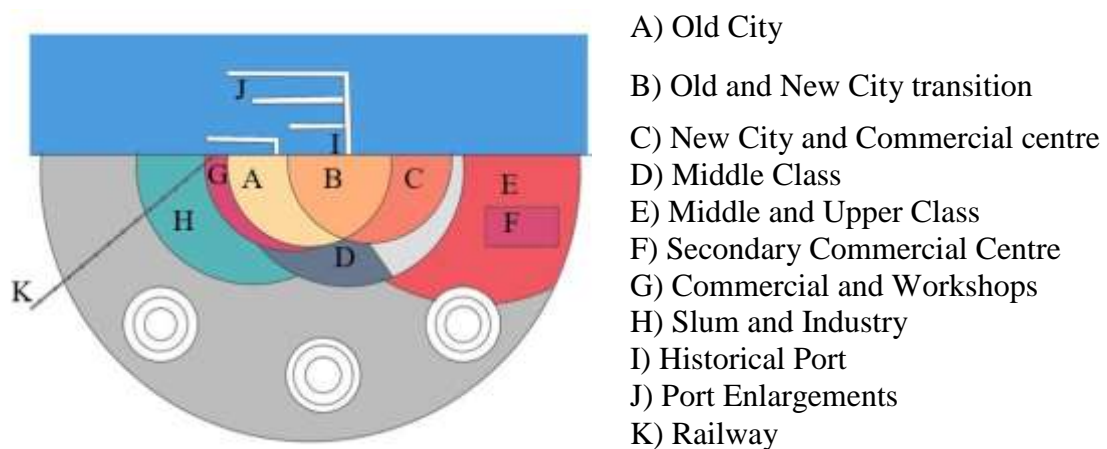
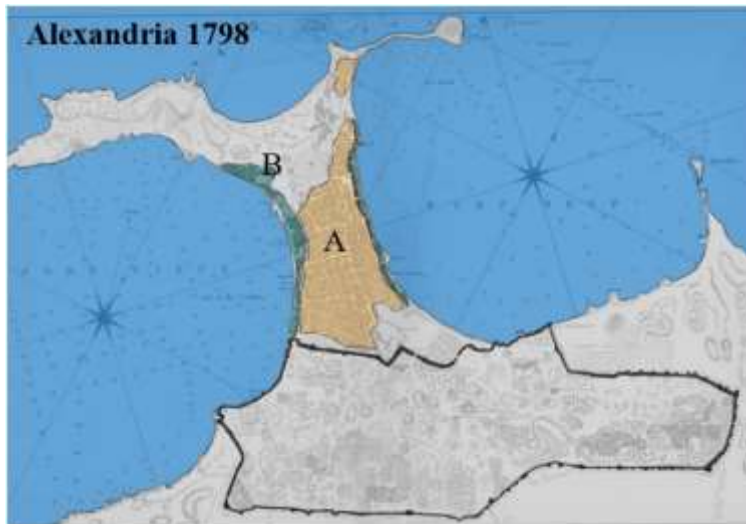


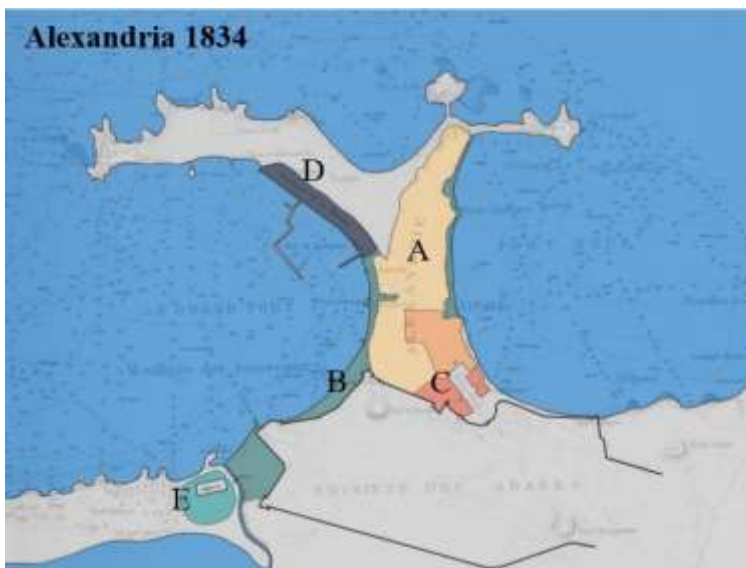
Figure 2-13 The Model of the Middle Eastern Port City (Source: based on Soffer and Stern (1986) model)



A) Old city

B) Port facilities

Figure 2-14 Thematically Map of Alexandria 1798 (Source: based on Jondet, 1921) Planche XIX.



A) Old city

B) Port facilities

C) Modern City

D) Arsenal Maritime

E) Industrial

Figure 2-15 Thematically Map of Alexandria 1834 (Source: based on Jondet, 1921) Planche XXXII.



A) Old city

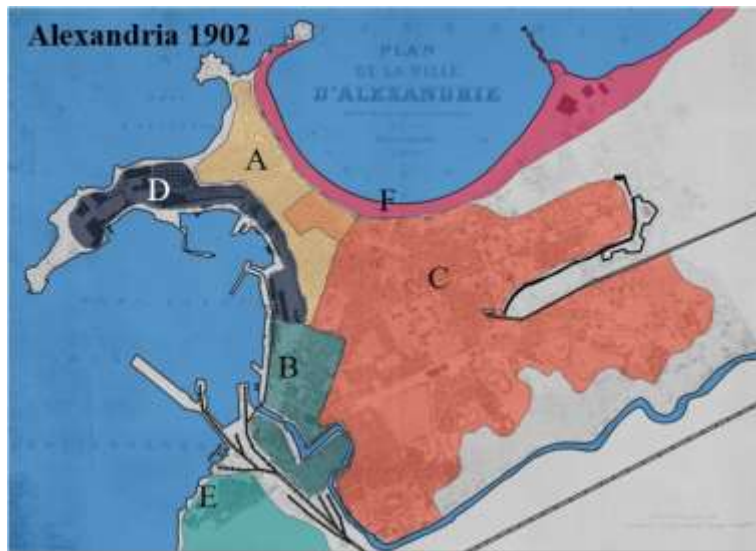
B) Port facilities

C) Modern City

D) Arsenal Maritime

E) Industrial

Figure 2-16 Thematically of Alexandria 1887 (Source: based on Jondet, 1921) Planche XLVII.



- A) Old city
- B) Port facilities
- C) Modern City
- D) Arsenal Maritime
- E) Industrial
- F) Recreational and Leisure

Figure 2-17 Thematically of Alexandria 1902 based on (Source: Jondet, 1921) Planche L.

2.8 Transformation of Alexandria port city

This section is a result of full expanded literature review on Alexandria as port city for more information please see full reflect literature analysis in Appendix A (Page 367) that identified that Alexandria has become a node and a water and land way intersection; due to its importance, the port city has been categorised as amongst the greatest cities of the Mediterranean during antiquity. Despite changes in the city's fortunes and appearance, since the time of its foundation to date, Alexandria has continued to exist as a port city. It has long established its presence geographically on the Mediterranean coast, and has enabled trading activity across a wide hinterland, supporting the economy and the development of the city. The economic advances and culture, as well as its urban form and architecture have made Alexandria one of the most distinctive cities in the region, whose coast has continuously provided the setting for different meetings and interactions among people in the Mediterranean area, particularly as Alexandria has been dominated by different civilisations throughout history.

The first section of the appendix described the cycles of flourish and decline experienced by Alexandria, which followed political and economic changes. The first extension of the city was towards the east during the Roman age. The city experienced a long history of deterioration from the end of the Roman era until the French expedition's departure at the beginning of the 19th Century. Moving the capital of Egypt from Alexandria to El-Fustat (Cairo) was one of the most critical deterioration factors. The following Table 2-2 summaries Alexandria's city growth phases flourishing and fall periods' reasons based on the literature review analyses in appendix A section 9.2.

The second part of the appendix A demonstrated that Alexandria began to revive again in the first half of the 19th Century during the Mohamed Ali era; thus, a positive urban environment began to take shape following several development projects. For this reason, immigrants flocked to the city, which expanded to the north and the south-east in the first half of the 19th Century. In the second half of the 19th Century, the city continued to grow and extend to the east, west, and south. The key factor in the urban expansion in this stage was the transport networks, especially railways lines. In the first half of the 20th Century, the city continued to extend to the south of Al-Mahmoudia canal. The built-up area extended more to the west and east, although the latter was the most prominent direction.

In the second half of the 20th Century, urban growth took four directions; to the east, the south-east, the west, and the south-west. The side effects of urban growth began to appear in some parts, such as informal housing on cultivated land in the south-east. The built-up area increased about 78 times in the 20th Century, as the city expanded horizontally rather than vertically. Moreover, at the city level, Alexandria began to experience continuous population growth from the middle of the 19th Century, during Mohamed Ali's era, until the end of 20th Century. Its population increased ten times in about 100 years, from 315,844 in 1897 to 4.9 million in 2016. For seventy years, from 1907 to 1976, Alexandria's growth rates were higher than the national rates. However, during the 20th Century, growth rates dropped twice; the first, between 1927 and 1937, was due to the effects of the Great Depression. The second was between 1976 and 1996, and was due to the success of the birth control programs in Egypt generally, and in urban areas especially. Furthermore, the role of internal migration

City Growth Phases	
The 1st flourishing period (331BC-641AD)	<ul style="list-style-type: none"> • Alexandria became the capital of the Ptolemaic realm and increased its role with the region and the world. • The city was the first international trade centre in Egypt linked the Nile with the Mediterranean, connecting Egypt with the region and world. • The exchange between Alexandria and the centre of the African continent due to the canal and the Marriot Lake. • 30BC Alexandria became the chief city of the Roman Empire. • The General Framework has been preserved unchanged, as originally planned by Deinocratis. • Build up land covered an area length of 5.09Km.
The fall and weakening period (641-1805)	<ul style="list-style-type: none"> • The port city experienced a decline and deterioration from the end of the Roman period until the beginning of the 19th Century. • The Arabs let the city fall into poor shape. • The Canopic mouth dried up in the 12th Century. • The city shrank in length by 41.1% to 3Km. • In 1517, the walled city was abandoned and the city originated in the neck between the harbours known as the “Turkish city”. Its length was 1Km and its width 0.5km. • The reason for the fall meant moving the capital to Cairo, land was in decline and there was a shortage of fresh water supply. • Alexandria was an important meeting point for intercontinental trades that kept the city reasonably wealthy but weakened.
The 2nd flourishing period and the Modern City (1805-1993)	<ul style="list-style-type: none"> • Mohamed Ali created a modern realm and transformed the deteriorated city to a cosmopolitan court. • Alexandria was one of the biggest centres of the Ottoman Empire and a vital commercial port in the region. • In 1882, the city experienced a remarkable boom in the construction sector and its urban public spaces. • Three major indicators were requested when the city was reconstructed while attending to the procedures of planning, the regulation of the city’s building activity, networking and traffic circulation: <ol style="list-style-type: none"> 1. The ruling class’ power 2. Creating a new lifestyle 3. Raising the cosmopolitan society

Table 2-2 Alexandria City Growth Phases Summary resulted from Appendix A section 9.2

in Alexandria changed from that of a serving branch of the total population up to 1986, to a source of loss from the total population by the end of the 20th Century. This change in the role of internal migration was due to the difficulties in getting jobs in the city. The following Table 2-3 summaries Alexandria's urban population based on the literature review analyses in appendix A section 9.3.

Urban Population	
Population development	<ul style="list-style-type: none"> The city experienced a changeable population throughout history to reflect the flourishing and declining periods (Table A.3) and recently started to witness continuous urban growth that started in 1987 and has continued to date.
Annual Growth	<ul style="list-style-type: none"> From 1798 to 1849, annual growth jumped to 50% in 50 years, which powered the creation of the modern city. European interest in commodities made Alexandria a centre of commerce and banking, which therefore attracted more foreigners to move to the city. Alexandria enjoyed a system that allowed a kind of fluidity between different nationalities; the city was neither entirely Egyptian nor firmly European. The Europeans, non-Muslims, Ottomans and Egyptians together comprised less than 27% in 1907. With a total of 332,246 population of there were 62,000 foreigners; thus less than 10% of the population was born outside Egypt. Alexandria was a European city, due to its lifestyle and language rather than its sense of origins. From 1907 to 1976, Alexandria's growth rate was higher than the total Egyptian growth rate due to its migration
Internal Migration	<ul style="list-style-type: none"> From 1927 to 1937, it declined from 60% to 4% due to the disappearance of the cosmopolitan city in Alexandria. This led to economic difficulties and marked the start of Alexandria's change from a cosmopolitan city/society to a mono-phyletic.

Table 2-3 Alexandria City Urban Population resulted from Appendix A section 9.3

Urban growth can be monitored using a two-dimensional approach: the demographic and physical growth of the city.

The final section 9.4 shows that city of Alexandria has experienced many morphological changes in its urban transformation that is concluded in Table 2.4 – 2.5 – 2.6 and 2.7 for detailed information about the transformation of the city, urban life and public spaces please see Appendix A.


<i>Dates and Events</i>	<i>Direction or redevelopment</i>	<i>Results</i>	<i>Physical</i>	<i>Spatial and activities</i>	<i>Maps</i>
1st Phase (1805-1855) - Mohamed Ali city's revival (1807-1848) - The Europeanisation of the city characterised the Tanzimat era (1839-1876). - Urban issue/s and western school was used - Creation of the new European centre around the Place des Consuls square by Italian architects - Construct of a large dock (1829-1833) by a French engineering	North (The Turkish Town)	Built up area increased from 16.2Km ² to 47Km ² (1820-1849)	- Curved and narrow street - Irregular land plots - Small Mosques, dwellings and shops - Built right up to property boundaries - Average of two or three storeys - The higher buildings stand on the northern edge	- Residential use plus often mixed with commercial and light industry - The ground floors occupied by local shops, workshops and cafes. - No open space for public use - The walk along the sea extending into the city centre is the most popular recreational attractions	
	South-East (Mohamed Ali square)	- Introducing the Capitulary economic existence - Confirming the role of the cosmopolitan community in the management of the city's future	- Turned it back to the sea - European style urban space - Modern streets and buildings - Neo-classical style - Establish the European imprint - Guided the new regulation and law by public order, health and beauty concern	- The commercial attraction of the modern city centre - Administrative use (English, American, French, Swedish, Holland/Dutch, Greek consulates and the English Post)	
	Western Harbour	- Increase the number of ships - Flourishing maritime, trades and immigration not only attracting Egyptians but also foreigners from all over Europe		- Industrial use	

Table 2-4 Alexandria's Morphological Changes in its Urban Transformation 1st Phase (1805-1855) (Please see section 9.4 p.)




<i>Dates and Events</i>	<i>Direction or redevelopment</i>	<i>Results</i>	<i>Physical</i>	<i>Spatial and activities</i>	<i>Maps</i>
2nd Phase (1855-1905) - The British bombardment in July 1882 - The establishment of the rail line (1854) between Alexandria and Cairo - The activation of the municipal council of Alexandria (1890) - Reshaping the Eastern waterfront (1899) by the municipality - The French garden was established as a replacement for the French Consulate (1902)	East (El-Azarita quarter as its boundaries)	- Rebuilding booming marked by the regulation of public functions in the heart of the European square and its surrounding area - Large commercial blocks and buildings raised and the elite residences - Buildings related with the ethnic and community activities	- Wide straight avenues - Large squares - Building higher than the average three storeys - Two streets parallel to the sea - European eclecticism style - Linear	- The process of borrowing western styles of urban form manifested itself in the adoption of mostly eclectic revival styles - The tendency to imitate European styles, and change the open space structure and typology, also reflects the government's concern for boosting the property market for the new pluralistic society.	
	West (El-Quabbary area near the western harbour)	- Connecting the square to the waterfront - Modern waterfront for both Turkish and European city - Introducing a new hierarchy into the urban space	- A grid of straight streets - Low-rise buildings - Large width to serve for heavy-goods traffic	- Industrial uses and factories, warehouses and workshops are intermingled with residential blocks. - Local industries mostly employ residents	
	South (El-Mahmoudeya Canal was the border of the expansion)	- Local management ran the city, managing the water supply, the street paving, and urban projects by using the income from local taxes - Planning the modern city and city centre part	- Straight streets, which are long and form a grid layout - The uniform order buildings - Apartment blocks built on small subdivisions of land. Building heights between two and ten storeys - Open space is available for public use	- Middle to low-income residents - Further south are even lower quality areas - Residential use - Commercial activities located on ground floors	

Table 2-5 Alexandria's Morphological Changes in its Urban Transformation 2nd Phase (1855-1905)

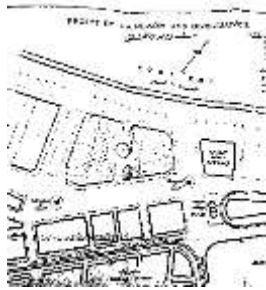


Dates and Events		Direction or redevelopment	Results	Physical	Spatial and activities	Maps	
3rd Phase (1905-1955)		East; -The urban waterfront development to the East	<ul style="list-style-type: none">- Booming economy- Powerful collectively in community projects- Mixture of businesses- Satisfying the new rising middle class with the projects that were close to the modern international style	Starting from the 1930s is the disappearing of the Cosmopolitan Society	<ul style="list-style-type: none">- A compact row of buildings along the Corniche- Unified height and architecture feature facades- A regular grid of streets and squares- Main streets run parallel to the coast, while secondary streets intersect with them at right angles- Formed a layout in an orderly way	<ul style="list-style-type: none">- Residential, educational and recreational uses- New commercial centres- Variety of retail, business and entertainment activities- Beaches line the coast, and the continuous promenade along the sea is a key tourist attraction- Public transportation to and from the city centre includes a tramway, buses and mini-buses	
		West (The built-up area expanded beyond the Western port)	<ul style="list-style-type: none">- City authorities planned the area by solving the transportation problems with a bus line- Did not attract a large number of people due to the existence of an industrial area and the lack of fresh water		<ul style="list-style-type: none">- Industrial use- Residential use for employees in the area- summer resort (El-Agamy)		
		South	<ul style="list-style-type: none">- Built up area spread to cover the entire gaps: North El-Mahmoudia Canal- A new residential area developed between El-Mahmoudia canal and the railway line- Attracted the low-income population- In1947, the total area of this new quarter was 1.440 km².		<ul style="list-style-type: none">- Residential use- Low cost of the land prices		

Table 2-6 Alexandria's Morphological Changes in its Urban Transformation 3rd Phase (1905-1955)


<i>Dates and Events</i>		<i>Direction or redevelopment</i>	<i>Results</i>	<i>Physical</i>	<i>Spatial and activities</i>	<i>Maps</i>
	- Abou-Kir included to Alexandria governorate (1955)	East	Expansion beyond El-Maamoura area		- New industrial sites developed	
		South-East	Residential area expanded with an industrial site		- Residential and industrial use	
		South-West	New suburbs appeared as El-Amreya and King Marriot at the south side of Mareotis lake		- Mixed activities in residential and industrial factories - King Mareot area before was a summer resort (villas and motels) - Now residential area throughout the seasons	
4th Phase (1955-1993)		The city centre changes	<ul style="list-style-type: none"> - Reserved their historic character but were losing residents to the eastern districts - Buildings in the city centre were often transformed into government and public offices, bureaux and other institutions - Rapid demolition of older buildings 	<ul style="list-style-type: none"> - An irregular grid of streets formed by the meeting of two grids; it gives the network a radial-like appearance centred on the Eastern Harbour - The main roads are parallel to the harbour running East-West and the secondary are perpendicular to the main North-South run - Squares' open spaces located on the margin of the defined centre - Almost continues skyline of buildings on an average height 20-25 m; it provided a sense of urban scale - European style, detailed facades 	<ul style="list-style-type: none"> - The city centre has a variety of uses developed throughout history: - Retail and other business are the main activities; ground floor reserved for public-related uses - 93% of street fronts are occupied by stores, banks, head offices or restaurants - Entertainment facilities (cinemas and theatres) - Residential use - The combination of both activities turn some streets into major pedestrian attractions - City's institutions located in the central area (Government offices and religious buildings) - Recreational activity along the Eastern harbour contribute to the vitality day and night 	

Table 2-7 Alexandria's Morphological Changes in its Urban Transformation 4th Phase (1955-1993)

2.9 Conclusion

The first part of this chapter reviewed the transformation of port cities in general, which led to the development of various assumptions that will be analysed and explored in the following chapters. As urbanity and water attracts overlapping communities of users, this causes complexity; this is further complicated by the shift and changes at the water edge which altered the form of cities. This will be analysed later, in Chapter 5 and Chapter 6, which concerns Alexandria's transformation and how the connection between the city and its urban frontier resulted in its appearance. Transformation and continuity, through social, economic and political changes, influenced the city and affected the quality of the social and morphological boundary, emphasising the port city's identity. Additionally, the literature established three characteristics, which are reflected in the urban spaces and waterfront of a port city, namely; perceptual (sense of place), social (diversity and complexity) and functional (accessibility). This is further explored in Chapter 3, which examines the people-based approach under these three characteristics.

The second part examined the Mediterranean Sea's cities and established the qualities that marked the unique historical evolution, and social and spatial transformations of these cities, who differ from other settlements exterior to the Mediterranean Sea. They emerged as essential cities from ancient times and their prosperity and development have largely flourished since. Ports were critical urban elements in the map of Early Modern Europe. They were the most prosperous cities of the time, achieving their prestige by engaging in a range of economic, social and cultural relations that marked their functionality within a particular region. Although the most important ports from the Renaissance period to the early to mid 16th Century were mainly mono-functional, drawing most of their prominence from their participation in the central state's expansion overseas, the ports of late 16th, 17th and 18th Centuries were significant gateways for products, people and ideas, which were exchanged throughout the world. Moreover, by the 19th Century, the Eastern Mediterranean port cities grew through a strong European influence; this was a period when the modernising efforts of the Ottoman state were at their peak.

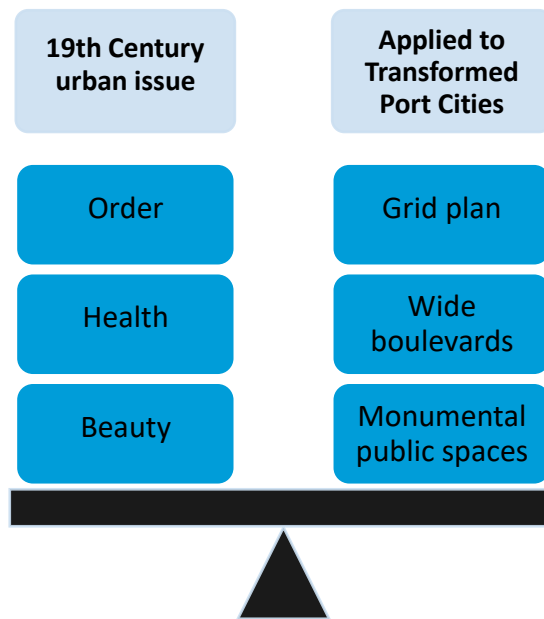


Figure 2-18 The 19th Century spatial changes in port cities that affected its physical appearance in transformation (Source: By author)

The modernisation of the Ottoman state and society under the strong influence of Europe predictably brought changes in the following areas:

- Administration and politics
- Socio-economics
- The spatial organisation of the cities
- The lifestyles of urban inhabitants

After analysing the effect of European/Western influence and the issue of the Tanzimat reforms, the chapter examined the transformation of the institutional structure of port cities, which resulted in changes to their political and administrative sphere. It analysed the effects of European influence and intervention on the socio-economic structure of cities in the context of trade relations, changing urban systems and the rise of port cities. The transformation of the socio-economic structure of the Ottoman Empire in the 19th Century resulted in significant changes to the urban physical structure of the port city. The changes occurred with the demands for new institutions and urban space from the new classes. The following two tables (Table 2-8 and 2.9) summarises the key findings from Chapter 2.

PORT CITIES IN GENERAL	URBANITY AND THE WATER
	<ul style="list-style-type: none"> Overlapped different communities of users caused complexity. Connected to human history and use. Water's edges have a history of shifting/changing forms and levels of use. Becoming potentially productive again and layered with public use.
	<i>Urban Waterfront</i>
	<ul style="list-style-type: none"> Used by humans for their utility in travel, trade, recreation, and enjoyment.
	<i>Waterfront as the Urban Frontier</i>
	<ul style="list-style-type: none"> The connection between the city and its urban frontier results in its appearance, transformation and continuity. “Spatial practice”, namely the continuity of social, economic and political processes, influence the city. External tensions and actors affected in the transformation processes that give the city the quality of social, cultural and morphological boundary that emphasises its identity
	<i>Port city characteristics reflected in its urban spaces and waterfront</i>
	<ul style="list-style-type: none"> Perceptual (Sense of place) Social (Diversity and complexity) Functional (Accessibility)
	Port cities have strong contact with economic and industrial development, as well as foreign influences and the social forces of mixed communities.
	<i>Similar to each other and different from other cities</i>
MEDITERRANEAN PORT CITIES	<ul style="list-style-type: none"> History. Evolution. Social. Spatial changes/ transformation.
	<i>Water, port and city relationship</i>
	<ul style="list-style-type: none"> Used to be closed and complex. Creating its central, the social life and activities. Physically and historically connected.
	<i>The similarity of Mediterranean port cities</i>
	<ul style="list-style-type: none"> Physical, morphological features and spatial transformation of the waterfront, use, life and urbanity. Panoramic city spreading around the curved harbour, integrated to enlarged port area. The various landscaping of each port has its individuality but strongly connected to the city core.

Table 2-8 The Key Findings of Port Cities in General and Mediterranean Port Cities
(Data from section 2.2 and 2.3)

OTTOMAN EMPIRE PORT CITIES	<i>POLITICAL AND ADMINISTRATIVE CHANGES</i>
	<ul style="list-style-type: none"> Increasing European influences and Tanzimat reforms. Regulations and laws of the Tanzimat era related to urban transformation (street and building regulations)
	<i>Socio-economic changes</i>
	<ul style="list-style-type: none"> Rise of port cities in the periods of European dominance; from 1800 to 1920s the urban centres moved to the coastal areas.
EASTERN MEDITERRANEAN PORT CITIES	<i>Spatial changes</i>
	<ul style="list-style-type: none"> 19th Century urban issues due increasing migration were: order, health and beauty. This was applied to Mediterranean port cities as grid plan (streets), wide boulevards (waterfronts) and monumental public spaces (squares and gardens) Reorganisation of the streets in straight forms, widening the streets, confiscating lands for public use, reorganising city administration and contributing new services. Creating a new city centre.
	<i>Transformation of the city</i>
	<ul style="list-style-type: none"> European architects and planners with urban aesthetics and ideas radiating from West European centres. Integration of art into the city and the civilising action of town planning as a tool for reshaping the urban setting and reforming public behaviour; this was based on a dual acknowledgement that: <ol style="list-style-type: none"> Urban aesthetics were the only form of art accessible to the urban masses, and The city's physical setting affected a citizen's way of life. Every city has its own set of symbolic spaces that embodies the collective memory of its residents through years of interaction and association.

Table 2-9 The Key Findings of The Ottoman Empire Port Cities in General and Eastern Mediterranean Port Cities (Data from section 2.4, 2.5 and 2.6)

The Rationale for the Selection of Alexandria as a Case Study

The review of the urban transformation of port cities in general and of the Ottoman Empire specifically provides an understanding of the complex and pluralistic culture of Alexandria as a cosmopolitan port city, by highlighting the urban transformation of the modern city. The rationale for the selection of Alexandria as a case study was due to its similarity with the previous studies. Alexandria, like Izmir and Thessaloniki, is a port city that changed throughout history and impacted on various settings. In particular, the transformation and modernisation under the influence of the Ottoman Empire and Europeans highlighted

particular urban characteristics, which reshaped the urban setting and resulted in new public behaviour. This was evident in urban spaces and waterfronts where functional, social and perceptual aspects were continually changing. Such a transformation demonstrated the importance and the qualities of public spaces, not only on a physical level but also as a stimulator of social life. This is mainly true in Alexandria where its old public spaces (squares) on the city centre waterfront play a critical role in the urban structure of the city and its residents' daily lives. Enhancing these public spaces requires further analysis to generate new knowledge about their quality, current and potential use, and prospects.

Because of its historical background, its richness, historical meaning and importance are associated with its built form. Different types of urban tissue still exist, providing a particular morphology with a variety of physical forms and spatial structures. Together they highlight the role of the city centre as a meeting point and the urban core of one of the most cosmopolitan cities in the Middle East. This morphological study exposes many material aspects of the particular culture of Alexandria. Additionally, it identifies the physical characteristics of the built form and the studies of the changed fabric, which provide indicators of the urban quality of the built environment of Alexandria and the quality changes to appearances that need to be addressed.

The facility of many spaces to sustain outdoor activities has declined significantly, the fact which severely affects the social image and role of the urban spaces in the city centre.

There is currently a threat to quality faced by the open public spaces in the city centre. The narrow streets cannot adapt to the consistently expanding volume of movement. With the substantial increase in population and number of street users, a clash arises between vehicular and pedestrian movement (Figure 2-19). A large number of vehicles block the stream of people on foot but also has a severe impact on both buildings and the functions they provide. While trying to manage congestion, many major roads have been exchanged for one-route activity, on-street parking has been limited, and other auto arranged controls and regulations encourage more traffic to flow through the centre (Figure 2-16). Furthermore, open spaces suffer from the effects of uncooperative renovation and redesign projects, the constant changes in use, and an absence of satisfactory public amenities. The ability of many spaces to maintain outdoor activities has fundamentally declined, which genuinely influences the social life of, and interactions within, the urban spaces of the Eastern Harbour and city centre.



Figure 2-19 Pedestrian and vehicles movements in Ahmed Orabi Square (Source: the researcher, 2013)



Figure 2-20 Vehicle traffic to flow through Mohamed Ali Square in the centre and parking areas and the overtaking illegal high rise building in the city centre and Turkish town (Source: the researcher, 2013)

3. Theoretical Underpinnings and Framework

3.1 Introduction

This chapter provides an exploration of prominent sources of literature and research in relation to the social life of public spaces on urban waterfronts. To explore the social life of public spaces means to understand the relationship between the public space as a setting and the people as users. Some significant research on the subject of urban public spaces is first presented to explore the key features of successful public spaces from the viewpoint of a people-based approach. This considers specific locations as waterfront public spaces; although such spaces may share similar key qualities with public spaces in other locations, those on waterfronts tend to possess unique elements to this type of space.

In order to meet the research objectives Obj.3 and Obj.4 (Table 1.1), the meaning of the open urban space is reviewed in relation to key concepts, such as the public realm and place, and alongside its importance to individuals and their societies. The theoretical exploration considers the key physical, functional, perceptual and social indicators in the collection and analysis of the data.

The chapter is divided into two parts as illustrated in Figure 3-1; the first will particularly explore the characteristics of the urban space and urban design of the following terms: Urban life, the people-based approach in good public spaces and public spaces on waterfronts. The section will also review the theories of the urban space as place and as part of the public realm, and its social dimension. Which affect the social life of public spaces and the complicated feelings and attitude that connect people to places (this informs Chapter 4., the key indicators in the social, functional and perceptual aspects to evaluate the transformed public spaces from the professionals' perception).

The second part will review aspects of users' reaction that refer to the perceived qualities of the urban space that makes it possible for users to interact with and with each other. This section aims to develop a theoretical framework to examine and evaluate users' reactions to urban space. This framework is based on functional, social and perceptual factors, which are driven by the concept of attachment and meaning affordance associated between the space and its users. This framework notes the distinctive characteristics of an urban space that incorporates, enhances, or facilitates the existence of attachment.

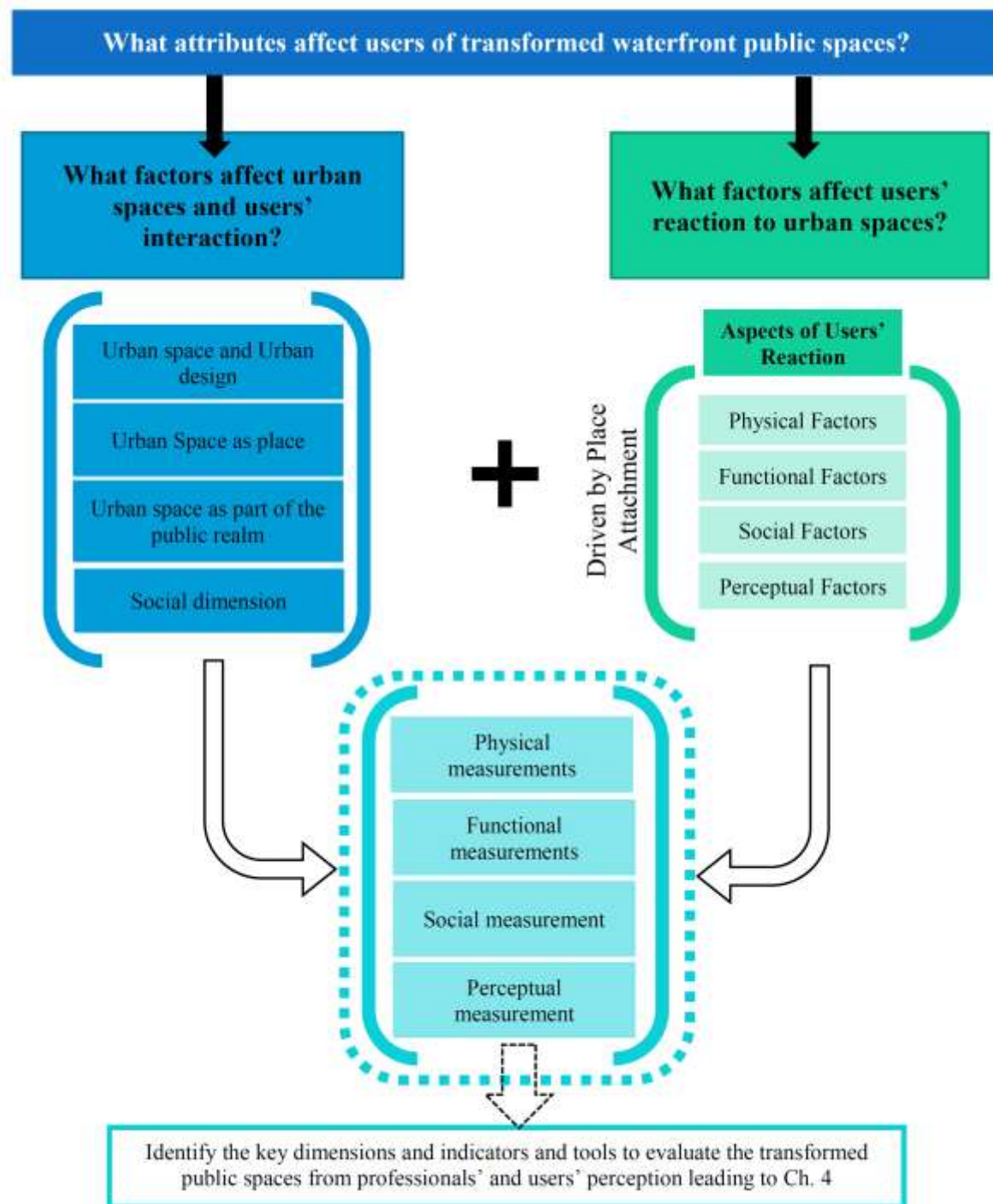


Figure 3-1 Chapter's Framework

3.2 Urban Space and Urban Design

The attribute "urban" means "... relating to, or characteristic of a town or city." (Oxford English Dictionary, 2017). Coward (2010) states that the expression "urban" has a double importance as it indicates the material conditions that constitute a town or a city, and the lifestyle particular to such material conditions. In other words, "urban" refers to both the physically built fabric that identifies the city as well as the particular experience of life in

such an environment. However, Larco (2003) indicates that "urban" is first a social condition and second, an arrangement of physical qualities (Physical attributes); thus, it is more about the human interaction than about the physical form.

Cities all over the world are midpoints of a population, an economy, its cultural production and use, and control. Harvey (1989) (Zieleniec, 2007) stated that the city is an urban framework that contains a geological distribution of human resources of great economic, social, psychological and symbolic significance. However, the city of the 21st Century is arguably in a state of crisis, threatened by crime, pollution, high population densities, and threats to safety (Haider and Kaplan, 2004). Although today's cities have residents from a variety of ethnic backgrounds, ideologies, faiths, and income groups, the resulting diversity has led, not to opportunity, but also to tension and fear (Corbett, 2004).

Moughtin (2007) argued urban design enables man to create a built environment that satisfies his needs and aspirations, and represents his values. The term "urban design" came into currency in the late 1950s (Tiesdell and Carmona, 2015) and has since been regarded from different points of view. Moreover, Moughtin (2007) provides a general definition as, "... *people's use of an accumulated technological knowledge to control and adapt the environment for social, economic, political and religious requirements*". Accordingly, Moughtin (2007, p.12) suggests that the city as a whole can be regarded as "*an element of a people's spiritual and physical culture and, indeed ... one of the highest expressions of this culture*".

Furthermore Cuthbert (2008) regards urban design as the study of the physical form of cities, and asserts that it concerns "*how civilizations have chosen to represent themselves in spatial form, and the processes through which specific urban forms come about*". Thus, , it is about the transmission of urban meaning in specific urban forms. Cuthbert (2008) also suggested that cities throughout history have evolved due to their specific natural constraints regarding their location, climate, or need for defence. Furthermore, functional, economic, political and religious factors have generated enormous complexity in the way cities have worked and how they have developed. As soon as some inhabitants locate themselves in a particular place, they begin their search for existence. Once their existence is established, a place attracts more waves of settlers. Urban spaces are then shaped, managed and supplied with an infrastructure in order to sustain their economic production and social reproduction, which subsequently leads to the growth of a city (Hayden, 2014).

In theory, public urban spaces are generally accessible to all citizens of a society, regardless of their gender, age, race, or socio-economic level. Throughout history, the city's public spaces reflect the needs of a society at a particular time. Jacobs (1993) writes extensively on the importance of public urban spaces generally and on streets specifically. In his view, urban spaces are what allow people to interact with each other and with the past. They are gateways to the urban experience and places of social encounter and exchange (Jacobs, 2013). Thus, human interaction with urban spaces imbues them with symbolic values and collective memory (Cuthbert, 2008).

3.2.1 Characteristics of Urban Life in Urban Open Spaces

Throughout history, the civic design of public spaces in the city has been an essential mechanism to demonstrate their appropriateness for sociability and daily interactions; thus, their vibrancy and usability depend on the physical quality and structure. Moreover, open urban spaces are the dynamic part of an urban setting, and public spaces provide the grounds that allow movement and mingling within a city; they point to the daily life of people, and contribute to the quality of people's lives through a specific set of functions (Carmona et al., 2012, Shaftoe, 2012, Francis et al., 2012, Francis, 2003, Carr et al., 1992). In the literature, different perspectives on open urban spaces are presented; these include the historical, physical (Lynch, 1960, Krier, 1979), social (Cybriwsky, 1999, Carr et al., 1992 , Lefebvre, 1992, Lefebvre and Nicholson-Smith, 1991), and symbolic (Montgomery, 1998, Madanipour, 1996, Punter, 1991, Canter and Canter, 1977b, Relph, 1976).

The physical quality of any open urban space plays a fundamental role in attracting people, and becomes an active space for a range of social activities (Madanipour, 2013a). Such spaces reflect the mix of residential, cultural, social, and financial characteristics, which illuminates their memory, accessibility, and sense (Butterworth, 2000). In this manner, open urban spaces adapt and modify the settings and surroundings that improve users' lives and affect their perception, reactions and engagement in city life (Salama et al., 2017).

Urban public spaces can function as attractive places that host, create and improve social interaction; this is an essential human need that, when fulfilled, enables personal and social improvement. Tibbalds (2012) states that urban spaces are essential features of the urban form that expect to provide regular social activities, offer suitable settings, and serve different functions that improve the quality of life of citizens. Throughout history, they have had different purposes and functions, including daily social interactions, trading and

exchange activities, and political and religious events. Furthermore, they have started to become settings for commerce and merchandising, awareness and knowledge, experience, culture and leisure. Canter and Canter (1977b) argued that spatial arrangements and historical characteristics are significant factors on which the appropriateness and functionality of any urban space relies. Additionally, most squares are used as meeting points and gathering spots where users spend time, and move and react to various activities. Moreover, the urban environment and its qualities affect its users, and this influence appears at various levels of user experience and effects their resulting behaviour. Accordingly, researchers have presented different approaches and methods to illustrate the factors that determine these influences, including perception, function, and human experience (Woolley, 2003).

The setting of the space and the social activities that are enacted within it are two dimensions that define urban spaces (Carmona (2010)). They have a shared correlation, where the physical arrangement supports social activity and, in the longer term, city life as a whole. Moreover, the social dimension is based on the qualities of an urban space including its street furniture, accessibility, safety and security, diversity of use and function. Gehl and Rogers (2013) note that the level of opportunities for social interaction and the diverse activities enacted indicate a successful urban space. Additionally, the perception of an urban place is an outcome of people's feeling, reactions, values and imprints (Montgomery, 1998). However, the perception of people in an urban space is not the same; this is due to subjective perceptions of its development and the different contributing human factors, including age, gender, cultural background, socio-economic strata and past experiences. Hence, the urban space could be accepted, experienced, used, observed and reacted in diverse ways by individuals.

Arguably, cities could not survive without urban spaces in which a wide range of individual, social and financial trades take place (Salama et al., 2017). As a result, open urban spaces are essential places for people to gather and connect; however, their significance fluctuates. Any urban square will influence the actions and behaviour of most social groups and its qualities affect the way in which it is used (Amin, 2008).

3.2.2 The People-Based Approach in Good Urban Public Spaces

Successful public spaces create strong connections between a place and users' personal lives. They should relate to users' physical and social background, whilst also reflect that culture,

history, topography, climate are different between each place. Various researchers (Carr et al., 1992) claim that the quality of public spaces represents an echo, or an image of the quality of a city's urban life. Moreover, urban spaces are a platform for public life as well as a background for everyday experiences, providing memories of places, and opportunities for escape and social interaction (Cattell et al., 2008). As the background of everyday experiences, urban spaces are mostly assessed on their shared and social features, and not only on their aesthetic points. Urban spaces hold subjective and individual meanings that accumulate over time which, for specific groups of people, become a location for remembering other places, for others, they become the locations for release and escape, and places in which people can pause from busy lives. Public squares are also meeting places for inhabitants, and thus provide a field for social activities and interactions. The urban public space has always been a meeting place, where people exchange greetings and information, and the setting to conduct everyday activities (Gehl and Svarre, 2013). Consequently, interactions between people and public spaces involve a continuous two-way process in which the setting influences public life and at the same time is influenced by people (Carmona, 2010).

Public space contains both physical and social dimensions; its physical dimensions relate to physical features that form a public space, and the social dimensions involve users' activities in the space that form the setting for many people and activities (Rapoport, 1990, 2016). Therefore, understanding the social dimensions of public spaces means considering people and their activities as part of the setting. Some leading sources of literature and research argue the importance of both the physical and social dimensions of urban spaces and that these dimensions influence each other. A people-based approach to well-used urban spaces provides some essential concepts for how to create public spaces for people. Thus, exploring how people use, and what they would like to experience, in public spaces provides an understanding of a potentially effective urban space.

3.2.2.1 Responsive Environment Criteria

The responsive criteria established by Bentley (1985), attempted to overcome the challenge of linking human experiences to design a responsive and successful urban space. Therefore, the responsive environment criteria have been selected to help build an understanding of the built environment that places its users' needs at the centre of its considerations. Key criteria include a fundamentally democratic setting, and enriching opportunities by maximising the

degree of choice available to provide responsive places. These criteria are composed of seven measures as summarised in Table 3-1.

Measures	Description
1. Legibility	<ul style="list-style-type: none"> The ease with which a person can comprehend the layout of a place, develop a mental map of their environment and be influenced to a significant degree by the form of the environment and the activities people undertake. Lynch (1960) discusses many features, such as paths, nodes, landmarks, districts and edges.
2. Personalisation	<ul style="list-style-type: none"> The capacity to customise an environment on a large or small scale. The opportunity for users to personalise places by 'putting a stamp on their environment'.
3. Permeability	<ul style="list-style-type: none"> The ease with which it is possible to move through an environment and depends heavily upon the paths and objects placed within the spaces. The greater the number of alternative routes through an environment, the greater people's freedom of movement and consequently, the greater the responsiveness of a place.
4. Visual Appropriateness	<ul style="list-style-type: none"> Strongly affects the interpretations people put on a place. How the physical design details can make people aware of the choice the place provides.
5. Robustness	<ul style="list-style-type: none"> Explores how a single space can be put to multiple uses. Influenced by temporal aspects. Can be used for many different purposes, offering their users more choice than others whose design and settings limit the users to a single fixed use.
6. Variety	<ul style="list-style-type: none"> Refers to the range of activities, people and building forms found in a space. The varied nature of users, forms and activities create a range of meanings and values, and the meanings may influence the variety of options available.
7. Richness	<ul style="list-style-type: none"> Relates to the range of sensory experiences available; for example, sight, smell, touch and sound. Concerned with how experience can affect the emotional state of those visiting the place.

Table 3-1 Responsive environment criteria (Source: adapted from Bentley (1985))

3.2.2.2 The External Aspects Criteria

The external aspects criteria established by Whyte (1980) detail the prominent physical factors of public spaces that influence the use of the space. He describes the six key components that influence the social life of public spaces. Table 3-2 provides descriptions of the aspects discussed by Whyte.

External Aspects	Description
1. Accessibility	<ul style="list-style-type: none"> The relationship of the space and to the street/main pedestrian is essential, (the area where the street and open spaces meet could be a key to the success or failure of a place). Street corner: A right square activates at the street corner. If it is a busy and engaged corner, it has an active social life of its own. Retailing (stores, windows with displays, signs, doorways).
2. Sitting space	<ul style="list-style-type: none"> Provides physically and socially comfortable sitting spaces. Design features, which are settable (steps, fountains, boundaries). Provides a range of different sitting heights. Gives choices to people with preference points.
3. Food	<ul style="list-style-type: none"> Food vendors attract people, and people attract other people.
4. Comfort (sun, wind, trees, and water)	<ul style="list-style-type: none"> Should allow access to the sun. Provides trees in public spaces (related to creating a microclimate). Water as an element of public spaces (fountains) should be touchable and reachable. Affording a good appearance of the passing scene and the pleasure of being comfortably under a tree, provide a satisfying enclosure; people feel 'held', 'protected' and thus safe.
5. Effective capacity	<ul style="list-style-type: none"> The places that carry the vast majority of people are the most efficient in the use of place as well as the most pleasant.
6. Triangulation (External stimulus provides a social bond between people and prompts strangers to interact with each other)	<ul style="list-style-type: none"> The stimulus: a physical object (sculpture, public art) or sight (street character, entertainers). Odds and ends of space: bus stops with overhead shelters, the furniture of the street.

Table 3-2 The external aspects criteria (Source: adapted from Whyte (1980))

3.2.2.3 Human Qualities for Public Spaces Criteria

Carr et al. (1992) established criteria to emphasise the importance of the human dimensions of a public space. The human dimensions explore people-place interactions, and are measured through users, their activities and experiences. Good public spaces should be responsive, democratic and meaningful. Thus, a responsive public space serves the needs of the users; it is democratic where different types of users have an equal right to use the space and have a similar sense of control within it. Moreover, it enables a specific balance between different user groups to avoid conflict. Thus, space becomes meaningful when it allows a

range of people to make strong connections between the place, their personal lives and the larger world.

Human qualities for the public space cover both physical and social dimensions, which focus on relations between users and place as well as interactions amongst the users. Carr et al. (1992) explained that applying these human dimensions to observations and the analysis of space enables an understanding of its contextual qualities. One of the key qualities mentioned is that public space should be meaningful.

Human Qualities	Description
1. Responsive (Physically, socially and activity)	
Comfort	People seek physical and psychological comfort (sitting space, shade and sun, safety and security, etc.)
Passive engagement	Passive and static experiences with a place and people within it. The possibility to observe people and settings.
Active engagement	Direct experiences with a place and the people within it. The possibility for social interaction with other people, physical contact with the elements of a place and its active use.
Relaxation & liveliness	Some people seek public space for relaxation and escape, and to experience natural elements, others seek dynamism and energy to engage with the life of the city.
Discovery	Diversity in physical design and changing views create the opportunity to observe physical qualities and human activities when people are moving through the site.
2. Democratic	
Right of access	Including physical, visual and symbolic access
Freedom of action	The layout of a public space should offer the chance for people to choose their desired activities.
Right of claim	The claim of space refers to a degree of spatial control and the opportunity to act freely and comfortably in a shared space at the same time.
Right of change	Public space can allow users to continually add and withdraw elements that facilitate desired activities.
3. Meaningful	
Place identity	The association and connection between the space and its context. A place needs to be relevant on a individual (satisfy the need) and cultural level.
Place experience	It must be comfortable enough to allow an experience with it to follow.
People-place connection	It should have connections to people; create a sense of belonging.

Table 3-3 Human qualities for public spaces criteria (Source: adapted from Carr et al. (1992))

To identify whether and how a particular public space is meaningful for users, it is essential to understand how individuals perceive and experience the public space. However, Relph (1976) argued that, although the meaning of places could be rooted in their physical setting and activities, such meanings belong to human intentions and experiences, and not to the places themselves. Thus, to explore this subject, several factors that influence how people perceive public space should be considered, which include: age, gender, ethnicity, lifestyle,

length of residence in the area, and the physical, social and cultural environment in which a person was raised (Carmona, 2010). However, a large group of people may share an familiar image of a public space, as they have been similarly socialised, and possess comparable experiences; these analogous facets are present in the perception of the urban environment (Carmona, 2010).

3.2.2.4 Convivial Urban Spaces

Shaftoe (2012) was interested in an integrated approach to create and maintain successful public spaces; this explored design and management within the context of urban policy and covered a comprehensive discussion on urban public spaces. He explained that there is no a single guideline to create successful urban public space, although these places often share some common elements. Shaftoe (2012) detailed these common elements under four categories, as presented in Table 3-4.

Category	Common Elements
1. Physical	
Plenty of sitting places. Good quality of robust. Adaptable. Irregular but well proportioned.	Not too large, or too small. Variety and interesting details. Carefully considered and appropriate horizontal surface treatments.
2. Geographical	
Location, reasonably central, surrounded by mixed-uses. Type of neighbourhood and surrounding areas.	Clusters, sequences and strings spaces. Relationship with transport.
3. Managerial	
Diversity of use. Promotion of relaxed, round the clock culture. Inclusiveness. Well-maintained and clean.	Vehicular circulation controlled. Satisfactorily lit. Plenty of human activities.
4. Psychological and sensual	
Human scale. Individuality and uniqueness. Comfortable and microclimate. Incorporation of natural elements.	Acoustically pleasant. No bad smell. Opportunities to eat and drink.

Table 3-4 Convivial urban spaces (Source: Adapted from Shaftoe (2012))

Similar to the Whyte's criteria, some common elements described by Shaftoe are based on the understanding of the continuous, two-way interaction between public spaces and users. Broad common elements suggest that successful public spaces are not only supported by their physical qualities but also considered in view of the quality of their relationship with their surroundings, including their social and psychological dimensions, and their managerial operations.

3.2.2.5 Quality of Built Environment

It is notable in the literature that the positive physical qualities of public spaces influence the quality of social life, as they attract more people. Carmona et al. (2012) point out that it is not the job of architects and planners to create a place; they only create place potential. Instead, a successful place depends merely on those who are using it. Therefore, successful public spaces can be measured by whether they encourage more people to come and actively used the area.

Dempsey (2011) stated that, in creating ‘place potential’, architects and planners should address three types of physical quality. Firstly, the visual-artistic quality relates to whether a public space is visually pleasing and has a strong character. Secondly, the social-usage quality relates to the quality of its connections, functions, legibility and safety. Finally, the ‘making places’ quality refers to its accessibility, inclusiveness and maintenance. Table 3-5 details the ‘place potential’ key and factors/descriptors of the built environment.

Category	Factors	Description	Creating Place Potential
1. Visual-Artistic quality			
	Visual pleasing	The presence of natural elements.	
	Strong character	Public arts and lighting.	
		Active group-floor design and surroundings.	
		The view of people’s activities.	
		Local context approach.	
2. Social-Usage quality			
	Connections	Well-connected pedestrian routes.	
	Functions	Mix use of spaces.	
	Legibility	Clear layout and legible physical elements.	
	Safety	The presence of other people in the space (social safety).	
3. Making-Places qualities			
	Accessibility	Easy access to the public space.	
	Inclusiveness	The presence of seating spaces and other supporting public facilities.	
	Maintenance	Welcoming and attracting environment.	
		Cleanliness and infrastructure maintenance.	

Table 3-5 Quality of built environment (Source: adapted from Dempsey (2011))

3.2.2.6 Place-Making Criteria

The Project for Public Spaces (PPS) is a nonprofit planning, design, and educational organisation that creates sustainable public spaces in order build a stronger community. PPS was founded in 1975 and has been involved in projects for over 2500 communities in 40 counties. It develops a multi-faceted approach to the planning, design and management of public spaces, called the ‘place-making’ approach. This approach was inspired by the work

of William H. Whyte and Jane Jacobs, who considered people in the practice of designing urban public spaces, and argued the importance of a lively neighbourhood and inviting public spaces. A place-making approach highlights contextual and local knowledge; it values the needs and goals of individuals who live, work and play in a specific space and aims to create functional public spaces that encourage people's health, happiness and well-being.

Based on their experiences, PPS has formulated four key qualities for positive public spaces. According to PPS, such public spaces serve as a stage for our public lives where events are held, social and economic interactions are present and cultures mix. These key qualities are: access and linkage, uses and activities, comfort and image and sociability (as listed in Table 3-6).

Key Qualities	Description
1. Linkage and Access	<ul style="list-style-type: none"> • It is easy to arrive at and pass through it. • It is visible both from near and far. • It has a high parking turnover, which is suitable for public transit. • It has to be visually and physically well-connected to its surroundings
2. Uses and Activities	<ul style="list-style-type: none"> • Having something to do in the place gives individuals the motivation to both come and return. • Providing a variety of well-managed activities for people of different ages to engage with.
3. Comfort and Image	<ul style="list-style-type: none"> • It includes perceptions about safety, cleanliness and the accessibility of sitting spots. • It is critical to give individuals the decision to sit where they need.
4. Sociability	<ul style="list-style-type: none"> • When users see companions, welcome their neighbours and feel good connecting with outsiders, they tend to feel a more grounded feeling of place or connection to their group and to the place that cultivates these sorts of social activities.

Table 3-6 Place-making criteria, based on PPS

In general, the concepts described in Table 3-6 show the importance of creating public spaces for people through a people-based approach. The presence of good quality public spaces influence people's decisions to visit public spaces. Public activities can be simplified into three categories according to their degree of need, namely; necessary, optional and social activities (Gehl, 2010). Necessary activities are those that people generally have to do and happen under all conditions; for example, going to work, waiting for the bus, etc. Optional activities refer to leisure and recreational pursuits that happen in particular times or places depending on the weather conditions and setting. Meanwhile, social activities refer to the

chances for interaction and only occur because of the presence of other people in a public space. Thus, considering the physical qualities when designing public spaces can increase the presence of optional and social activities within such spaces.

Moreover, Gehl (2010) mentioned that protection, security, a reasonable space, furniture, and visual quality are important in encouraging people to engage in outdoor activities other than just walking. Therefore, a public space should be sufficiently appealing to encourage more people to engage with optional activities, for instance making a trip to appreciate the view, taking a seat to enjoy the climate, and so forth. Furthermore, other dimensions that influence a successful public space include its relationship with the urban context, its psychological and social functions, and its use and activity management. Although these concepts mostly emerged from case studies conducted in Western public spaces, with certain adjustments some key elements seem applicable for any public space.

3.2.3 Characteristics of Public Spaces on Waterfronts

Urban waterfronts offer the potential to become great public spaces for a range of people. The presence of a natural body of water is the primary element of a waterfront public space. Whereas other types of public space, such squares and parks, tend to provide artificial water features, public spaces beside waterfronts have natural water as an important contributing feature (such as the sea in this research context). Generally, water has a positive image; it refreshes, cools, and elicits dynamic feelings that attract people to visit and experience it. Public spaces on waterfronts offer unique views of the city as people experience the urban sceneries from both land and water.

In developed cities, the creation of public spaces on waterfronts mostly marks a fundamental shift in their transformation. These areas have gradually been changed from working ports or industrial sites into leisure and recreational areas (Dovey, 2005, Doucet, 2010). Waterfronts have been, and will continue to be, at the centre of an urban transformation in waterfronts cities. Reshaping urban waterfronts helps to improve the image of cities; these transformations have also reconnected people to their waterfronts. Although new functions have been assigned to many urban waterfronts replacing their previous functions as ports, harbours or industrial sites, that is not the case with Alexandria's waterfront public spaces as these were created as recreational spaces for the public. Projects for urban waterfronts across the world have mostly aimed to create places with new forms of public amenity that offer activities for leisure, culture, commerce and hospitality (Campo, 2002, Doucet, 2010).

The different forms and functions of waterfronts public spaces can be identified worldwide. These functions and forms can be part of a city's historical structure, a redevelopment of its previous functions, or a completely new form. Generally, the forms of include sidewalks, promenades, gardens, squares and piers with various themes and facilities to support public activities.

3.2.3.1 Key Aspects and Design Elements of Public Spaces on Waterfronts

Each waterfront public space project develops its own contextual design guidelines that are unique to its project; these are mostly part of the urban waterfront guidelines of the city. Although there are no single fixed and prescriptive design standards for waterfront public spaces, there are some common fundamental guidelines that can be applied by exploring the sources of research and waterfront guidelines to analyse the design characteristics of waterfront public spaces, such as the ten qualities of great waterfront destinations which were developed by PPS.

Overall, the design features of public spaces on urban waterfronts highlight the importance of continuity, variety, connections and character.

- **Continuity** in design along the waterfront public spaces covers continuity in the spatial and visual forms of spaces; this includes walkways and views, and the use of consistent design themes along a waterfront.
- Incorporating **Variety** in spaces is essential through considering the range of opportunities for recreational and social activity.
- Public space design encourages the **connections** between the city, the waterfront and the water.
- **Character** involves strengthening the natural beauty of a waterfront and considering the existing character of the city and its surroundings.

Continuity, variety, connection and the character of public spaces on waterfronts can be achieved by implementing key features and design elements based on the design elements guidelines shown in Table 3-7.

Key Features	Design Elements and Implementations
Water attraction <i>'The presence of a natural water body is an important attraction on public spaces.'</i>	<ul style="list-style-type: none"> • Clean water body and a healthy environment. • Active and passive activities on the waterfront.
Accessibility <i>'Clear and visible access into public space for everyone should include physical, visual and symbolic access.'</i>	<ul style="list-style-type: none"> • Physical access; including direct access into the spaces and water, clear direction of movement, trails for different users (sidewalks, disabled access ramps). • Visual access; including view sites (significant views of the water and across the water, views of activities on the water, views to the city from public spaces, views along the spaces) and street views (streets that connect to the waterfront should have visual access to the public spaces). • Symbolic access; including the presence of commercial facilities: adjacent to public access and open space (the presence of affordable eating place, locally run shops or restaurants, vendors)
Public amenities <i>'Public facilities provided to give physical and psychological comfort to the users should be well-maintained and good in quality.'</i>	<ul style="list-style-type: none"> • Sitting opportunities in different forms and orientations. • Availability of sheltered and shaded spaces. • Incorporated lighting. • Other vital elements, such as public restrooms, garbage bins and signage.
Use and activity <i>'Provide choice for different public activities to appear; use and activities should generate social interactions, and various users should have their rights to claim, action and change.'</i>	<ul style="list-style-type: none"> • Different forms of space for different uses, ranging from passive to active engagement. • Flexible design and a loose space to encourage different activities to appear. • Contextual activities and uses; cultural and social events.
Identity <i>'Public space should entail meaningful physical and social values to the city and the inhabitants.'</i>	<ul style="list-style-type: none"> • Reusing existing valuable urban layers; including the creation of relevant new uses for historical buildings, reusing materials from the past on a new urban waterfront design. • Contextual architectural designs styles . • Public uses of the ground floor of the buildings to provide inviting facades.
Maintenance and management <i>'Maintaining both physical and human qualities of public space to make sure these spaces work well for people.'</i>	<ul style="list-style-type: none"> • Clear maintenance management of public amenities, infrastructures and activities. • Partnership between city agencies, property owners, waterfront business and community organisations to ensure that the public space is operated for the benefit of all groups.

Table 3-7 Key aspects and design elements of public spaces on waterfronts based on PPS

3.2.3.2 The Function of Waterfront Public Space in Urban Settings

Generally, individuals feel comforted when experiencing natural elements in a scene. Some of these feelings involve visual stimuli, but natural elements are also experienced through hearing, smell and sense of touch. However, the most impressive and common sensual experience for people is that of water (Whyte, 1980). For this reason, many maritime cities have created or regenerated waterfront spaces.

3.2.3.2.1 Communication Function

Communication includes a combination of features, such as transport, commerce and industry. It has taken a central role in society as a place of production, exchange and culture, mixed with people, goods and information, as discussed in Chapter 2. Recently, as interest in the city's image increases, the urban waterfront is also considered a place of beauty.

3.2.3.2.2 Image of a City

However, urban waterfronts have changed their spatial character according to the needs of the time. In pre-industrial times, they were central places for the formation and development of cities as a function of drinking water, farming (fresh water), trading and exchange, fishing, and transportation. In the era of industrialisation, the urban waterfront spaces were polluted and became separate spaces due to the adding and strengthening of a city's manufacturing capabilities. According to the Waterfront Centre (1999), waterfronts are a limited resource that symbolise the unique history and character of each community. However, today, land supply to the city is difficult, while citizens' desire for nature and a good quality of life has increased. Therefore, the urban waterfront has become a place of opportunity, which takes partial charge of the city features and provides a pleasant environment. In addition, through sustainable development many cities are creating unique and attractive waterfront spaces, which are in unity with the natural environment (sea) and their urban areas.

3.3 Urban Space as Place

The 'place' is of increasing interest in cultural geography, environmental psychology and anthropology. It has become a significant research issue in urban planning and urban design since the mid 20th Century, when concerns were initially expressed about the loss of individuality and uniqueness between different places. Many urban design theorists wrote about urban space and place, dissatisfied by "*the increasing homogeneity and soullessness of mid-Twentieth-Century urban spaces*" (Larice and Macdonald, 2013) p.117). Tiesdell

and Carmona (2015) echo that which Tibbalds (2012) calls the “golden rule” of urban design, where “places matter most”; thus, Tibbalds suggests that the creation of places through good urban design is more important than the design of individual buildings of which these spaces/places are composed.

However, it is important to determine what is meant by place as its conceptualisation remains vague, with scholars generalising its meaning and applying mixed or overlapping terms. Thus, some believe that it is easier to see its results in human behaviour than to define precise terms. This difficulty arose as the concept of place is a mental production besides a location and physical entity.

Many scholars have suggested a variety of definitions of place. First, the geographer Edward Relph (Larice and Macdonald, 2013) p.117) saw it as a “*directly experienced phenomena of the lived-world and hence ... full with meanings, with real objects, and on-going activities*”. Other scholars suggested similar concepts that support this definition. For example, Tuan (1977) argued that a place comes into existence when humans give meaning to part of the larger, homogeneous space, through their lifetime experiences. Accordingly, it is possible to state that place is a space gifted with meaning. However, De Certeau and Rendall (2011) argued that space transforms into a place through narrative. Additionally, they stated that places are in a continuous process of redefinition through their weight of cultural significance, spatial occupation and representation.

A place is given meaning, not only by one's direct experience, but also by the inheritance from ones' family, or one's ethnic or religious group: this arises via different media throughout the generations. Indeed, Crang (2013) highlights the role of time in ‘place-making’, stating that spaces become places as they become “*time-thickened*” and this is because they have “*a past and a future that binds people together round them*”. The humanistic concept of place, which is drawn mainly from phenomenology, links events, attitudes, and places to create an attachment. Accordingly, an urban space becomes a place through its uses and its users' associated behaviours, memories, and backgrounds throughout time.

The difference between space and place is one of the critical discussions in human geography. For geographers, space can be observed either as an absolute, relative or cognitive (or social) space (illustrated in Table 3-8).

Absolute Space	Relative Space		Cognitive Space
Mathematical space	Socio-economic space	Cultural Space	Behaviour space
Points Lines Areas Planes	Sites Situations Routes Regions	Places Ways Territories Domains	Landmarks Paths Districts Environments
Configurations	Distributions	World	Spatial Layout

Table 3-8 Different kinds of spaces as analysed in human geography (Dessouki, 2012)

Absolute space is a comprehension of space as a distinct, physical and natural or empirical entity. For relative space, the location of different zones or areas, and the distance between them are key, while cognitive space states that space and place are inherent parts defined by people's values, feelings, beliefs, and perceptions about locations, districts, and regions. People relate to other individuals and their physical environment, and this cognitive space draws people's intentions and actions, either consciously or unconsciously (Dessouki, 2012).

Lynch (1960) noted a sequence of cognitive spaces as five key elements of the urban form. He started with paths, which form a critical component of the urban spatial structure or the framework of a city, and are the primary element of the identification of a city, linking all other components, such as streets, walkways, canals and railways, as movement channels. Secondly, he stated that the district that should have individual characteristics and functions should be distinct from its surroundings; for example, a residential or commercial identity. These individual districts usually have particular characteristics, due to their social, historical and cultural identity and community function. The third element, according to Lynch, involves the edges, which either represent the changes of natural topography or synthetic forms, such as shorelines, waterfronts or street walls. These identify a separate physical urban environment, and guide the perception of change from one district to another. The fourth element is the node, which Lynch confirms is a gathering place, and an essential focal point relating to people's daily life, such as junctions or squares and street corners. The core of a city, as a whole, can be considered as a node. Finally, Lynch states that the landmark is another type of focal point in the city. It is a unique point in the urban environment, distinguished from its surroundings. This can be a natural topography, trees, buildings or any other particular feature. Landmarks provide orientation and hint at the surrounding urban structure.

Nevertheless, Lefebvre (1991) argues that absolute space cannot exist because the moment it is occupied through social activity; it therefore shifts to become a relative space (Hubbard,

2005). Meanwhile, places have diverse meanings for different individuals and groups. Social scientists use the terms “sense of place”, or “place attachment” as central concepts to describe the complicated feelings and attitudes that connect people to places. These terms are usually adopted as integrating and synonymous concepts that capture people's subjective experiences about the physical world, including the affective, cognitive, environmental, psychological, and socio-cultural processes. The following parts identify these concepts.

3.3.1 Theory of Place

Theorists within urban design, such as Relph (1976), Canter and Canter (1977b), Punter (1991) and Montgomery (1998), have presented the components of place and the relationships among them. For example, Relph (1983) stated that every place has a unique address which ensures its recognisability; he argues that the “physical setting”, “activities” and “meanings” constitute three essential elements of place. Moreover, Canter and Canter (1977b) introduced two questions; firstly, what are the main components which integrate to create a place, and secondly, what procedures are available to identify places and their attributes? These questions were addressed by developing a conceptual diagram of the components of place. Moreover, by drawing on Relph’s conceptual diagram, Canter introduced places as a function of “activities”, “physical attributes” and “conceptions.” The resulting conceptual diagram is shown in Figure 3-2.

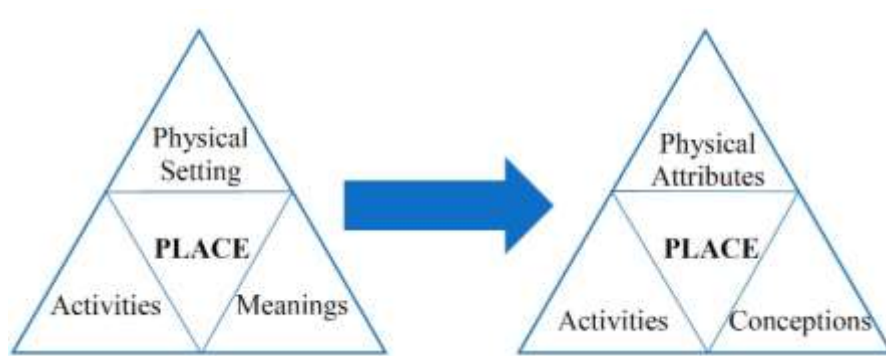


Figure 3-2 Basic elements of urban place based on Relph (1976) and Canter’s (1977) models

This model indicates that the potential relationships among actions, conceptions and physical attributes will lead to the creation of a place. The identification process for a place starts with any of the main components; physical attributes, activities or meanings. Thus, it is important to determine: what activity is associated with, or expected to take place within, a given place; what the physical features or settings are, and what conceptions people hold of that activity within the physical environment. By focusing on these three components, it is possible to

look for physical attributes that are most likely to link with other place components, such as activities (Canter, 1977).

Measures of place identification involve both the variety of activities taking place within it and the physical setting of the place. This could be followed by an investigation into how people identify the main components of places of interest through sketching or describing a place; this can include how people feel about a place, and what they do within it. Some places may be described more explicitly than others, with specific associated activity patterns. Alternatively, this could occur through a direct observation based on information concerning what happens where (Canter, 1977). The procedures for identifying and describing places provide a valuable link to design decision-making. These procedures have the potential of being used during the design process, to indicate the nature and characteristics of the places produced. Thus, Canter (1977) emphasises that three methods can lead to the characterisation of place: sketching, which reflects the physical attributes; description, such as conceptions; and activity mapping, which is representative of activities and indicates who does what and where (Canter, 1977).

Building on Relph and Canter's ideas, Punter's (1991) work provided more detail on the components of a place and linked these components with urban design principles (Figure 3-3). Additionally, Montgomery (1998) developed a model that included all the components of place as physical setting, activity and image. His model is the most recent reinterpretation of the components of place and indicates the relationships amongst them. He emphasised that this model will identify the quality or characteristics of a place more precisely and states that design can contribute to, and enhance the potential sense of, place. According to these components and the associated detailed attributes, (Montgomery, 1998) believes that this presents an opportunity to develop a set of design principles to introduce and create an urban space.

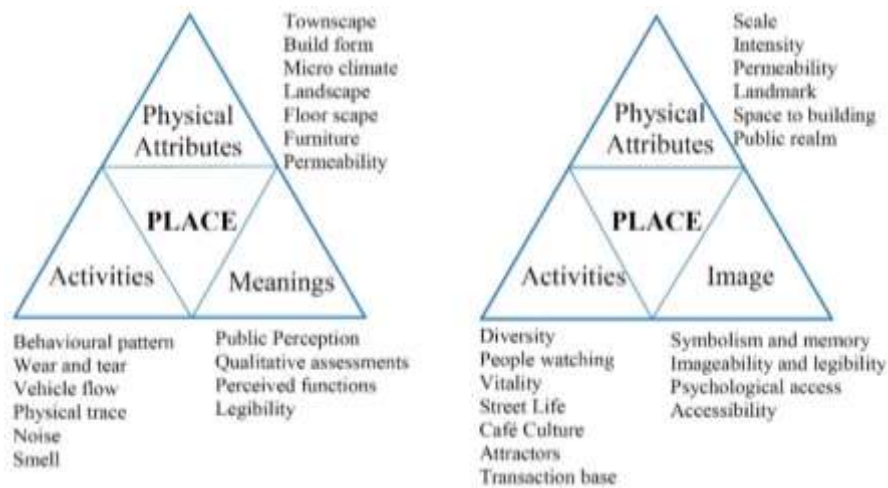


Figure 3-3 Basic elements of urban place based on Punter (1991) and Montgomery's (1998) models

3.3.2 Place Attachment

The feeling associated with living in an environment that has specific boundaries and a particular identity is recognised as a basic human need. Place attachment is about the bonds that people develop with places. Places apply their influence through their physical features and symbolic meanings. One way in which identity is connected to a particular place is through the feeling that one belongs to that place. It is a place that people feel comfortable because part of how they define themselves is symbolised by certain qualities of that place (McDowell, 2008).

Scannell and Gifford (2010) proposed a three-dimensional framework of place attachment that usefully structures the variety of definitions in the literature. The framework proposes that place attachment is a multidimensional concept concerning a person, psychological processes, and place dimensions (Figure 3-4).

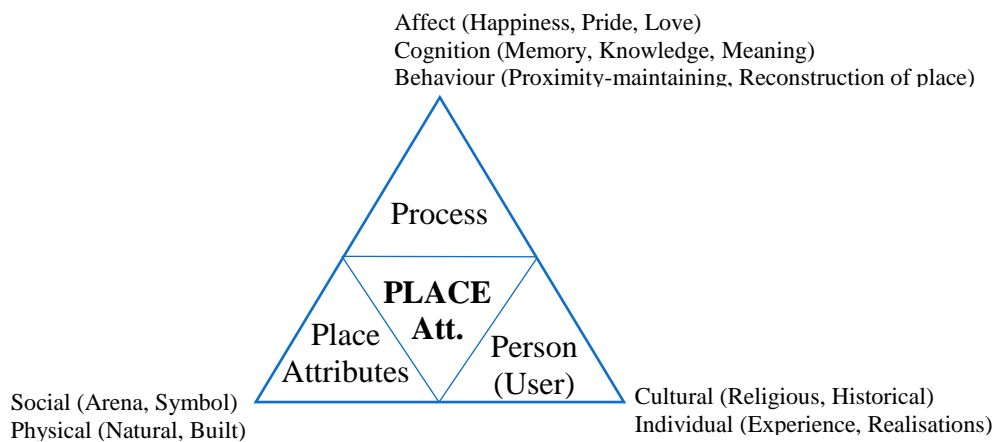


Figure 3-4 Basic elements of place attachment based on Scannell and Gifford's (2010) model

The first element is the person (user), which concerns the following questions: who is attached or connected; to what degree is the user attached or connected to the place, and is the value or meaning based on an individual's or group's perception? The second measurement is the psychological process, which asks: how are affect, cognition, and behaviour exposed in the attachment? The third measurement is the object of the attachment, which includes the place characteristics: this asks, what is the attachment to, and what is the nature of this place? Thus, according to this model, place attachment is a bond between an individual or group and a place that can vary on its spatial level, degree of specificity, and social or physical features; this is expressed through affective, cognitive, and behavioural psychological processes.

3.3.3 Place Identity

According to Lewicka (2008), the term 'place identity' entails two different meanings, as shown in Table 3-9. It can refer to the characteristics of a place (a physical perspective) or the characteristics of persons (a psychological perspective).

Place Identity as:	Description
Characteristic of places	
	<ul style="list-style-type: none"> • A set of place features that assures its uniqueness and continuity in time. • The concept of "genius loci" (the unique spirit of the place) reveals this meaning. • It is used to describe the intangible but generally agrees upon the unique character of a place.
Characteristic of persons	
	<ul style="list-style-type: none"> • Dimensions of one's self that characterises the individual personality and identity in connection to the physical environment. • Place, accordingly, is a means to distinguish oneself from others, to preserve a sense of continuity, to build positive self-esteem, and to create a sense of self-efficacy. • Places become symbolic extensions of the self as people accumulate memories and life experiences and install their personal history and meanings in the built environment.

Table 3-9 Place identity (Source: Adapted from Lewicka (2008))

Building on the geographical meaning, Relph (1983) emphasises that place identity can be established from the following three consistent components; firstly, the place's static physical settings or appearance; secondly, the observable activities and functions within the place, and finally, the meanings or symbols related to it (Figure 3-5). Both foreigners/strangers and inhabitants can have a sense of place, which does not have to be equal (Relph, 1983).

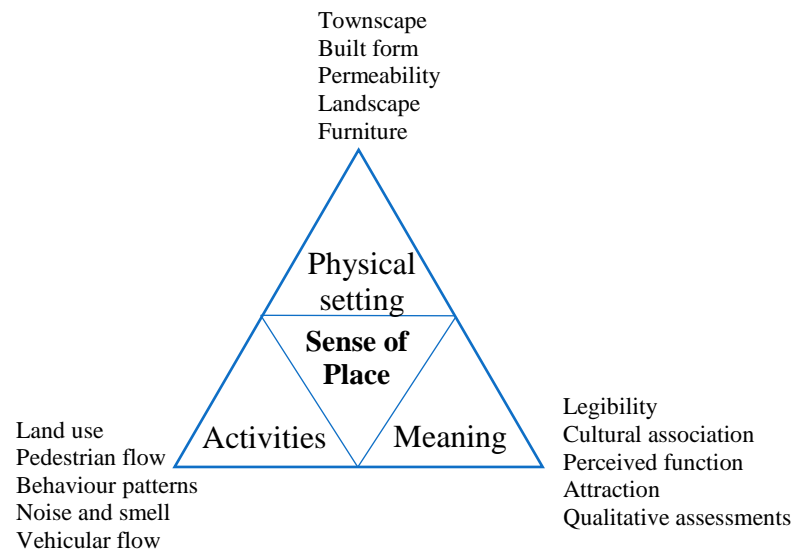


Figure 3-5 Basic elements of sense of place related to Relph (1983)

Similarly, the term sense of place can be characterised as an accumulation of symbolic meanings, attachment and satisfaction with a spatial setting carried by an individual or group. This concept is established by other parameters, or factors, of place, such as culture and heritage, site and ecology, and the political economy of place (Kural, 2007). Lynch (1984) defines the sense of place as the ease that the place's elements can be linked to other places or events to form a mental representation of time and space that considers non-spatial elements and value.

3.4 Urban Space as Part of the Public Realm

One of the essential mechanisms of urban life is the public realm. It states that this is the space where public social life takes place in all its forms and refers to a variety of social relations. Therefore, according to Montgomery (1998), urban public places are spaces for public meeting in which communication exchanges and social interactions take place. Furthermore, in the last two centuries, the public space as grounds for the establishment of a public society has increased in importance.

Madanipour (1996) claimed that urban space is a public realm in which people share a ground for social, functional or ritual activities. He defined such space as open to the public; moreover, it is uncontrolled by organisations or private individuals, and therefore characterised by its diversity of users, allowing different groups of people with different genders, ages, ethnicities and classes to interact.

Gehl (2011) debated that the public realm in urban space sustains three roles; firstly, as places to interact with others, secondly, as passages of movement, and finally, as marketplaces in which to conduct transactions. According to Brill (1989), the urban public space has four primary functions; firstly, it is a place of group action which symbolises their power and ideas; secondly, it is a shared ground where strangers meet; thirdly, it is a place where people learn about social interactions, and finally it is a kind of forum. However, the diversity of activities and events in public space also establish the meaning, identity and image of that public space. The experience of the public space by people is therefore sustained by events (Montgomery, 1998). Furthermore, Madanipour (2004) suggests that public space is a place that sets a social relationship with others and offers a link with previous generations through their experience of the same place. The shared experience emphasises a sense of personal continuity of public spaces as places of remembrance and personal memories.

Currently, the phrase “public realm” is commonly argued by many disciplines, such as urban planning, urban design and sociology. It is mostly accepted that urban space is a public realm where communication exchange, social interaction and political conflict take place, although today, social and cultural transformations have begun to affect the public realm of cities.

3.5 The Social Dimension

This part illustrates and links some concepts from different disciplines, to conceptualise the role played by urban space in today’s societies. Cities are composed of complex social networks that describe the experience of the urban environment. Indeed, human society and culture exist in and through communication, and the built environment is part of this communication framework (Bornberg, 2008). Accordingly, urban spaces act as a social stimulus; they are places where city residents meet to create and maintain social connections and friendships and take part in discussion. They are essential in establishing the identity and culture of a city and the sense of unity and belonging of its inhabitants (Foth and Sanders, 2005).

Lefebvre (1992) emphasised the significance of space and spatiality and the role of urban space as a juncture for social interaction. He suggested that any attempt to understand the contemporary world that ignores spatial considerations is partial and incomplete. He also stated that an, “*authentic knowledge of space must address the question of its production*”. (1992) p.388). However, Hayden (1997) argued that “*space is permeated with social relations; it is not only supported by social relations, but it is also producing and produced by social relations*”. Lefebvre (1992) also introduced the concept of social space, which he understood as being at once physical and conceptual. Dessouki (2012) stated that social space is the realm in which the cultural life of a society is achieved, and suggests that space is not a passive, neutral, or a pre-existing given, but instead, an on-going production and generation of social relations. Thus, space is both a setting for, and a result of, human interaction. Fallan (2008) similarly argues that architecture is socially shaped. but also advocates that it informs social behaviour, while users are continuously changed by their social interactions and activities.

Urban space is emitted by society and produced by patterns of social interaction, yet also forces itself on its users and accordingly shapes society. Most recent studies of the built environment and human behaviour emphasise that social factors are important in understanding and anticipating the interaction patterns of people within the environment.

Carmona et al. (2012) noted that understanding the relationship between people (society) and their environment (space) is an essential component in urban design. They explain that the connection between people and their environment is best perceived as, “*a continuous two-way process in which people create and modify spaces while at the same time being influenced in various ways by those spaces*”.

Arguably, in any environment, the decisions people make are influenced and impacted by both society and culture, where society can be observed as a group of people in a specific area where there are mutual habits, regular interactions, a unique culture, and societies. Moreover, Carmona et al. (2012) claimed that culture is probably best assumed in an anthropological sense as a “*particular way of life, which expresses certain meaning and values not only on art and learning, but also institutions and ordinary behaviour*”. However, Porteous (1977) argued that social connections depend on social stimulation and reaction, which, in brief, becomes the stimulation of another response. Moreover, he emphasised that personality attributes (e.g. faith and belief, religion, preferences and attitudes) develop from

the person, although they are influenced by their experiences within a national, cultural and ethnic context, and by their social strata, family and lifestyle. Therefore, social interaction, and urban life and sociability are discussed further to enhance the understanding of the social dimension of open public spaces.

3.5.1 Social Interaction

The vital role of an urban space is to offer significance to users' lives by affording an environment for daily gathering, interaction and by hosting social activities (Carr et al., 1992, Behrens and Watson, 1996). Moreover, urban spaces offer a recreational, relaxing, commercial environment to people and influence their social interactions. Interaction can be influenced by the physical distance between users (Lang, 1987), as facial expressions can be distinguished at a maximum distance of 25 meters. Marcus and Francis (1998, p.36) mentioned this statistic in their discussion on design guidelines for a public square: *'large plazas should be divided into subspaces to encourage their use.'* Hall (1963) classified proxemics into four types, as detailed in Table 3-10 and Figure 3-6.

Proxemics	Description	Distance
Intimate Space		
	It is the private area immediately surrounding the individual's body. It involves both physical and emotional interactions.	(0-50 cm)
Personal Space		
	It is that area within which a person allows only select friends or people with whom personal conversation is mandatory.	(1.2 m)
Social Space		
	It is that area within which a person expects to make social contacts on a temporary basis.	(4 m)
Public Space		
	It is that area within which a person does not expect to have direct contact with others.	(12 m)

Table 3-10 Proxemics Classification (Source: adapted from Hall (1963))

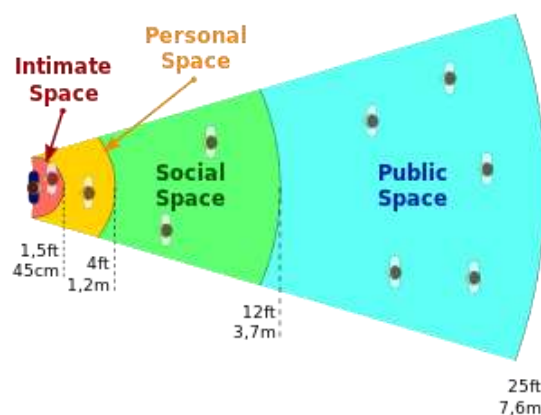


Figure 3-6 Proxemics Diagram

Some scholars argue that increasing the distance, results in a decrease in the exchange of information. This is significant as Lang (1987) confirmed that interaction is essential in maintaining the relationship between users and thus offering a sense of belonging, which represents a basic human need.

Alexander (1966) clarifies that the essential connection between people requires general and repeated casual gatherings to grow, driving people to be more affectionate. He additionally recommends that collaboration among persons with various backgrounds and cultures enhance the attitudes that groups may have towards each other. Kostof (1999) identifies two measurements of the social use of open spaces, which are described in Table 3-11.

Measurements of the Social Use	Description
Familiarity and chance of meeting	
	People have a habit of going to public spaces, like squares and gardens, to meet their family, friends or social group yet they have the chance to also meet and interact with unknown people.
Traditional features	
	Public spaces are shared between different communities and groups with different traditional activities that can take place in the space.

Table 3-11 Measurements of the Social Use (Source: Adapted from Kostof (1999))

3.5.2 Urban Life and Sociability

It can be contended that the need for attachment, and for interaction invigorates people to mingle with others. Attachment and belonging meet people through taking an interest in a social framework that is sufficiently steady with the aim that they accomplish comfort on the psychological level. There is also a connection between urban life and sociability, which will be investigated further in section 3.5. When urban space, or the environment, do not have specific the necessary components, like comfort, use or physical facilities, sociability in such spaces will be unpleasantly influenced. This is because sociability succeeds through the accessibility of its fundamental necessities, including physical facilities, activity and safety (Lang, 1994a, Gehl, 2007)

Generally, the human priority is to achieve their basic needs; once they have achieved these, people will start to seek the sense of belonging and to become a part of a group. For this purpose, they aim to enjoy affection, provide support and form an identity (Lang, 1994b). Considering, the variances between individuals and groups, relationships can be established in diverse forms; however, such needs can be achieved by meeting others, such as in public

settings. This sense of belonging can also be perceived as a connection between people and place.

3.6 Users' reaction to urban spaces

Users' reactions to public spaces depend on the affordance of the space, namely the quality and potential utilities and usage that the space suggests to them. Affordance, as a term, was created by the perceptual psychologist, Gibson (2014). He discussed the qualities and characteristics of the physical world that afforded (i.e., enable, foster, support, or suggest) the possibility of an interaction. He determined that the qualities of an object, an assemblage of objects, or an environment allows an individual to act. Thus, according to (Gibson, 2014) p.119, *"The affordances of the environment are what it offers... what it provides or furnishes, either for good or ill"*.

Gibson's interpretation of affordance is the physical attributes of the arrangement or configuration of an object or setting that allows it to be used for activities. He recommended that people identify opportunities for action in a location or setting by perceiving the affordances of either items or entities within the location or the environment. Thus, for a setting to be chosen or favoured over others, it must afford the functions that are important and meaningful to people, and may afford activities that other locations do not support (Clark and Uzzell, 2006). Therefore, leisure and attractiveness can be considered as affordances since they reflect an assessment of the setting and its compatibility with human needs and purposes, which influences human activities in the settings (Kaplan et al., 1989)

This concern has been expanded by Lang (1994a) within environmental design theory, where the affordances also provide meanings and a visual appreciation for human experiences. According to Lang (1994b), the affordances of a particular pattern of the built environment are the property of its layout and design, of the materials in which it is built, and the way it informs its inhabitants or users. Thus, in the context of urban design, a chair in an urban space affords seating and relaxation; a zebra crossing affords the right for a pedestrian to cross a route. Moreover, an outdoor, safe, enclosed space becomes a square where people can gather, communicate, and interact. A physical attribute of the urban space can give rise to positive and negative affordances at the same time for different users or people, depending on their knowledge and culture and the nature of their attachment to a space. Affordance is, therefore, a useful conceptual tool for urban designers and can be used to understand why people interact with specific urban spaces in specific ways while overlooking other spaces.

This links with the next section, which examines the indicators of urban spaces and their impact on users' reactions.

3.6.1 Aspects of Users' Reaction to Urban Spaces

The urban environment is a multifaceted network that includes people and objects, and the relationship between them. Based on the previously-discussed conceptions, the term "users' reactions" toward urban space is suggested to refer to the perceived qualities of the urban space that makes it possible for users to interact with and with each other. Thus, this is driven by place attachment.

This part of the study aims to develop a theoretical framework to examine and evaluate users' reactions to an urban space. This framework is based on functional, social and perceptual factors, which are driven by the concept of attachment and meaning affordance associated between the space and its users. This framework notes the distinctive characteristics of an urban space that incorporates, enhances, or facilitates the existence of attachment.

This section is arranged around three key attributes of open urban space: functional, social and perceptual. These attributes developed from the discussions regarding the definitions of urban space, its importance and the concept of urban space as a place (in sections 3.1, 3.2, 3.3 and 3.4). They mostly relate to Relph's components of place identity, namely:

- (a) the place's static physical settings or appearance (Functional)
- (b) the observable activities and functions therein (Social), and
- (c) the meanings or symbols related to it (perceptual).

These qualities are examined because there is a need to comprehend what they are and what they involve in order to use them as criteria to evaluate spaces from users' perspectives. The following sub-sections discuss each factor and its aspects in detail.

3.6.1.1 Physical Factors

In this part, the qualities of urban space are examined to investigate the physical and spatial elements of the built environment, and their impact on users' perceptions, behaviours and needs in an urban space. However, physical qualities can be assessed under the social, functional and perceptual aspect, as shown in Figure 3-6.

Various scholars and urban designers categorise the physical structure of the urban fabric as urban morphology (Conzen, 1960, Clark Audrey, 1985, Madanipour, 1996, Carmona et al.,

2012). From a morphological perceptive, the analysis of urban space is based on its morphological characteristics, which includes its urban form, layout and the shape of settlements (Carmona et al., 2012). Moreover, Conzen (1960) and Carmona et al. (2012) argue that communities can be observed through various key elements, such as land use, building structures, plot patterns and street patterns. Similarly, Madanipour (1996, p.53) defines urban morphology as, “*the systematic study of the form, shape, plan, structure and function of the built fabric of town and cities, and the origin and the way in which this fabric has evolved over time*”. Meanwhile, Kim (2012) suggests that the term is fundamentally about form.

3.6.1.1.1 Urban Form

The urban form has been characterised from various perspectives because a range of disciplines have studied it. It has been characterised as the geometry of three mechanisms; street network or layout, the architectural style of buildings, and land use (Madanipour, 1996). The urban form was defined by Madanipour (1996) as a two-dimensional perspective that includes the physical expansion and development of the urban form and its pattern, while Kim (2012) considers the urban form as shape, size, pattern, layout and structure.

The urban form of a city is defined as the spatial patterns or establishment of individual elements, like the built environment, social group, society, economic activities, buildings and land uses (Bourne, 1982). However, in urban design, the physical attributes are defined as land use, building form, circulation, open space, pedestrian ways, activity support, and signage (Shirvani, 1985). The multiple definitions of the urban form arise because it holds both social and physical dimensions, which have a dynamic relationship. Accordingly, the diversity of social activities creates and adjusts the physical structure, while the physical structure can play a role in controlling these social activities (Madanipour, 1996). The social dimension of the urban form describes the spatial settings alongside the qualities of individuals who build, use, and assign importance to such forms.

3.6.1.1.2 Physical Attributes

Physical attributes, such as size and shape, materials, hard landscape (e.g. furniture, sitting areas and pavements) and soft landscape (e.g. natural features, trees and water), are elements of the urban form and define its appearance. Defining the ideal size of public spaces can be challenging as this relates to both context and location, which can differ from one place to

another. Therefore, it is guaranteed that small places that include time-break and fresh breeze layout to the surroundings are valuable (Shaftoe, 2012).

Lynch (1984) suggests the ideal dimensions for a small space should be 12 to 14 meters each side, and for a large space about approximately 100 meters. Gehl (2011) proposed comparable maximum dimensions but recommended that the urban space should not surpass 70 to 100 meters. Moreover, he states that it should be rectangular, and consider that the maximum distance from which to distinguish facial expressions is 25 meters. Meanwhile, Abley and Hill (2004), Shaftoe (2012) suggest that the maximum distance to see any human movement is 135 meters, although (Llewelyn-Davies, 2000) argues that between the 18 to 100 meters in an open space cross-section is considered optimal. However, the purpose of the space is the principal factor that determines its size and shape, and it is commonly anticipated that the size of a space should enable the comfortable hosting of a large number of people. Secondly, materials are essential considerations in the urban form. Madanipour (1996) and Gehl (2011) argued that the surrounding buildings should be at a suitable height to avoid domination and the obscuring of views. Additionally, good quality materials are required in successful urban spaces, since busy and well-used spaces require durable materials to save costs in the long term by reducing the maintenance from wear and tear (Shaftoe, 2012).

Furniture and sitting areas in urban spaces are essential elements for users. This requires observant planning, otherwise it will not be efficient and people will not use it (Whyte and Spaces, 2001). Various options are considered for sitting areas (Whyte and Spaces (2001) and Shaftoe (2012) argued that to give users more options to meet their needs, such areas could be dynamic and flexible instead of static and fixed.

Natural features, such as trees, lawns and water, in urban spaces provide appealing features for users and thus encourage use, according to Shaftoe (2012). Water is widely considered an appealing feature; it invites users to stay longer in the space due to its cooling breeze and calming noise, which can reduce the busy hassle of the surroundings (Whyte and Spaces, 2001). Meanwhile, trees, lawns and greenery are visually and psychologically valuable for most users in urban spaces (Kaplan et al., 1989).

3.6.1.2 Functional Factors

The functional attributes of urban spaces describe the way in which individuals use these spaces. The function of waterfront urban spaces (discussed in section 3.1.3.2) includes the

communication and image of the city, which transforms the spatial character in accordance with the needs of the time. Urban spaces on waterfronts are a limited resource and symbolise the unique history and character of each society, encouraging attachment. Therefore, the contextual/locational and morphological aspects influence users' reactions to, and use of, the urban space. The following sub-sections discuss each factor and its aspects in detail.

3.6.1.2.1 Contextual/Locational Aspects of Users' Reaction

All urban spaces relate to their context; thus, urban attachment affordances are concerned with the general characteristics of the urban space and its surrounding urban context. On reviewing the people-based approaches to urban spaces (discussed in section 3.1.2), it is important to note how their location, uniqueness, and free accessibility support the quality of such spaces.

Focal Location

An urban space with a noticeable or central location in a city potentially affords the greater possibility of attachment than a bordering space in a city's suburbs. The first is usually a focal point of everyday life, a node or a path that is used by hundreds or thousands every day, while the second is usually a less noticeable space that is used by a limited number of suburban residents. Moreover, stakeholders, or actors, usually prefer to place such foci in central, favoured spaces in the city, primarily in a city's downtown or waterfront spaces, in order to achieve the most significant public display.

Uniqueness

Uniqueness generally refers to individuality; thus, the attachment affordances of urban spaces may be more highly valued in a city with only one of its kind than in a vast metropolis with several similar spaces. However, uniqueness also refers to morphological singularity, as an urban attachment affordance of a space of unique size and form and scenery is higher than that of a similar or repetitive spaces in a city.

Accessibility

People, generally, have no ties with gated or inaccessible spaces. For an urban space to afford urban attachment, it has to be accessible, where people have the right to enter and remain inside. Thus, a space's surrounding urban context has to be "permeable", namely permit the movement of people or vehicles in different directions.

3.6.1.2.2 Morphological Aspects of Users' Reaction

This group of aspects relates to the physical/spatial characteristics of the urban space, i.e., the layout and configuration of its built form. It includes the urban space's form, its monumentality, and the presence of distinctive buildings or landscape elements around or inside it. Each of these aspects is discussed in detail in the following sub-sections.

Defined Space

A defined space is the opposite of lost space; in general, lost spaces are ill-defined with no measurable boundaries, and thus fail to connect elements in a meaningful way (Tiesdell and Carmona, 2015). On the contrary, a defined urban space is the one that has a delineated form and thus has a stronger place identity; it consequently affords more urban attachment than a lost, vague or shapeless space.

Defined forms, or the forms of defined spaces, differ depending on the nature of the space itself and its function within the city's fabric, whether as a square or street. Squares are nodes that are essential elements in a city's urban form, which gives the city imageability, or a strong image. On the other hand, streets, whether boulevards, promenades, avenues, or even bridges or tunnels, all are linear paths inside the city that connect between places. However, by considering them as sites of attachment and interaction, they need to be "places" and not just paths.

As for squares, the more open the corners of the square, the less the sense of enclosure; in comparison, the more built up or complete they are, the higher the feeling of being enclosed. Moughtin (2007) mentions some factors that affect the degree of enclosure of a square, such as the nature of the enclosing buildings' rooflines, the height of the enclosing buildings in relation to the size of the space, the presence or absence of a unifying architectural theme and the overall shape of the space itself. In all cases, the significant factor is whether space has a defined form. Zucker (1959) identified four main classification forms of a square:

- (a) the closed square is where the space is self-contained;
- (b) the dominated square is where the space is directed towards a main building;
- (c) grouped squares are where spatial units are combined to form more substantial compositions;
- (d) the nuclear square is where the space is formed around a central object (not in the context).

In comparison, Zucker used the term "amorphous" to describe other cases of unlimited formless spaces (Moughtin, 2007).

Monumentally

In urban design, man is the measure for the built environment. The dimensions of buildings, squares and streets are compared with the proportions of the human figure (Moughtin, 2007). The urban environment contains a hierarchy of scale: the intimate human scale is where 12 m represents a critical horizontal measure; the standard human scale concerns a 21–24 m horizontal dimension; and the public human scale where 1.5 km dictates the maximum limit of perception (Moughtin, 2007).

The monumental scale of an urban space can take two forms within the city; either where the normal rules of proportion apply, and design is related to human dimensions, or where development can break the boundaries of this discipline and move onto a spiritual level, or a scale of gods, kings and dictators. Monumental spaces of this type can elicit admiration and be spiritually uplifting, or, on the contrary, they can be overpowering (Moughtin, 2007). In both cases, whether for spiritual or political reasons, urban spaces on a monumental scale always afford attachment interactions due to their robust and sensational effects.

Distinctive Buildings and Landscape Elements

The existence of characteristic examples of buildings and landscape elements surrounding the urban space or within its enclosure contributes to the distinctiveness and uniqueness of this space, and thus increases its attachment affordance. This includes buildings of unique form, with distinctive stylistic features, skilled craftsmanship, or an unusual use of materials. Distinctive landscape elements refer to any urban landscape feature, whether soft or hardscape, that is characterised by distinctive form, texture, or colour.

3.6.1.3 Social Factors

Social value is about the connections produced between the public and places within its area. The social value of a place refers to the historical, cultural, physical, aesthetic, natural and economic characteristics that have importance and meaning in the daily lives of people. Significantly, social value develops from its regular maintenance interactions and persistent communication between people (Lloyd and Auld, 2003). A person's level of social ties and relationships is a function of the degree of access to the sources of interaction. Spatial arrangements are essential factors in access. Gehl (2011) stated that urban spaces could

assist, or prevent, the progress of social interaction; he categorised activities in urban spaces as necessary, optional and social activities. Table 3-12 presents the three categories.

When urban spaces are of poor quality, only necessary activities take place; conversely, when these spaces are of good quality, a more extensive range of optional and social activities tend to occur. Although the physical structure does not have a direct effect on necessary activities, in good quality outdoor urban spaces these activities tend to take a longer time. Accordingly, optional activities occur with increasing frequencies when the quality of outdoor areas is optimal. Moreover, as levels of optional activity rise, the number of social activities usually increases considerably (Gehl, 2011, Gehl and Rogers, 2013, Tiesdell and Carmona, 2015).

Outdoor activities	Description
1. Necessary activities	<ul style="list-style-type: none"> These activities include everyday tasks and all activities in which those involved are required to participate (e.g., shopping, going to school or going to work). The event of these activities is barely influenced by the physical quality of the environment.
2. Optional activities	<ul style="list-style-type: none"> People participate, if there is a wish to do so and if time and place make it possible (e.g., taking a walk to get a breath of fresh air, or sitting relaxing and enjoy life) It happens when outdoor physical conditions are optimal; however, they are boosted in good quality environments but diminished significantly in poor quality environments.
3. Social activities	<ul style="list-style-type: none"> All activities that depend on the presence of others in public spaces (e.g., children at play; chatting in the street, meeting friends, greeting and gathering)

Table 3-12 Outdoor Activities (Source: Adapted from Gehl (2011))

Social activities may include political, religious, or cultural activities. Some spaces take on enhanced meaning as the centres for an individual activity, while others may serve some overlapping functions. As Moughtin (2007) emphasises, the most successful urban spaces may have a dominant function for which each is known and by which it may be classified. However, often these successful spaces sustain activity through the diversity of uses in their surrounding buildings. This quality was termed as "robustness" by Bentley et al. (1985), which refers to the quality of an urban space when it can be used for many different public purposes, and thus offers users more choice to interact.

3.6.1.4 Perceptual Factors

The study of perceptual measurement has refined since the mid-1960s, which focused on people's perceptions of their urban setting, how they value, perceive, draw meaning from, and add significance to their urban environment. People affect the environment and react to it; however, for this collaboration to occur, they also need to perceive it. Perception is the psychological function that enables people to interpret environmental stimuli, which accumulates and is dealt with by the senses. Hence, it is the most necessary and direct mechanism that links people to their immediate sensory experience of the environment (Rapoport, 2016).

The physical environment affects people's perceptions of environmental quality, mainly through the meaning they attach. While people share familiar sensations of their environment, how they perceive and evaluate those perceptions differ. As numerous factors influence these differences in environmental perception, such as age, gender, length of residence in an area lifestyle, cultural environment and values, perception is not only a biological process but is also socially and culturally learnt (Carmona et al., 2012).

Moreover, Rapoport (1990) indicates two distinct types of meaning embedded in the built environment. The first is the perceptual meaning, which is developed by the designer who tends to react to environments in perceptual (visual) terms; the second is the associational meaning, which involves the meanings that users' construct of the built environment through their associational reactions. Goodman (1988) as cited in Vale (2014, p. 4) identifies a mechanism by which a building may become a monument; *"... in ways unrelated to being an architectural work — may become, through association, a symbol for sanctuary, or for a reign of terror, or for graft"* In this case, meanings are only generated due to some historical events or notable past activities that have occurred at individual sites in the city.

3.6.1.4.1 Intangible Aspects of Users' Reaction

This part of users' reaction concern significant intangible meanings or the values associated with the urban space. There is a hierarchy of levels of meaning in the built environment, ranging from the meaningless as the concrete objects through to used objects, valued objects and symbolic objects, which carry the greatest meaning (Rapoport, 1990).

Lang (1994b) argued that symbolic meanings afforded by the built environment depend on a person's understanding and interpretation of the pattern in this environment. However,

there tends to be considerable consistency in this interpretation among members of a culture. These patterns of the built environment increase or limit options for physical or mental human behaviours. People of different social groups react to the urban environment in accordance with the meanings the environment holds for them. These meanings are not singular; rather, as a place, urban space is multi-dimensional and multi-coded (Madanipour, 1996, Scannell and Gifford, 2010, Kong and Yeoh, 1995).

City residents understand their environment through a complicated process of interpretation. Madanipour (1996) stated that the environment people perceive is always a mental construct, whilst Yeoh and Kong (1995) indicate that the urban space becomes, "*textured by multiple layers of everyday meanings and sedimented history*". Such multiplicity of symbolic meaning is challenging. In the built environment, there is a drive to separate and differentiate amongst signs and symbols. Whilst signs are explicitly connected to the things they stand for, symbols can be ambiguous, or as Rapoport (1990) declares, multivocal. Thus, as symbols represent a one-to-many correspondence model, and, as a result, are exposed to various meanings for different groups; as such, symbolic meanings related to the urban space can be characterised in two ways:

Religious or National or International Administrative Buildings

This category of symbolic meanings is associated with buildings that host symbolic functions, regardless of whether they are enclosing the urban space or located within its enclosure. An urban space that contains one or more buildings of high symbolic meaning, such as religious buildings or significant national or international administrative buildings, may have grounded and stronger symbolic affordances than those used only for traffic or normal commercial activities.

Religious buildings include, among others, different forms of houses of worship (such as churches, mosques and temples.) and other funeral sacred shrines. National administrative buildings include all types of governmental or parliament structures intended to communicate the "*government visually to the governed*" (Vale, 2014). Moreover, international administrative buildings include all types of foreign governmental structures, such as embassy and consulates.

Association with Symbolic Events, Persons, or Activities

Urban spaces may become significant for their association with a notable historic event, person, or activity, where space itself possesses historic, cultural, or antiquarian value. Such

events may include: war or bombardment; civil, ethnic or religious conflicts and other acts of violence; uprisings and revolutions; historical moments of national victory or independence; royal weddings, and incidents concerning unique natural phenomena or disasters. These associated symbolic meanings do not result from building a symbolic function; instead, they are linked to the space itself.

3.6.1.4.2 Temporal Aspects of users' reaction

The time factor is a dimension of the age, transformation and deterioration of urban spaces. The association of an urban space as a place needs accumulative growth; moreover, it involves change and the involvement of many users throughout time. Riegl (1982) named the categories of value that are contained within building monuments, and defined a monument as, *"in its oldest and most original sense in human creation, erected for a specific purpose of keeping single human deeds or events alive in the minds of future generations"*. He indicates that the erection of such intentional honouring monuments can be traced back to the beginning of human culture. Furthermore, Riehl (1982) was the first to describe the "age value" category, where age value depends on the knowledge of age, which depends partly on the perception of evident traces of ageing.

Historic Buildings

Historic buildings represent a rich collection of information about the past. They have much to tell about the lives of past generations. They are a living record of social, economic and artistic history, as well as being dominant contributors to a space's sense of place. The presence of historic structures surrounding an urban space increases users' reactions to it and their attachment. Through age, the surface characteristics of historic buildings develop a layer that often contributes to the building's character, and consequently to the urban space itself.

Historic Urban Landscape Elements

Elements of an historic urban landscape include fountains, artworks (sculpture, memorial) and street furniture. Such elements tell the history and enable insights into the life of past generations and reflect the technology of their time. They thus contribute to the uniqueness of the urban space identity.

3.7 Conclusion

The discussion in this chapter was based mainly on five key aspects of open urban space divided in two sections, the first part namely: urban space and urban design, urban space as a place, urban space as part of the public realm, significant social dimensions; and users' reaction to urban spaces as the second section. The qualities of urban space have been explored by examining an extensive range of literature and by reviewing the theories and criteria related to the physical, social, perceptual and functional qualities. These qualities are perceived as entities that allow an understanding of the physical and spatial characteristics of urban spaces and their impact on people's perceptions of, and behaviour in, these spaces.

Open urban spaces are vital in any city, and the quality of life can be measured and evaluated by the quality and efficiency of its public spaces. Through reviewing the theories and criteria of the open urban space, including its importance, and the concept of place, the first section has revealed its multi-functional aspects. Open urban spaces are understood as outdoor areas accessible to the public, including squares, plazas, streets, gardens, and waterfronts, where people can engage in the variety of activities, and thus establish or reinforce their social life.

Thus, people's interaction and engagement with a particular space gives it a unique meaning, transforming it into a 'place'. The concept of place is, therefore, the result of the interaction of three key elements: the physical setting, the activities taking place in that setting, and the associated conceptions (the perception, meaning and values). Moreover, the models of the place proposed in section 3.2, are valuable in understanding the various urban design qualities of public open space.

An awareness of the role of the open urban space has been growing in both developed and developing countries. This is due to the realisation of the role it can play at various environmental, economic, and social levels. Successful good quality and well-used urban spaces are perceived as an essential requirement in any city around the world, by providing a healthy life for its people. Urban space plays a significant role in enabling social activities and interaction and in representing cultural values, which, in turn, help to produce a space full of social life and meaning. Thus, in summary, the qualities of public open spaces are, the physical, social, perceptual, and functional qualities (illustrated in Figure 3-7).

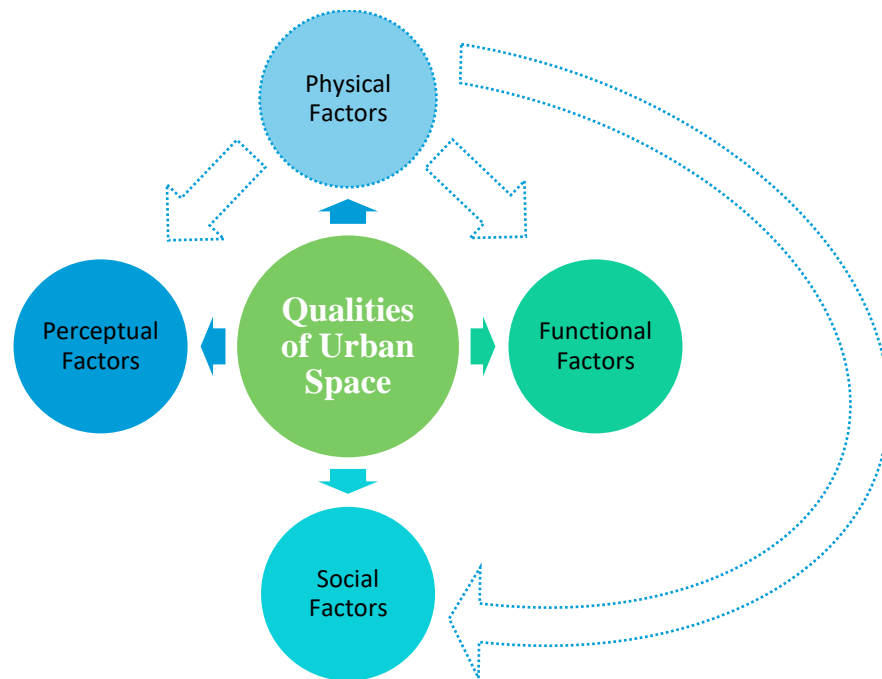


Figure 3-7 Qualities of the Urban Space (Source: By the researcher)

The urban design qualities of urban space involve four key issues, namely the: physical, functional, social and perceptual. These qualities emerged regarding the definitions of urban space, its importance and its concept as a place (discussed previously in sections 3.1, 3.2, 3.3 and 3.4). These qualities relate mostly to the definitions of Carr et al. (1992), Madanipour (2003), and Carmona et al. (2010) in addition to the models presented in Figures 3-2, 3-3, 3-4, 3-5. These qualities are studied because there is a need to understand what they are and what they involve in order to apply them as criteria to evaluate and examine spaces from the perception of professionals. The following sub-sections discuss each measurement.

Physical Measurements

The physical quality of the urban space emphasises the physical and spatial features of the environment and their impact on an individual's behaviour and needs. The physical structure of the built environment can be characterised as urban morphology, which adopts an urban form and urban layout. The urban form has two measurements, social and physical, and can be characterised as a mixture of various parts, such as building form, open space, circulation or movement, layout and spatial structure. Meanwhile, the urban layout should be robust and capable of adaptation. Understanding these components is essential with regard to the physical quality of urban spaces.

However, physical qualities can also be measured through functional, social and perceptual factors. For example, socio-spatial concepts do not just approach such spaces as physical items, analysing the spatial structure of the built environment, but also consider their relevance as social products (Iranmanesh and Alpar, 2018). Nevertheless, the imageability and legibility of existing urban spaces contribute to the creation of an attractive physical built environment, and one that invites use. Thus, the five elements of Lynch's theory can be used to analyse the physical quality of the built environment. Therefore, the physical characteristics of the urban form, such as size, shape, enclosure, and furniture, can have a strong positive or negative influence on the quality of urban spaces.

Functional Measurements

Functional measurements are concerned with the use and function of open public spaces. Functionality and usage can be comprehended as the connection between individuals, their activities and space. Gehl's three categories of outdoor activity (necessary, optional, and social) are mainly influenced by the quality of the physical environment. Good quality urban spaces help to increase the frequency of optional activities, which frequently and successively supports a significant increase in social activities.

Providing a variety of mixed uses within an urban space is extremely important to the life of these spaces, as the diversity of activities offer users helps to encourage their use. Also, improving accessibility in open public spaces helps to generate further use and activity. Therefore, addressing human needs in urban spaces can have a positive effect on the use of these spaces; this is arguably needed to achieve human satisfaction and promote wellbeing. People's needs in open public spaces are, in general, comfort, relaxation, passive and active engagement with the environment, and discovery.

Social Measurements

Social measurements increase issues associated with social interaction in urban space, including public life and the feeling of safety and security. Social interaction is needed in urban spaces since it can help to meet the human need for attachment and belonging. Sociability in urban spaces is therefore based on a user's need to connect and interact with others. The socio-cultural characteristics of urban spaces

can thus stimulate the way in which people interact and socialise in urban spaces. Thus, when good quality physical amenities, activities, and safety and security conditions are in place, they attract people to use the urban space, and their presence will attract other people. The level of sociability and public life that occur in urban spaces provides an indication of the physical and functional qualities of such spaces.

Perceptual Measurements

Perceptual measurements emphasises the need to comprehend users' perceptions and cognitions regarding their environment. People in urban spaces are engaged in two procedures; sensation and observation (perception). They achieve this by firstly using their senses to interpret the environment, and then to perceive it. Sensation may be similar among people, but perception varies depending on factors such as gender, age, lifestyle, length of residency, culture, and position on the social strata. Additionally, the functional and physical quality of the environment they live within influences their perception. Therefore, urban spaces have various influences on users' reactions through the physical, functional, social and perceptual factors of urban design, which are reviewed and discussed in section 3.6.

The second part of the chapter has reviewed a multitude of indicators that affect the users' reactions to public space, noting that these are usually driven by the concept of the attachment affordance, which provides a method to evaluate the qualities of spaces. The concept of environmental affordance helped to provide an understanding of the impact of urban design dimensions on urban attachment. The objective was to direct a theoretical framework that could evaluate and examine different types of urban spaces in order to determine how much the characteristics and qualities of such spaces afford or support attachment from users' perceptions. These aspects were categorised under three factors: functional, social and perceptual and illustrated in Figure 3-8.

The literature suggests a set of values and qualities, which should be measured and used as a guide in developing a successful and efficient urban space. From this, the researcher has adopted a set of indicators for use as a guide for this research. Additionally, according to the literature, enhancing the quality and efficiency of urban spaces requires a comprehensive analysis of these spaces that considers their physical composition and social activities in the evaluation of their quality, and to provide recommendations for improvement.

Therefore, in order to reach a comprehensive understanding of the usability, efficiency and perception of urban spaces, the assessment mechanism for professionals and users' perceptions represents an analytical framework, which is based on tools identified from earlier studies that engage with the field of environmental psychology. This analytical framework will study the provision of urban spaces, and will be discussed within the research methodology strategy, which is presented in the following chapter.

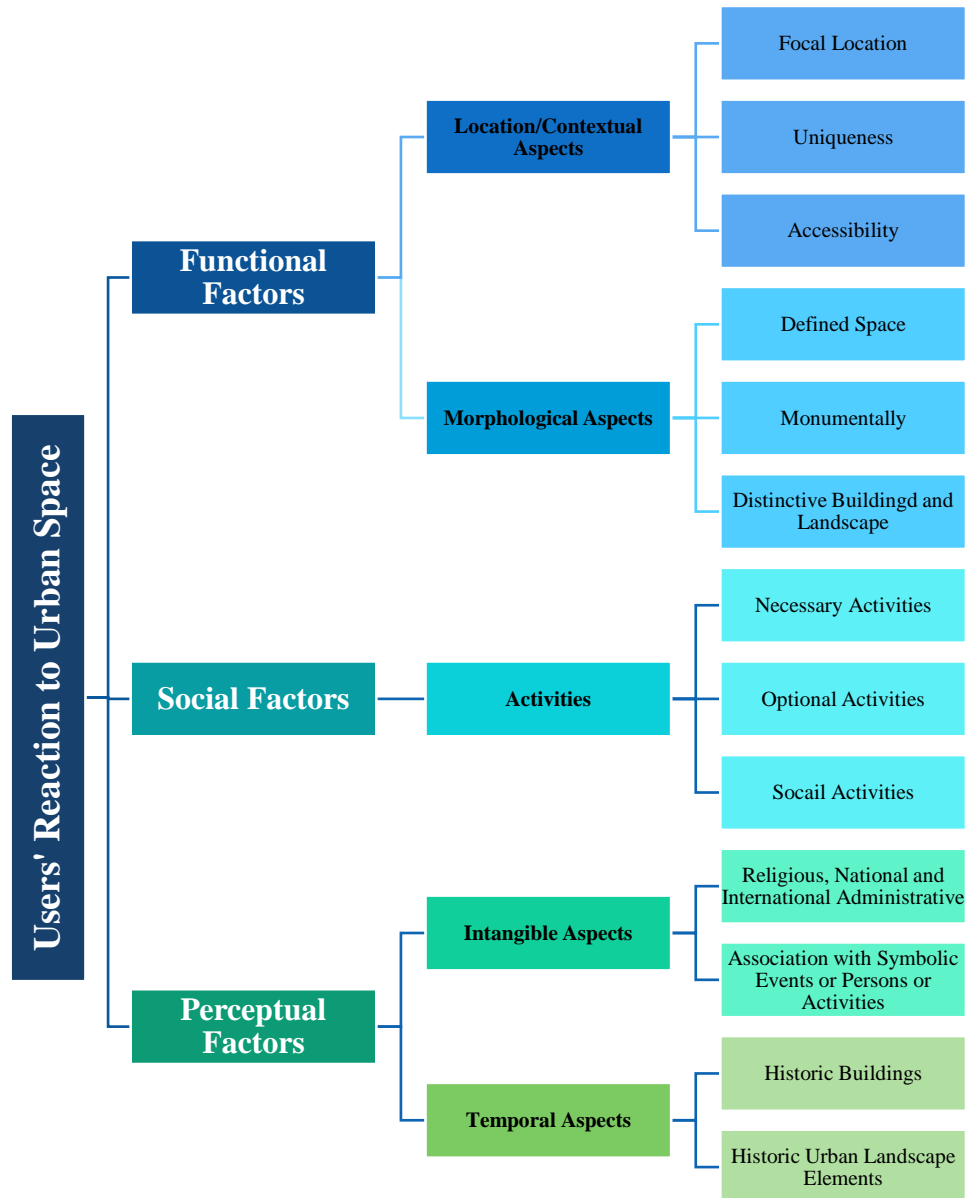


Figure 3-8 Users' Reactions to the Urban Space: Factors, Aspects and Indicators

4. Research Methodology

4.1 Introduction

The previous chapter presented a review of the main theories of urban public space and its characteristics, and explained the importance of a comprehensive approach to the analysis of its quality. Which, the key issues of public spaces in port cities identified from the urbanity and the water section in Chapter 2. The theoretical underpinning chapter concluded by implementing a functional, social and perceptual approach to address the main research questions, which were: Do the physical features of Alexandria's Eastern Harbour squares offer an appropriate context for the range of users' activities, and do these squares contribute to their users' satisfaction with the settings?

This chapter outlines the research methodology developed to respond to the research objectives outlined in Chapter 1. It first describes the strategic approach of the methodology that underpins the research, and then explains the mixed methods applied, including the criteria used in the selection of the case studies. Next, it illustrates how the method was applied to four squares in Alexandria, and finally, the chapter discusses the techniques used in this research, both in the fieldwork and desk study. Figure 4-1 illustrates the methodological approach applied to this research.

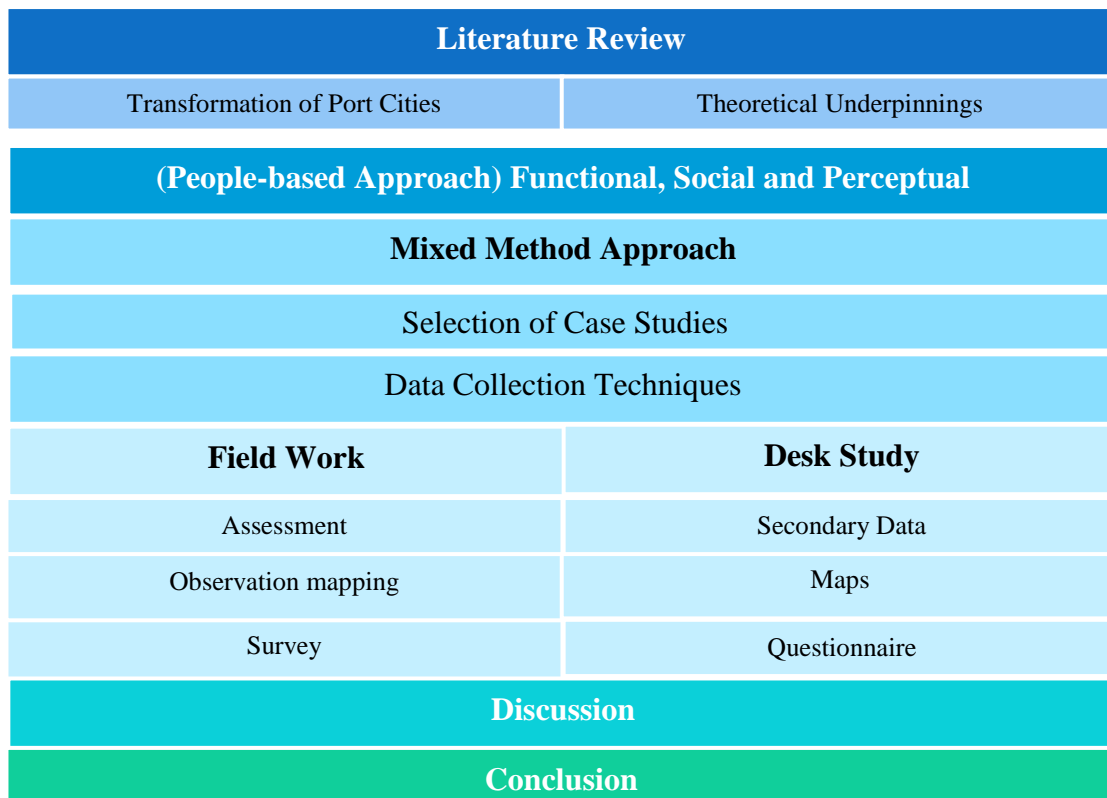


Figure 4-1 Methodological approach applied to the research

4.2 The Strategy: A Functional, Social and Perceptual Approach (People-Based)

The primary motivation behind this examination is to identify approaches to assess and evaluate the quality of urban spaces in transformed port cities, specifically squares, in Alexandria's Eastern Harbour. The analysis is based on both quantitative and qualitative measures with the aim of interpreting the relationship between the physical compositions and social activities in order to improve and enhance the quality of urban life. Therefore, the assessment mechanism used represents an evaluation framework; this is based on tools resulting from earlier studies that study the field of environmental psychology. These were utilised to explore all aspects that have an impact on the quality of urban space and to reach a comprehensive understanding of its use, efficiency and the perceptions of it, as well as ways to improve it. The literature reviewed in Chapter 3 reveals the interconnectedness of the qualities of urban space and its characteristics, and points to the need for a comprehensive approach to address such phenomena.

It is essential to understand urban public space as both social and physical, as highlighted by, for example, Madanipour (1996), Woolley (2003), Carmona (2010) and Shaftoe (2012). They note the importance of a comprehensive approach to the analysis of the quality of urban space and advise that such analysis should include all functional, social and perceptual aspects.

Although there are a variety of approaches to address a particular research study, one may seem more significant than another. For this research, the social, functional and perceptual approach discussed in Chapter 3 has been selected as the strategic approach capable of providing a comprehensive underpinning to the investigation (shown in Figures 4-2 and 4-3).

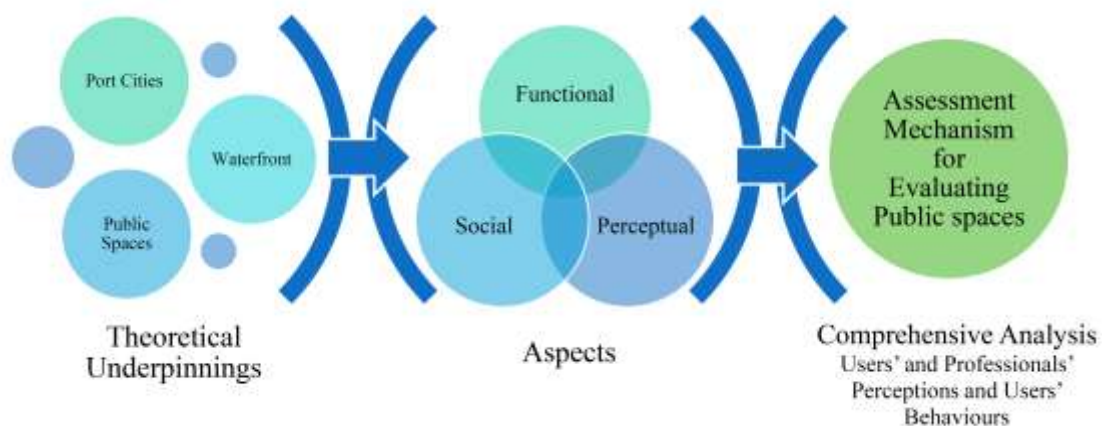


Figure 4-2 The strategy of the research

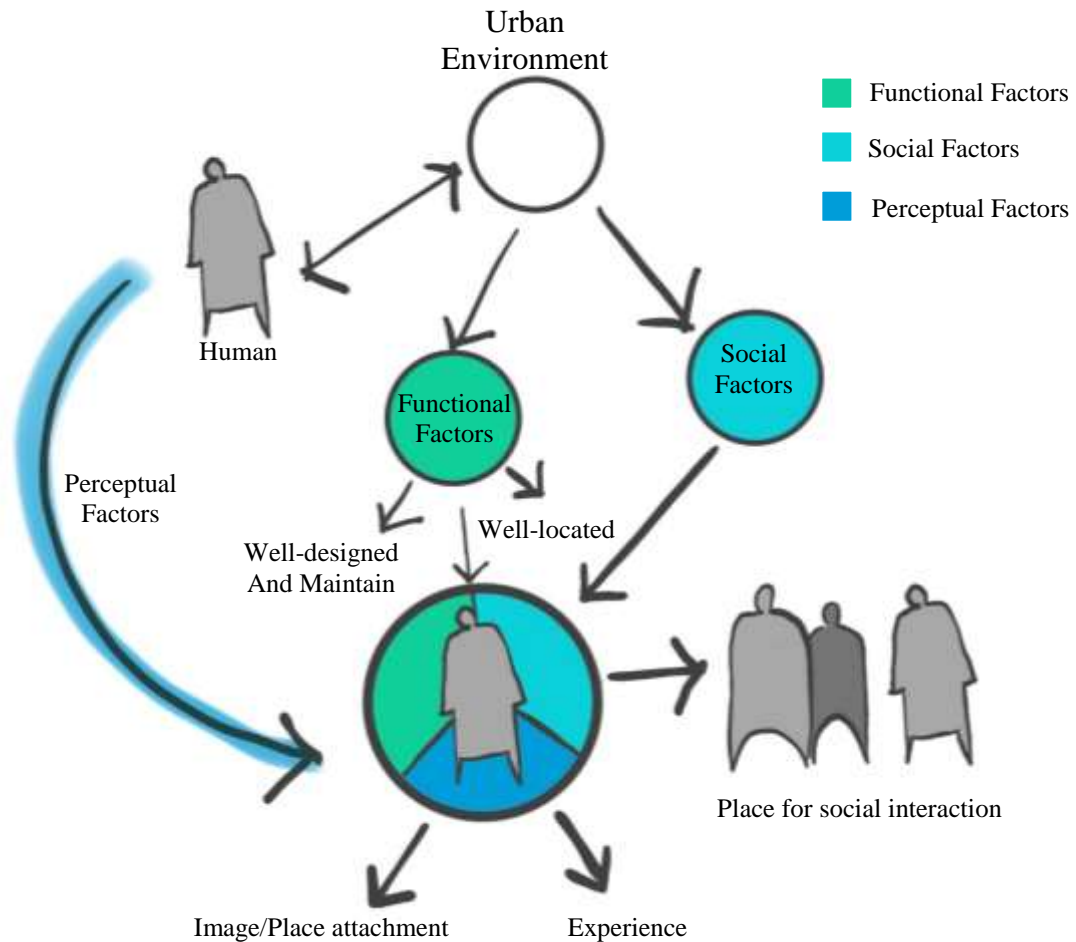


Figure 4-3 The analysis of successful urban space from a human perspective

4.3 The Mixed Methods Approach

In social sciences, three research methods are usually engaged: (a) qualitative, (b) quantitative, and (c) mixed methods (Creswell, 2014, Tashakkori et al., 1998).

- Qualitative research is an approach to investigate and understand the meaning that people attribute to social or human problems. This entails the development of questions and procedures involved in the research process. Data are collected in the participant's settings, and data analysis is inductively developed from particular to general themes.
- A quantitative research approach aims to test objective theories by evaluating the relationship between variables and factors. It is important to highlight that under this approach the theories are built deductively. In particular, variables and factors can be measured, and the data can be analysed through mathematical and statistical procedures.

- Mixed methods research is a combination of the afore-mentioned approaches. It is an approach based on the collection of both qualitative and quantitative data, integrating two forms of information and using diverse designs for the purposes of a broader and deeper understanding and justification (Creswell and Clark, 2017, Johnson et al., 2007).

These three research approaches are based on different philosophical worldview assumptions. Firstly, the research philosophies are listed with a short definition in order to show how the researcher appropriately selected one for this study. In particular, the main paradigms can be described as follows (Creswell, 2014);

- Postpositivist paradigm: these assumptions represent the traditional form of research and are generally based on quantitative research. This paradigm is also called the ‘scientific method’ (Creswell, 2014). In other words, positivism refers to a set of epistemological beliefs that the scientific method provides the most appropriate paradigm to discover knowledge about the processes by which both physical and human events occur (Saunders et al., 2009).
- Constructivist paradigm: this paradigm is often combined with interpretivism and it is usually perceived as an approach to qualitative research. According to this paradigm, people develop subjective visions of the world in which they live. On these assumptions, researchers look for the complexity of these visions, but do not focus on meanings within specific classes of ideas (Creswell, 2014).
- Transformative paradigm: this approach emerged in the 1980s and 1990s from individuals who felt that postpositivist assumptions imposed laws and theories that were not able to fully explain real-world problems; in fact, these theories did not always fit confounded people in society, nor address issues of power, social justice, discrimination and domination. In studying these groups, the research focuses on discrimination, which is linked with political and social action (Creswell, 2014).
- Pragmatism: an approach where researchers focus more on the research problem than on the methods. They tend to use pluralistic approaches to understand a problem. In particular, pragmatism applies mixed method research. Within this approach researchers have the freedom of choice and take inspiration from many

approaches when collecting and analysing data (Creswell, 2014). In other words, different philosophic approaches can be used together in order to carry out the research (Saunders et al., 2009).

Philosophical Paradigm	Research Design	Research Methods
Qualitative Research		
Constructivist/ transformative	Narrative research Phenomenology Grounded theory Ethnographies Case study	Emerging methods Open-ended questions interviews, observation data Audio/visual data text and image analysis interpretation
Quantitative Research		
Postpositivist	Experimental designs Surveys	Pre-determined Methods Instruments based questions Performance data Statistical analysis Mathematical interpretation
Mixed Methods Research		
Pragmatics	Convergent Explanatory sequential Exploratory sequential Transformative, embedded, multiphase	Both pre-determined and emerging methods Both open-ended and closed-ended questions Multiple forms of data Statistical and text analyses Across databases interpretation

Table 4-1 Research approaches based on (Creswell, 2014, 2013, 2017) and (Tashakkori et al., 1998)

Table 4-1 summaries the range of research approaches available, linking them to the relevant philosophical paradigm, research design and research methods applied. Table 4-1 emphasises that mixed method research is based on the pragmatism paradigm; it makes use of both emerging and pre-determined methods, and adopts closed and open-ended questioning, focusing on both numeric and non-numeric data analysis. Moreover, four schemes are available in a mixed method research design that are described in Table 4-2 (adopted from Creswell (2014)).

Mixed method research seems appropriate in the evaluation of urban design and urban space. This is due to the multi-layered concept of urban space and design, which incorporates socio-economic, environmental, political, physical, technical and ethical perspectives. Additionally, urban design can be viewed as a procedure, process or arrangement of activities or events that stimulate the achievement of outcomes (Berta et al., 2018). As a result of these assumptions, decision-based problems in the field of urban design represent incomplete or unstructured issues since they are considered by various actors, many and often contradictory values and views; as such, a multiplicity of outcomes and significant

uncertainty are possible (Prigogine and Stengers, 1997, Simon and Norton, 2012). Under these conditions, the assessment of different settings is a complex problem where varied aspects and diverse perspectives should be viewed at the same time, with the consideration of physical components, which also depend on observations and nonphysical components. These, in turn depend on social perception, preferences and feelings (meanings and values).

Research Design of Mixed Methods	Description
Convergent	a form of design in which the researcher converges or merges quantitative and qualitative data in order to provide a comprehensive analysis of the research problem
Explanatory Sequential	the researcher first conducts quantitative research, analyses the results and then builds on the results to explain them in more detail with qualitative research
Exploratory Sequential	involves first a qualitative phase that can be useful for constructing evaluation instruments or for specifying variables that need to be applied to a follow-up quantitative study
Transformative (advanced mixed methods)	uses the theoretical perspective of social justice and power as basis for the research
Embedded (advanced mixed methods)	quantitative or qualitative data are embedded within a larger experiment
Multiphase Design (advanced mixed methods)	is common in the field of evaluation and program interventions when concurrent or sequential strategies are used in tandem over time in order to understand long-term consequences

Table 4-2 Mixed methods' design research (Creswell, 2014)

To summarise, Figure 4-4 provides a framework for mixed method research design. The researcher decided to rely on a pragmatist point of view, which is the most appropriate for this research. Moreover, according to Tashakkori et al. (1998), pragmatism as a research philosophy allows for the combination of various paradigms and research types. Tashakkori et al. (1998) also state that a pragmatist point of view avoids vague discussions about the nature of knowledge and truth, whilst at the same time ensuring that research questions are the most important part of the research; this means that different approaches can be used in order to find the answers to the research questions.

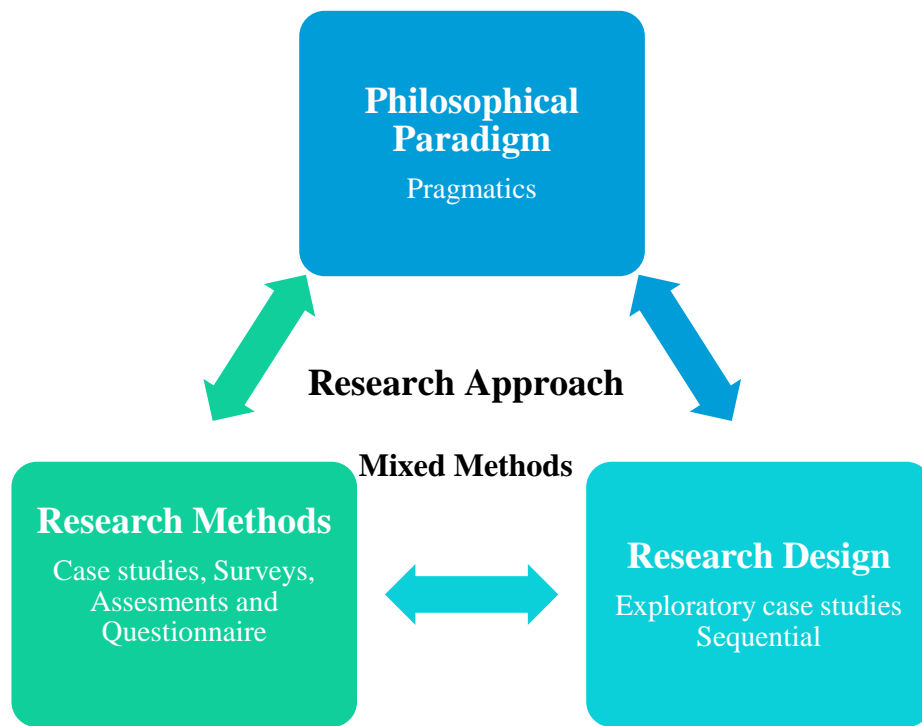


Figure 4-4 A Framework for research - the interconnection of worldviews, design, and research methods
(Source: Based on Creswell (2014))

One of the reasons for the recognition of the case study as a research method is that researchers are becoming more concerned with the limitations of quantitative methods in providing a holistic and in-depth explanation of the social and behavioural problems in question. Through case study methods, a researcher is able to go beyond quantitative statistical results to understand the behavioural conditions from the actor's perspective. Moreover, by including both quantitative and qualitative data, a case study helps to explain both the process and outcome of a phenomenon through more complete observations, reconstructions and analyses of the cases under investigation (Tellis, 1997).

4.4 The Analytical Framework

Various theoretical characteristics underpin this study with the aim of understanding such theoretical explanations along with their everyday effects. This research is comprehensive and exploratory in nature and aims to translate the association between the physical composition of urban space and users' activities; its objective is to achieve a complete understanding of the usability, efficiency and perception of Alexandria's selected urban spaces on the Eastern Harbour.

As stated in Chapter 1, this research assumes that planning and urban design can significantly contribute to the establishment of good quality urban spaces. Chapter 3 explored the

concepts, methods, theories and good practice in providing successful public spaces (people-based approach), as identified in the literature. To understand the context of the case studies, literature on the port city in general was presented in Chapter 2 and more specifically, Alexandria as a port city and its growth was reviewed in Chapter 5. Evidence of European domination was found in the concepts and processes that provided the basis for the design of urban spaces in Alexandria. These have been documented in the analytical framework developed in this section, which draws on the knowledge gained from the literature to identify the concepts and criteria to be measured.

This analytical framework is presented in Figure 4-5 and shown in graphical form in Figure 4-6. The literature on urban space has shown that combined phenomena, which includes different concepts and disciplines, is most successful. Figure 4-5 is therefore classified around the three key dimensions of successful public open space identified in Chapter 3. In order to assess the urban space, the concepts learned from the literature were structured into two categories; physical qualities and users' perceptions. These two main categories are classified into sub-categories, which represent criteria including a set of indicators used to analyse public spaces on the waterfront in Alexandria. These provide a basis for understanding successful urban space and are used in the assessment of the case studies in this research.

Figure 4-6 shows the research components used to answer the research objectives and questions. This identifies the two key areas evaluated in the research process: public space and users' perceptions. The evaluation of each of these components involves a range of concepts and indicators across the three dimensions shown in Figure 4-5. The dimensions and concepts in Figure 4-5 do not map vertically onto the two research components shown in Figure 4-6. Rather, in some cases a given indicator may be found in each component, that is seen from a different perspective (e.g. on-the-ground professional assessment, and user perception); in other cases, a given indicator may be more relevant to one component than another.

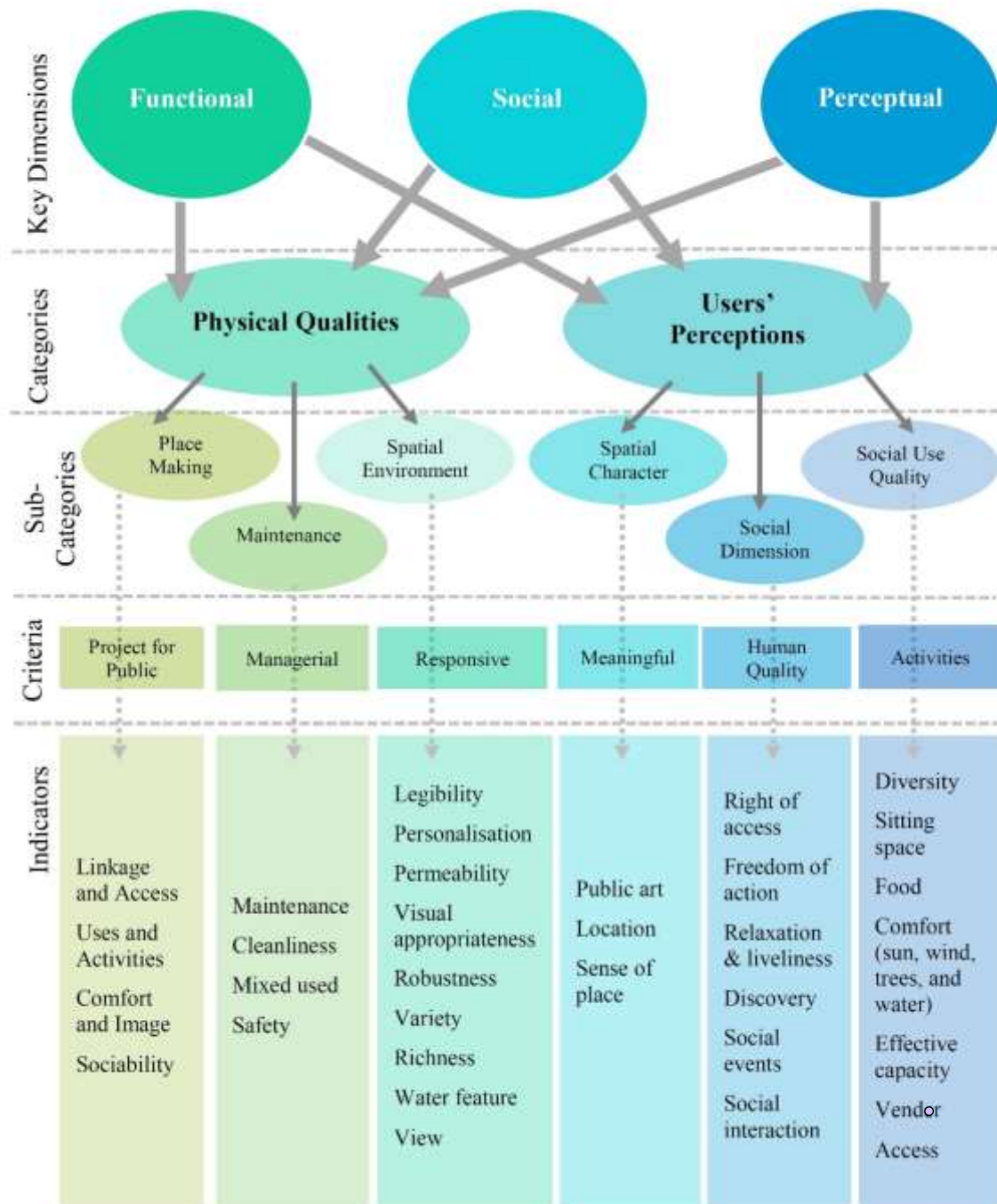


Figure 4-5 Analytical framework: Dimensions, concepts and assessment criteria

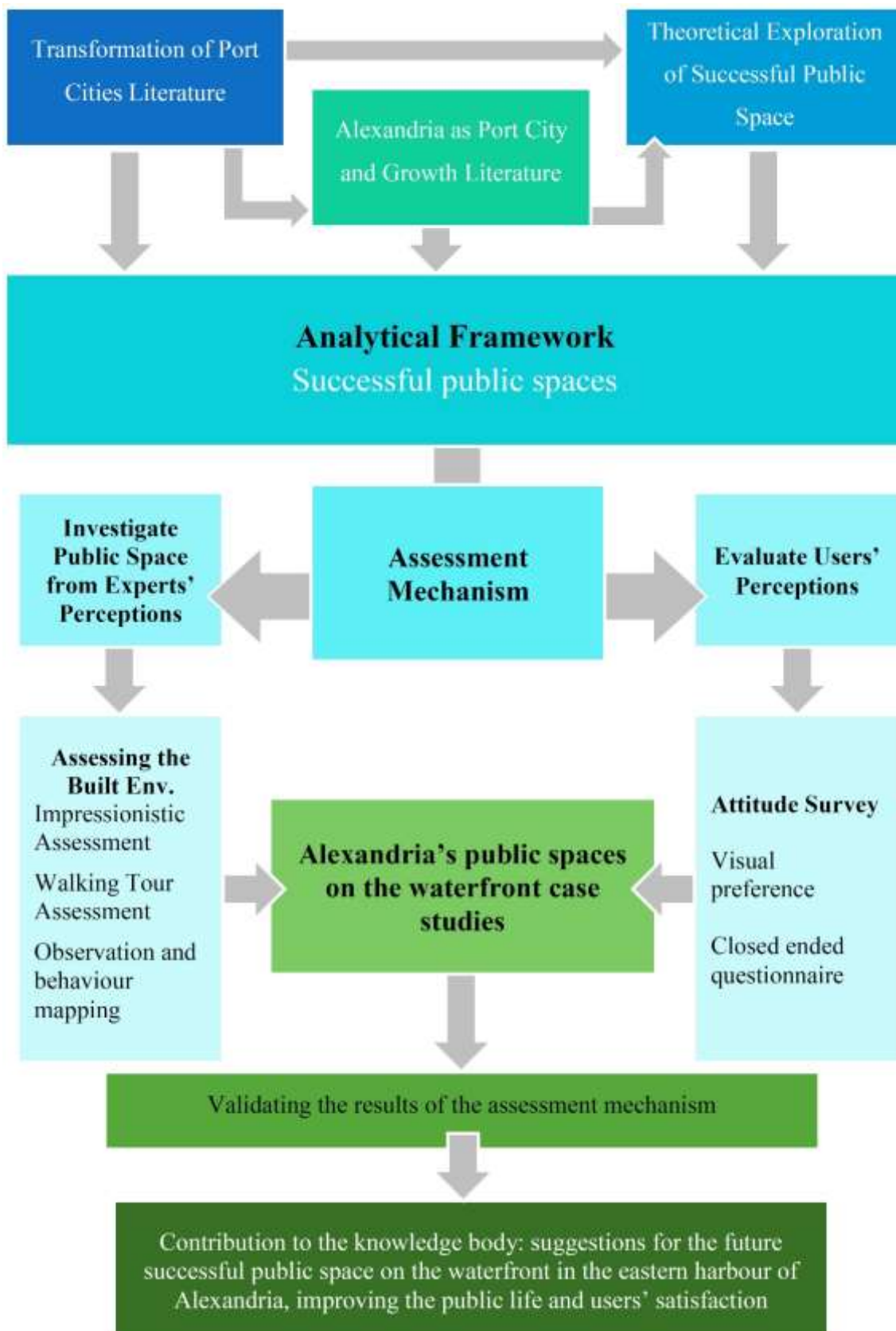


Figure 4-6 Analytical framework: The relationship between the research components

4.5 Research Methodology

This section reviews the methodology based on the theoretical perspective of the research. There is significant debate that compares and contrasts qualitative and quantitative social science research (Bryman, 2015). Quantitative research is represented by social surveys and experimental investigation, whereas qualitative research is associated with participant observation, and unstructured and semi-structured interviews (Bryman, 2015). Spatial transformation is often regarded as a physical phenomenon; however, it is also a social phenomenon with overlapping layers of cultural, economic and political factors. The dynamic relationship between human activities and physical change can be better observed in their contextual realities. In this study, using one strategy, namely either quantitative or qualitative methods, would be insufficient to address the complex issues of the transformation of public space as a social phenomenon. This work, therefore, adopts mixed methods. The definition of mixed methods is,

“as a method, it focuses on collecting, analyzing, and mixing both quantitative and qualitative data in a single study or series of studies. Its central premise is that the use of quantitative and qualitative approaches, in combination, provides a better understanding of research problems than either approach alone”. (Creswell and Clark, (2007)

The qualitative strategy used in this research, may be defined as an approach to research on the social world, which tends to describe and analyse the culture and behaviour of users in urban spaces. The most important characteristic of qualitative research is that it expresses the view of an event, action or values from the perspective of those who are being studied (Bryman, 2015). Therefore, behaviour has to be set in the context of values, practice and the underlying structures of the entity involved (Bryman, 2015). Quantitative research is represented by social reviews and examination, while subjective research is related to subjects' perceptions (Bryman, 2015). The subjective approach, which is utilised as part of this exploration, is characterised as a way to investigate the social world, which aims to examine and describe the way of life and behaviour of people and their gatherings (Bryman, 2015). The most fundamental component for subjective research is that it connects the review on the occasion, activity, standards and qualities from the point of view of the individual users examined (Bryman, 2015). Subjective research is connected with a few distinctive methodologies concerned with information gathering. One of these methodologies is social indication, which represents the principle highlights of quantitative

research (Bryman, 2015). This research draws on various techniques in order to understand the social setting of the investigation, and intends to go beyond pure description to conduct an intensive analysis of the examined environment. Multiple methods have been utilised in social science for years. However, there are potential limitations in the use of mixed methods as is there is a difficulty in analysing the vast amount of data produced. There is also the risk of contradictory findings (McNeill and Chapman, 2005). To avoid these problems, this research was conducted with a focus on the interpretation of social reality.

Various problems are connected with the implementation of qualitative research, such as the ability of the researcher to perceive through other people's eyes and to interpret events from their perspective; the relationship between theory and research, and the degree to which it is possible to make generalisations about the qualitative research obtained from case studies (Bryman, 2015). To reduce these problems, the data were firstly analysed from the perspective of ten expert participants, and observations and behavioural mapping were conducted through an understanding of the meanings that influence users' behaviours within the space. From this the data were analysed from the perceptive of users. Secondly, different approaches may be taken to resolve the problematic association between theory and the grounded theory of qualitative research. Indeed, a case study is an important method to understand multifaceted issues associated with a study area (Flyvbjerg, 2007) However, Creswell emphasises the use of theories to shape the direction of the in-depth analysis of multiple case studies (Creswell and Poth, 2016).

A combination of qualitative and quantitative approaches have thus been utilised to drive the empirical work. The combination of qualitative and quantitative approaches expanded the variety of methods used to gather data to answer the research questions. The approach used in both methods was executed and results were analysed.

4.5.1 Multi-Case Studies Approach

Yin (2009) defines a case study as, *“an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident”*. Yin's (2009) definition indicates that this strategy is suitable for the study of the transformation of public space. This research employs a case study as the primary investigation method for a number of reasons. First, the focus of this research is on the transformation and change of public spaces in Mediterranean port cities from the Ottoman Empire and particularly Alexandria. The level of complexity

that this phenomenon brings is significant and cannot be undervalued during the research design phase. Second, the nature of the research questions posed in this study also suggests the choice of case study as a research strategy. Third, the case study was chosen as it highlights the detailed and in-depth analysis of a limited number of cases, and identifies the importance of an understanding of the contextual features in doing so.

4.5.2 The Selection of the Case Studies

The city chosen in this research, Alexandria, is a Mediterranean port city located in Northern Egypt (Figure 4-7) and the second largest city in Egypt after Cairo. Founded in 331BC, it covers an area of 2679km² (Figure 4-8), and in 2016, its population was approximately five million. The city transformation and growth will be studied in Chapter 5. The four selected urban spaces located on the Eastern Harbour of Alexandria are shown in Figure 4-9.



Figure 4-7 A map of Alexandria location in Egypt from (Source: Google Earth, September 2018)

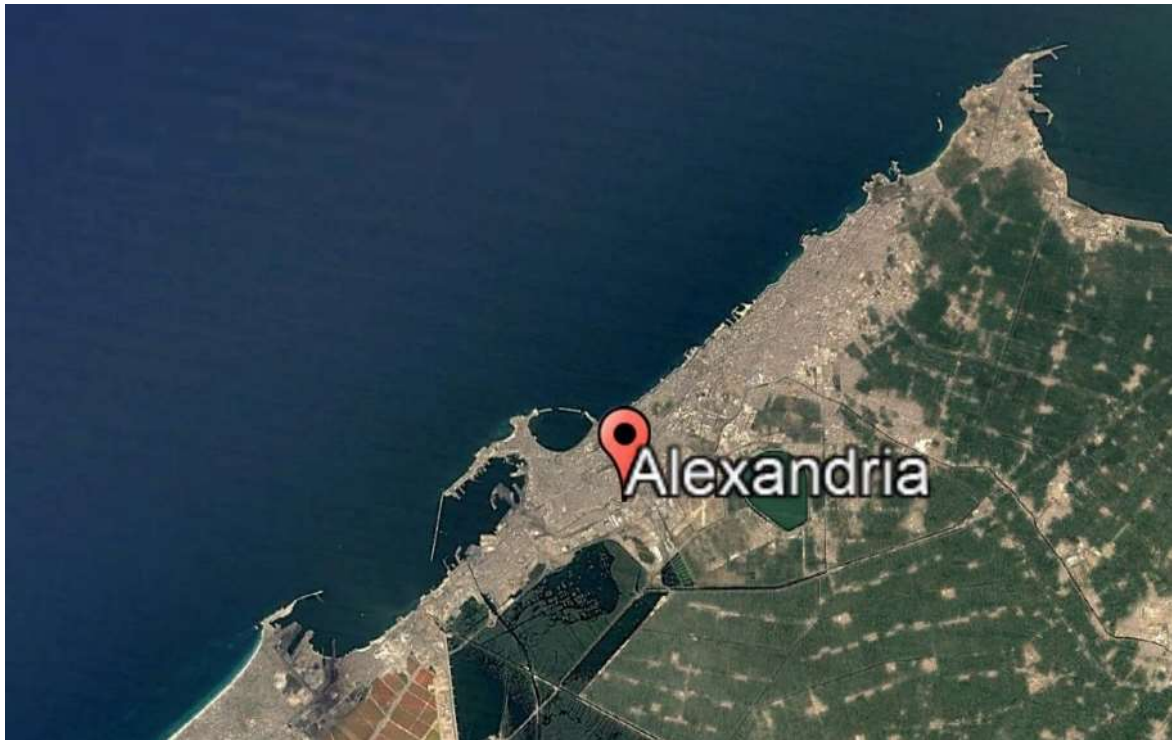


Figure 4-8 An overview of Alexandria city (Source: Google, September 2018)



Figure 4-9 The Eastern Harbour of Alexandria and the selected case studies (Source: Google, September 2018) edited by the researcher

Since each urban environment has a specific context to influence users and generates different reactions and perceptions, the study will investigate four squares in the Eastern port of Alexandria's old city centre; these have different characteristics and contexts. The aim is not to compare the case studies, but to analyse their sociability, which is influenced by socio-physical characteristics, in order to collect interesting data on each case. The purpose of studying the four cases is to investigate and evaluate whether they can be characterised as a sociable square, and how the quality of social life is potentially enriched within the squares.

One of the case studies is El-Mansheya Square, which is the oldest square in Alexandria's city centre; it dates back to the 1830s and was completed in 1855. Saed Zaghloul square in the 1900s replaced the Cleopatra Obelisque (Needle), which was given to New York and London. Abu El-Abbas Square is in the same area as Abu El-Abbas Mosque as well as the El-Abasiri mosque of 1887 and the El-Khaldin Garden. The four squares are located on the Eastern Harbour of Alexandria and are parallel to the seashore (Figure 4-9). They appeared fully complete in Alexandria's map of 1930 (Figure 4-10).

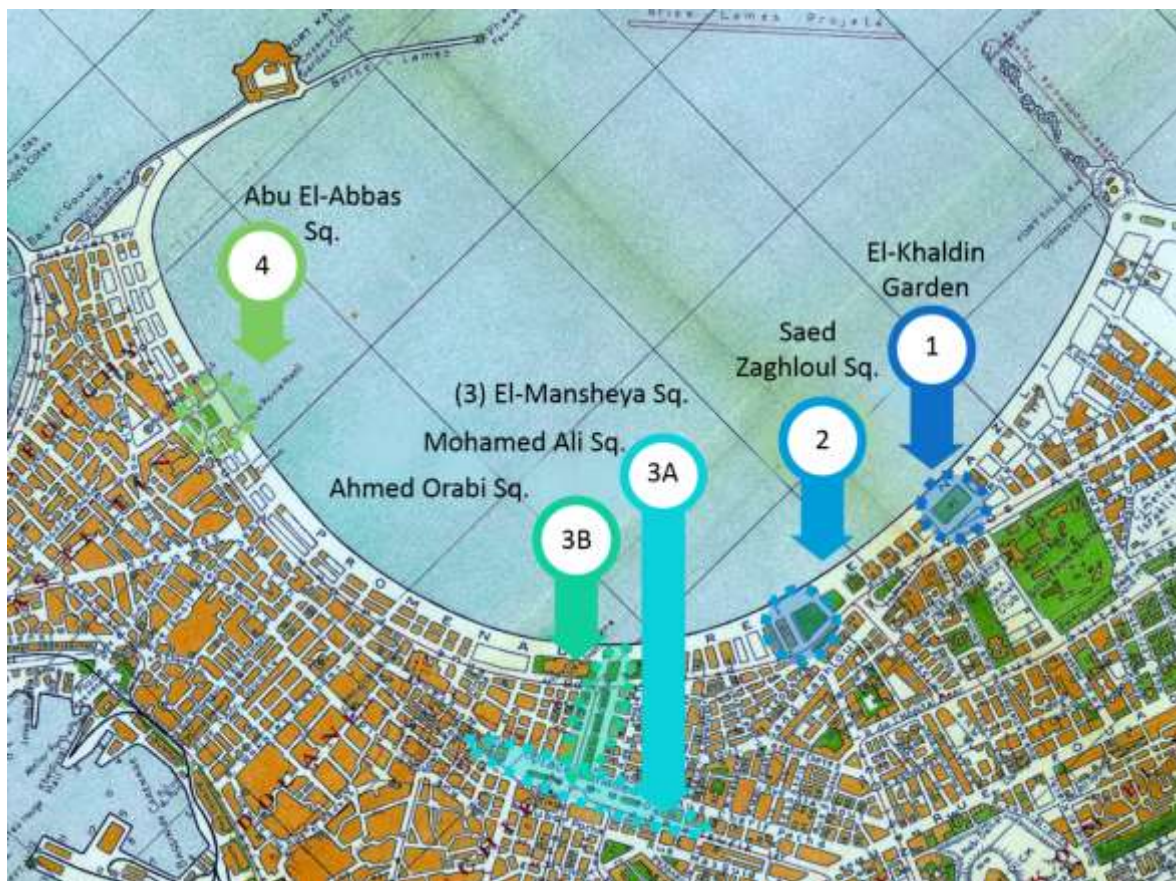


Figure 4-10 Alexandria's Eastern Harbour map of 1930 (Nicochosoff, 1930) adapted by the researcher

The identification of the four spaces is based on the range of activities, services, and types of users that typify each space (Table 4-3). Most importantly, the degree of ‘publicness’ was an important factor in identifying the spaces, where each enjoys certain aspects relevant to the inclusive/exclusive, social and symbolic qualities (Varna and Tiesdell, 2010, Dovey, 2005, Akkar Ercan, 2007). The descriptive profile of each space involves a brief outline of the spatial typology and context accessibility. This involves the availability of parking, the ease of identification, and the type of users - including their socioeconomic and sociocultural backgrounds - and the nature of their activities. Table 4-3 shows a colour scale that summarises the profiles of the urban open spaces.

Squares' Profile	El-Khaldin	Saed Zaghloul	El-Mansheya	Abu El-Abbas
Users				
Above Average Income				
Below Average Income				
Low Income				
Alexandrians				
Egyptians				
International				
Families				
Couples				
Singles				
Accessibility				
Parking availability				
Simple to identify				
Physically and visibility				
Spatial Typology				
Landmark				
Green space				
Pedestrian paths				
Architectural style				
A mixture of building type				
View				
Activities				
Residential				
Commercial				
Leisure and entertainment				
Religious				
Walking and Relaxing				
Sport Activities				
Family Area				
Administrative				

Key Legends

Strong	Weak
Average	N/A

Table 4-3 A summary matrix of the profiles of the selected urban open spaces

4.5.2.1 El Khaldin Garden

The first study area is El-Khaldin garden that was previously known as the quarantine's garden (Figures 4-11 and 4-12). It contains many iconic buildings; the first icon is the quarantine office building (Figure 4-13) that is now known as the Suzanne Mubarak Regional Center for Women's Health and Development, and was previously used by the World Health Organization (WHO). Another iconic building is the Qaed Ibrahim Mosque, which dates back to 1948 (Figure 4-14). It was designed by the Italian architect, Mario Rossi, as a memorial of Ibrahim Pasha, the heir of Mohamed Ali Pasha ([Awad, 2008](#)). The mosque symbolises the struggles faced in Alexandria's history, where demonstrators stood in its plaza to express their viewpoints. On the other side of El-Khaldin Garden, the space was redesigned and built to solve a parking problem in El-Raml station in the 1970s. It has a garden on the higher level of the street that includes memorial busts for Mohamed Korayem, Sayed Darwish, Hassan El-Eskandarany, and Abdallah Nadeem (Figure 4-15). Its dimensions are approximately 42m x 73m and its area is 3091m².



Figure 4-11 The Quarantine's Garden in the 1950s (Source: Auction personal collection post card, unknown)



Figure 4-12 A view from the garden in the 1950s. (Source:Heikal, 1996, p.143)



Figure 4-13 Postcard Alexandria - Quarantine office building circa 1930 (Source: Auction personal collection post card, unknown)



Figure 4-14 The two iconic buildings: The Quarantine and Qaed Ibrahim Mosque in the 1950s. (Source: Heikal, 1996 p.143)



Figure 4-15 El-Khaldin Garden square after the renovation in the 1990s (Source: unknown)

Table 4-3 (page 130) suggests that the space is rarely visited by above-average income users but is strongly used by average, below average and low-income users. The users are from the full range of social statuses, namely singles, couples and families, but are mostly Alexandrian. El-Khaldin garden is easily to identify and contains parking; however, it is not easily accessible on a physical basis and nor is it visible as it is at a different ground level, above the garage. The urban space itself is not considered a landmark; however, the Qaed Ibrahim Mosque has become more familiar to people since the 2011 revolution as Alexandria's Tahrir Square (Figure 4-16). It has a limited green area and pedestrian paths; an average architectural style surrounds the space but there is a mixture of building types and an attractive sea view.



Figure 4-16 El-Khaldin area on 1st February 2011 when tens of thousands of anti-government demonstrators marched on Alexandria, Egypt (Source: Ahmed Muhammed, AP)

4.5.2.2 Saed Zaghloul Square

The second square is located by the sea adjacent to Ramleh tram station; it is the hotel quarter and the hub of modern Alexandria. It faces the waterfront and Eastern Harbour, providing a terminal for tramways and a centre for cinemas, restaurants, cafes and bookshops at the heart of the modern city. The square was once the location of Cleopatra's Caesarium Temple and was known for Cleopatra's Needles (obelisks) (Figure 4-17). These were transferred to London's embankment in 1877 and to New York city in 1880 (Abdel-Hakeem, 1958). In 1902, the recreational waterfront was reclaimed from the sea, and in 1905, the new quay development was carried out on the corniche in Ramleh station, whilst its urban spaces became available for further development in the 1920's and now carry strong Venetian references.



Figure 4-17 Cleopatra's Needle on Alexandria's waterfront before 1877

Moreover, in 1919, W.H. McLean planned to use empty plots to create Place des Obelisques. In 1927, the municipality that completed the planning of the city centre undertook the creation of a large square, which was more than 5000m². Later, in the middle of this space stood the statue of the Egyptian nationalist leader, Saad Zaghloul (Heikal, 1996). The urban space is dominated by the Moorish façade of the 1928 Hotel Cecil on the right of the corner on the corniche (Figure 4-18). This was designed by the Alexandrian-Italian architect Alessandro Loria (Awad, 2008). Additional iconic buildings around the space include the Italian consulate, which was designed by Enrico Bovio in 1917 and is currently used as a bank (Figure 4-18), and the neo-classical building on the left (Figure 4-18) is the Chamber of Commerce (Awad, 2008).



Figure 4-18 Saad Zaghloul Square heyday before 1936: The garden without the statue (Source: Auction personal collection post card, unknown)

In 1936, the installation of Saed Zaghloul statue in the garden and changing the landscaping by the Ministry of Public work. Figures 4-19 and 4-20 show the different transportation modes; in Figure 4-19, the horse carriages wait on the corniche in front of the space and Figure 4-20, the urban space is transformed in shape, size, design and function. These images show a reduction in the greenery in order to provide a parking area in consideration of the new transportation modes. Figures 4-21, 4-22 and 4-23 show the square in 1943 with the bus hub adjacent to the space from the southern side during the 1940s and 1950s.



Figure 4-19 The Italian Consulate in 1930 (Source: Auction personal collection, unknown)



Figure 4-20 The waterfront of Saed Zaghloul square before 1936 (Source: Auction personal collection, unknown)



Figure 4-21 Saed Zaghloul Square after 1936 and the statue (Source: Auction personal collection, unknown)



Figure 4-22 Saed Zaghloul urban space from the western side in 1943 (Source: Auction personal collection, unknown)



Figure 4-23 Saed Zaghloul urban space from the eastern side in the 1950s (Source: Auction personal collection, unknown)

To improve urban efficiency in the 1990s, the square was developed with the removal of the public bus stations which caused a disconnect in the visual relationship between the sea and the distinctive buildings around the square. Instead, more trees, sidewalks, seats, distinctive lighting, fountains and cars parking were added, as shown in Figure 4-24 (Butler, 2004).



Figure 4-24 Saed Zaghloul Square after renovation in the 1990s (Source: unknown)

Table 4-3 (page 130) shows that currently, the space is visited by a few above average income users, whilst significant numbers of average and below-average income users visit and low-income users visit the space in average numbers. Alexandrians and Egyptians actively use the square; however, the number of foreigners using the space is weak. Instead, they pass by the space to use the hotel or cafés and shops around the area, such as Delice and Trianon. The space is very accessible and has parking available. For its spatial typology, the square is a landmark with green space but this is not always well maintained. There are pedestrian paths but they are not used that much due to the fence around the space. There is a strong Venetian and Moorish architectural style, a mixture of building types and uses, and a waterfront sea view. The urban space is heavily used for commercial, leisure and entertainment purposes and considered a family area. Also, it is averagely used as a walking and relaxing urban space; however, the area is not used greatly for religious, sports or administrative purposes.

4.5.2.3 El-Mansheya Square

The third case study area is El-Mansheya Square, which is composed of two urban spaces, namely: Mohamed Ali Square and Ahmed Orabi Square. It is the oldest square in Alexandria

and was its first, largest and most noticeable urban space. The area was an open field between 1798 and 1801 when the Bonaparte expedition landed and called it “*Place d'Armes*” (Awad, 1996). It became the site of a new European centre, which was designed by the Italian architects Francesco Mancini and Pietro Avascani (1820-1855). They introduced capitulatory economic existence into the urban scene. At this point, Alexandria existed effectively as two towns (Turkish and Modern), which existed side by side but were almost unaware of each other (Empereur, 2002). As the square progressively took shape between the high-density old Turkish town fabric and the European quarters, it attracted trading-consuls, merchants, and financiers associated with Mohamed Ali (Dessouki, 2012). The square became the separation point between the two realms. It was used by different social groups from both parts of the old and modern city, and many social-political events took place within its enclosure.

Since its creation, the space has been the subject of frequent actions of war, destruction, development, reconstruction, and memorials. It witnessed key national declarations, demonstrations, festive, social and religious parades, and even trials, executions and assassination attempts (Dessouki, 2012). In 1820, Okelle Neuve became the first building on the square and Tossizza Palace was later constructed on its axis; the latter building dominated the square for decades, and was later reused as a courthouse before it eventually became the Bourse (Figures 4-25, 4-26 and 4-27), namely the largest stock exchange in the East and the second largest cotton exchange in the world (Pallini, 2006). The square appeared complete and fully developed in Charles Muller's map of 1855 and was named “*La Grand Place*”.

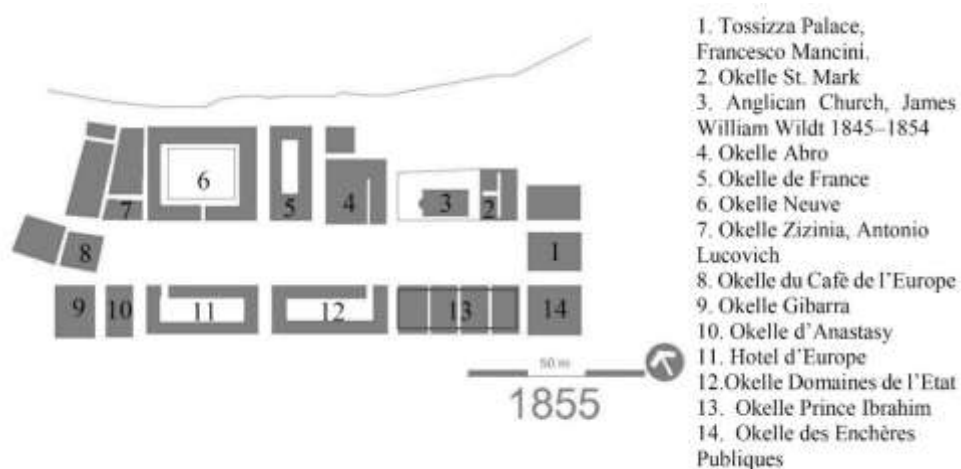


Figure 4-25 Mohamed Ali Map of 1855 based on Mullers' and data (Source: the author)



Figure 4-26 Place des Consuls in its final shape in the 1860s (Source: Auction personal collection, unknown)



Figure 4-27 The Bourse (Source: Auction personal collection, unknown)

The square was almost completely defined by commercial buildings. All buildings were compact blocks and harmonious with one another; they were approximately the same height and surrounded the massive rectangular space (Pallini, 2006). Alongside the commercial activities there were coffee shops on the ground floor of many buildings around the space. Among the dominant commercial activities, the individual exception was the Anglican church of St. Mark (Figure 4-28), which was built by James Wild in 1854 (Awad, 1996).

The square became a part of many historical events. In 1872, a bronze statue of Mohamed Ali, by the French sculptor Henri Alfred Marie Jacquemart, was raised as a monument to the founder of modern Egypt. This stood at the heart of the modern European city. After erecting the statue, the square was accordingly renamed "Place Mohamed Ali". In 1882, the square became the main target for the British bombardment (Figure 4-29) and the site of the executions of Orabi Pasha's nationalists in 1911 (Dessouki, 2012). The reconstruction and rebuilding of the new blocks saw similar styles to the 19th Century European galleries, which

marked a significant change. Although originally vital to the port, the square had principally become a financial centre (Ilbert, 1996). However, in less than a decade, the square was completely restored (Figures 4-30 and 4-31), and in 1897, electric trams were introduced (Figure 4-32).



Figure 4-28 The Church of St. Mark (Source: Auction personal collection, unknown)



Figure 4-29 Mohamed Ali square after the British bombardment in 1882 (Source: Auction personal collection, unknown)



Figure 4-30 The Consuls Square in 1891 (Source: Auction personal collection, unknown)



Figure 4-31 Mohamed Ali Square in the 1900s (Source: Auction personal collection post card, unknown)



Figure 4-32 El Mansheya Square in 1904 (Source: Auction personal collection post card, unknown)

Between 1902 and 1909, a new strip was added to Mohamed Ali Square that stretched at a right angle from the Eastern Harbour's Corniche. The new addition was named the French Garden and was established as replacement to the French Consulate and its garden (Figures 4-33 and 4-34). The design of the landscaping changed in the 1920s, as shown in Figures 4-35 and 4-36. Between 1934 and 1938, the monument of Khedive Ismail (Figure 4-37) was designed by the Italian architect Ernesto Verucci Bey (Awad, 2008). In 1966, the Revolution's government pulled down the statue and turned the structure into a Monument to the Unknown Soldier, which remains to date.

Furthermore, squares and streets were renamed in support of nationalism; for example, Mohamed Ali Square became El-Tahrir Square (Liberation Square). However, Alexandria's residents do not use this. The French Gardens Square became Ahmed Orabi Square, which was named after the Egyptian nationalist who in the 1880s took a stand against the Khedive and European control of Egypt. In 1968, the Governorate was replaced (Figure 4-38), which

changed the square's identity. Furthermore, in 1999, the Governorate of Alexandria carried out a development scheme in the Square. The bus station in Orabi Square was removed and it became a public garden again. The new design was considered a success at the time; the new green areas were always occupied by large numbers of users, especially at weekends and feasts.



Figure 4-33 The French Garden in 1910 (Source:Haag, 2008, p.21)



Figure 4-34 The French Garden post card in 1916 (Source: Auction personal collection post card, unknown)



Figure 4-35 Mohamed Ali Statue and the French Garden in the 1920s (Source: personal collection, unknown)



Figure 4-36 The French Garden with the Khedive Ismail monument on the corniche after 1938 (Source: Auction personal collection post card, unknown)



Figure 4-37 The monument of Khedive Ismail after 1938 (Source: Auction personal collection, unknown)



Figure 4-38 The French Gardens with the bus terminal during the early 1970s (Source: Auction personal collection, unknown)

The decline of the urban quality of El-Mansheya Square after the 2011 Revolution is obvious. Heavy traffic has led to a lack of good pedestrian accessibility and safety (Figure 4-39). The square is heavily occupied by informal commercial activities. Passageways are completely blocked by street vendors. The surrounding historical buildings are badly deteriorating due to a lack of maintenance. Additions to and remodelling of the space are increasing every day. In terms of new architecture, El-Mansheya Square has witnessed a number of poor, uncharacteristic new buildings since the 1980's, which has had a negative influence on the square's identity and on its age value; this is especially the case in Orabi Square (Figure 4-40). In 2014, the Governorate of Alexandria carried out a removal action on all informal commercial activities in El-Mansheya Square, and undertook the partial repair of the public space, which had a positive impact on its use.



Figure 4-39 Mohamed Ali Square (Source: captured by author, 2013)



Figure 4-40 Ahmed Orabi Square in 2013 (Source: captured by author, 2013)

Table 4-3 (page 130) shows that currently, the space is rarely visited by above average income users, whilst large numbers of average, below average and low-income users heavily visit the space. Alexandrians and Egyptians actively use the square; however, the number of foreigners using the space is very low. Nevertheless, they pass by to get to work near the area, heading for the consulates, schools or shops. The space is very accessible and has parking available. Nevertheless, its capacity is not efficient, especially during the working hours throughout the weekdays. For its spatial typology, the square and its monuments are landmarks; it includes green areas but these are not always well maintained. The pedestrian paths are not always usable due to their condition or the presence of street vendors. Furthermore, the European architectural style dominates with a mixture of building types and uses, especially Mohamed Ali; however, these are not of good quality. The urban space is strongly used for commercial and administrative purposes yet some people also use the space for rest. Also, the area is averagely used for walking and relaxing, but is used little for religious purposes.

4.5.2.4 Abu El-Abbas Square

This is adjacent to the semi-private Mosques Square and is one of the most famous religious landmarks in Alexandria city. It is frequented by large numbers of tourists and Egyptians every year. It includes three of the city's oldest mosques; El-Morsy Abu El-Abbas Mosque, Sidi El-Boussiri Mosque and Sidi Yacout El-Arsh Mosque (Figure 4-41). These all overlook the Mediterranean Sea coast (Aly, 2011).



Figure 4-41 Map from 1886 showing the location of the three mosques in Alexandria. The nearest to the seashore is El-Boussiri, whilst the largest is Abu El-Abbas and Sidi Yacout mosque is on the left (Source: Jondet, 1921)

Abu El-Abbas El-Morsy Mosque was named by the Alexandrians and is the most famous, historic and iconic mosque in Alexandria. It was primarily built in 1775 over the tomb of the Spanish scholar and Imam, Abu El-Abbas (1219-1286), and stood on a square (Figure 4-42) overlooking the Eastern Harbour (Aly, 2011). Later, the mosque was rebuilt by a Moroccan elite (El-Darwish and El-Gendy, 2016). It is the main assemblage mosque in Alexandria, and an important site of visit in the Islamic world. It is built to a notable scale to accommodate the mausoleum of the most popular Muslim saint located there, whose name was given to the monumental building. Currently, the mosque is isolated in a plaza located in the heart of the historic old Turkish town, on the Ras el Tin peninsula. Clearly visible from sea (Figure 4-43), the mosque is an unattached building, isolated from the discontinuity of the Corniche and overlooking a ‘green square’ which was also designed by Rossi (Turchiarulo, 2013).

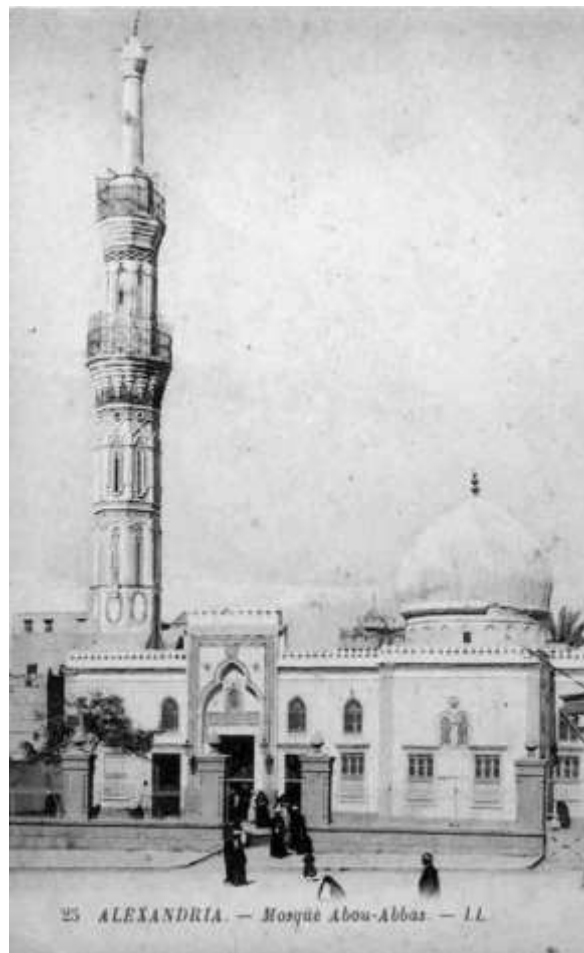


Figure 4-42 Abu El-Abbas Mosque before the 1900s and before its destruction and renovation (Source: Auction personal collection post card, unknown)



Figure 4-43 Abu El-Abbas Mosque and Square visible from the sea (Source: <https://www.alamy.com/alexandria-egypt-december-18-2017-the-facade-of-chamber-of-commerce-faces-omar-lotfy-street-and-neighboring-with-italian-styled-historical-mansi-image214443105.html> ,downloaded May 2019)

The mosque has undergone a number of stages of construction, renovation and development. King Farouk ordered the establishment of a large square, called Mosque Square, which included the large Abu El-Abbas mosque and a mosque of Imam El-Boussiri and the Sheikh Yacout throne; the project plan was design by Mclean in 1920 (Figure 4-44).



Figure 4-44 McLean's proposal in 1920 for the renovation of the area and the selected space (Alexandria et al., 1921)

In 1925, the construction of the mosque of El-Morsy Abou El-Abbas began on the site of the Eighteenth Century version. After the famous lighthouse, it became one of the symbols of Alexandria. The design of the mosque by Mario Rossi was completed in 1943 (Figures 4-45 and 4-46). The mosque features an Andalusian-style building with marble, copper and eight-shaped columns, as well as Arab and Andalusian motifs (Turchiarulo, 2013). Meanwhile, to the right of the Mosque of Abu El-Abbas is one of the ancient mosques, which was named after his pupil, Imam al-Boussiri (1213-1296). El-Bousirri mosque was built in the Turkish style (Figure 4-47) and is located on the seashore in Bahary area opposite Abu El-Abbas Mosque; it also adopts the same architectural pattern. In 2002, the mosque was restored without any changes to its Neo-Ottoman architecture style (El-Darwish and El-Gendy, 2016).



Figure 4-45 Abu El-Abbas Mosque (Heikal, 1996)



Figure 4-46 Abu El-Abbas Square from the corniche in 1966 (Source: Auction personal collection, unknown)



Figure 4-47 The Mosque of Sidi El-Boussiri before 1920 (Alexandria et al., 1921)

The third is Sidi Yacout mosque, which also overlooks the seashore and includes the tomb of Sheikh Yacout. The mosque architecture is not that different from the Mosques of Abu El-Abbas and El-Boussiri. The small mosque, which was rebuilt in 1863, was totally reconstructed in 2002. Thus, both the old and new mosques are similar to the style of Abou Abbas (El-Darwish and El-Gendy, 2016).

In the square, there is substantial traffic on all days along the year that includes both users and worshipers. This is particularly the case during the month of Ramadan, and when local or international tourists visit in the summer. In addition, there are a number of carnival forms and popular displays that attract people during the year, day and night (Figure 4-48).



Figure 4-48 Carnival forms and local fan fair in 2017 (Source: captured by author, 2017)

Table 4-3 (page 130) illustrates that Abu El-Abbas Square, which is located on the waterfront, cannot be entered by users; this barrier arose before 1966 (Figure 4-46). Moreover, its boundaries outside the area and around the square are mainly visited by average to low-income residents, especially Alexandrians and Egyptians, in the summertime. However after the 2011 Revolution, the numbers of international tourists and

foreigners visiting the area declined. Nevertheless, all types of user, including families, couples and singles currently use the outer skin of the square.

The space is really accessible but parking is very limited, especially at Friday prayer when cars will park illegally in two rows. Also since 2011 and after the demolishment and reconstruction of buildings around the area, there has been no code nor any regulations. Therefore, it is less easy to identify the Square and it is not that visible from a distance. However, it is one of the famous landmarks in Alexandria because of the mosques and its surroundings, which host most of the renown Alexandrian seafood restaurants and ice cream shops that people usually visit while staying in the city. The public are not permitted to use the green area as there are no pedestrian paths inside the square; yet neither are those around the space in a good condition.

There is a strong domination of Islamic architectural style and a mixture of building types and uses including religious, residential, recreational, such as coffee shops and restaurants. Additionally, this square includes a view of the citadel and local fishing ships that represent some of Alexandria's famous images (as shown in Figure 4-49). The urban space is heavily used for religious, residential and leisure purposes yet some people use the space as a meeting point. Also, it is less well-used for walking and relaxing, which may be due to the proximity of the corniche and waterfront. However, the space itself is poorly maintained and the area is averagely used for residential purposes.



Figure 4-49 The view from the Square of local fishing ships in the Eastern Harbour (Source: <https://www.alamy.com/stock-photo-the-view-of-eastern-harbor-full-of-small-fishing-boats-the-medieval-Qaitbay-citadel-is-located-on-the-distance-Alexandria-Egypt.-Image-ID-M238F6.,downloaded-May-2019>)

4.5.3 Units of Analysis

The main unit of analysis in this research is the nature of the transformation of public space in Alexandria. However, based on the main research question, three additional units of analysis have also been identified. Table 4-4 outlines these units of analysis and their empirical indicators. Their identification has assisted the research design process by enabling a focus on the nature of the research data for collection; this is based on their observed indicators.

Units of analysis	Indicators
Facilities of public space	<ul style="list-style-type: none"> Formation and configuration of public spaces Physical design features: location, size, orientation, layout, etc., including the physical elements present in the public space Management of the public space (including control and accessibility)
Use of public space	<ul style="list-style-type: none"> Pattern and frequency of use: daily and occasional use Type of activities: necessary, optional and social Location and timing of use
Meaning of public space	<ul style="list-style-type: none"> Understanding of the purpose and significance of the public space Potential benefit from using public space Social interaction A sense of place Place attachment

Table 4-4 The indicators of the units of analysis

4.6 Data Collection

Different methods are adopted within qualitative research, such as: case studies; the examination of documentary materials; unstructured, semi-structured and structured interviews; behaviour observations; conversations; personal experiences; reflective, historical, visual assessments, and texts and images that describe routine and problematic moments and meanings from an individual's point of view (Creswell, 2014, 2013, 2017). A wide range of research methods exist and it is important to choose the most appropriate to gather the most relevant data (Bryman, 2015). This research involves a combination of several different data collection methods: secondary data, including a review of literature and documents, and primary data, which entails fieldwork on case studies, including an urban design inventory check list (by the researcher), an Urban Attachment Affordance scoring sheet (by the researcher), a visual assessment, observations, behaviour mapping (Sanoff, 2016), a visual preference survey (Nasar, 1992, Rapoport, 1982), a close-ended questionnaire, a walking tour urban space assessment procedure (Salama and Azzali, 2015), and structured interviews. Methods were therefore selected and analysed to emphasise the

phenomena through individuals' and groups' perceptions of either users or professionals. These methods differ in their weights and aim to produce different types of findings which answer the thesis' questions. The use of multiple methods provides different lenses to potentially understand and critically evaluate the findings. These methods are briefly described below.

4.6.1 Literature Review

An extensive literature review on the research topic was conducted at a preliminary stage, as shown in Table 4-5 (Page 153). The majority of the initial work reviewed formal, informal, and recent relevant publications in books, journals, websites, newspapers, online documents and official policies. It provided a fundamental step to clarify the research direction and to determine the gaps in knowledge that this study aims to address. This review was based on: the transformation of port cities, Alexandria as a port city and its growth, and a theoretical exploration of successful public spaces. This review helped achieve the first objective of the research, as explained in Chapter 1 and Table 1-1.

4.6.2 Methods for Evaluating the Quality of Built Environment

As shown in Table 4-5, in order meet objective 2, the first section is associated with an assessment of successful public spaces through a people-based approach, whilst the second section is based on users' reactions to public spaces using the analytical framework. The assessment mechanism for successful transformed public spaces was conducted in two ways; first, by investigating successful people-based concepts in the physical built environment, and second by evaluating users' perceptions, interactions and attachments in the space. A set of tools was selected to fulfill the first part of study related to the quality of the physical built environment. These tools included: an impressionistic assessment score sheet and a walking tour assessment score sheet. For the second part, which evaluated users' perceptions and interactions in the space, observations, behaviour mapping, a visual preference survey and a questionnaire for users' reactions to public spaces were selected.

<i>Obj.</i>	Data Collection Method	Expected Output
1. Identify the physical, socio-cultural, socio-economic, political and administrative aspects of the transformation of port cities and explore the nature/type/influences of the growth and transformation of Alexandria.		
	<p>Secondary data</p> <p>Reviewing and analysing relevant books, articles, journals, conference papers, theses and website on water/city relationships, the Mediterranean Basin and the evolution Ottoman Empire port cities.</p> <p>A historical review combined with a morphological study and graphic historical maps of the urban fabric of Alexandria reveals the aspects and characteristics of the existing built form, which have resulted from the continual change witnessed by the city.</p>	<p>A general understanding of transformation of port cities, with focus on the Ottoman Empire era, finding the aspects that transformed the port cities (city centre and public spaces) that will lead to learning similar context, identifying issues from example port cities</p> <p>Identify the key issues of public spaces in port cities</p> <p>An understanding of Alexandria transformation, and the importance of its city centre and public spaces on the Eastern Harbour leading to a drive to the theoretical framework</p> <p>Places the research in context</p>
2. Understand the physical/morphological and sociocultural attributes of public space on waterfronts in terms of facilities and use (people-based approach) and a sense of place		
	<p>Secondary data</p> <p>Reviewing and exploring previous theories and frameworks concerning public space, the waterfront and the two phenomena considered jointly together.</p> <p>Categorising the concepts learned from literature review</p>	<p>Leads to the preparation of a framework for analysis</p>
3. Examine the facilities and use of public space on waterfronts and assess the consequences of current urban growth including the changes to meaning and sense of place among users in terms of usability, efficiency and perception.		
	<p>Primary data</p> <p>Survey</p> <p>Impressionistic assessment score sheet</p> <p>Walking Tour assessment score sheet procedure</p> <p>Users' Reaction to Public Spaces close-ended questionnaire</p> <p>Visual preference survey</p> <p>Observations</p> <p>Behavioural mapping and visual assessment</p>	<p>Explains the current situation of public spaces</p> <p>Validates the results</p>
4. Draw lessons from the case study and recommend guiding principles to enhance the existing and future development of public spaces on the waterfront of Alexandria, improving public life, users' satisfaction and the transformation of Mediterranean port cities		
	<p>Synthesis of the main findings</p> <p>Drawing lessons from case studies</p>	<p>Highlight weaknesses in the current public open space and its facilities processes.</p> <p>Recommendations to improve the public open spaces in Alexandria and other Mediterranean cities.</p>

Table 4-5 Literature review's objectives, methods and expected outputs

An impressionistic assessment and an urban space walking tour assessment procedure were used to produce a critical evaluation of the quality of urban design. These were thus used to promote successful public spaces in the case study spaces. Each method was respectively selected to evaluate the design from a specific position: the first mainly focused on urban design features and the qualities related the space's appearance while the second included an examination of functional, social and perceptual attributes (Table 4-6). Combined, they constructed a solid assessment of the design, and helped to explore the extent to which this successfully supported the space. These tools were designed by using scoring sheets and ticking checklists about the concepts related to the perception of the surrounding environment. Furthermore, the methods were applied by visiting each of the selected case study spaces and by scoring and ticking the sheets. In order to validate the data from such tools, a team comprising the author and nine other built environment and architecture professionals applied the tools individually and separately from the rest of the team.

Key	Indicators
Functional	
Variety of use	Diversity and complexity
Accessibility	Richness and diversity of landscape elements
Legibility	Robustness and adaptability
Definition	Formal quality
Richness of visual experience	Spatial quality
Linkage and accessibility	Microclimate consideration
Social	
Sense of interaction	Functionality
Inclusivity	Accessibility for users with special needs
Diversity of age groups	Permeability and movements
Diversity of activities	Outline and design features
Efficiency of use	Human scale
	Harmony
Perceptual	
Human needs for regular use	Attractiveness
Safety and security	Noise acceptability
Suitability and desirability	Identity and history
Relaxation and comfort	Night engagement
Memory	Visual Pleasing (View)
Distinction and recognition	Density of users
	Place management

Table 4-6 Functional, social and perceptual attributes considered in the assessments from the experts' perceptions

Finally, evaluating the quality of users' perceptions, interactions and a sense of place in and with the space formed part of the research behavioural mapping, visual preference survey and close-ended questionnaire on urban attachment. These were identified as suitable tools to assess people's activities and the way they use and sense the space. The behavioural mapping method was also conducted in the case study spaces. The visual preference survey and the users' reaction questionnaire focused on the visual survey and the closed ended questionnaire examined the way in which different types of users perceive the public space's spatial and visual qualities to reveal how those who live, visit and work in the public spaces perceive and sense it within its urban context. More detailed information about each tool and how it was applied is provided below.

4.6.2.1 Impressionistic Inventory

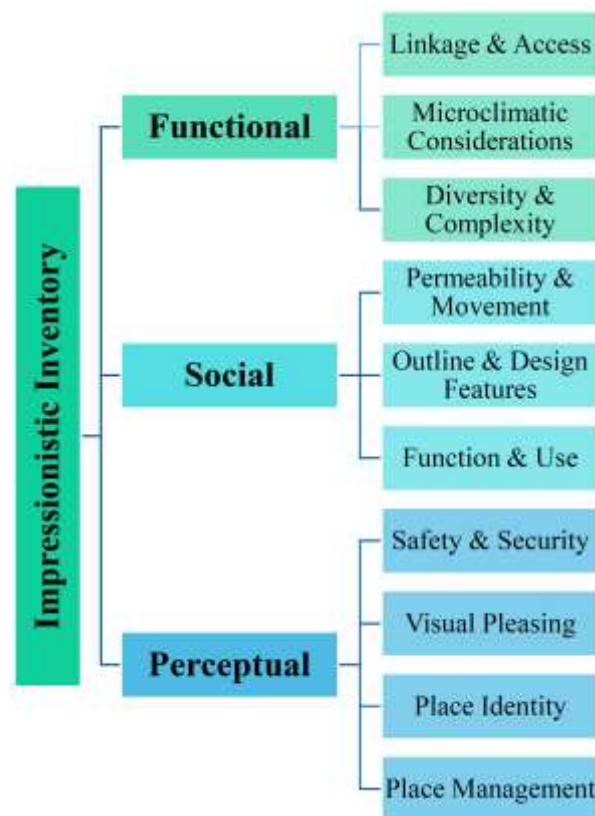


Figure 4-50 The functional, social and perceptual attributes of the impressionistic inventory

This score sheet (see Appendix B p.) was used to evaluate the urban design and environmental features and their attractiveness. This tool is long because it looks at the existence and quality of urban design features. It deals in depth with the functional, social and perceptual aspects of the space as presented in Figure 4-50. It consists of 65 questions that will be presented in Chapter 6 (section 6.2), which focus on a variety of matters, such as accessibility or ease of movement, overall attractiveness, and the perceived safety with

regard to barriers, buildings, driveways, land uses, lighting, maintenance, parking, safety and sidewalks. The questions refer to the presence of urban features designed to evaluate the relative attractiveness of the space. The questions in the list were adapted to assess various urban design environments in this research context. The nature of the inventory questions makes it easy and straightforward to answer the score sheet, which helps to increase its reliability. For validation purposes, this was conducted by a professional team, which consisted of the researcher and nine architects (professional or academic). Each member of the team separately conducted the assessment. Scores were averaged and an overall score for each urban space was calculated.

4.6.2.2 Walking tour assessment

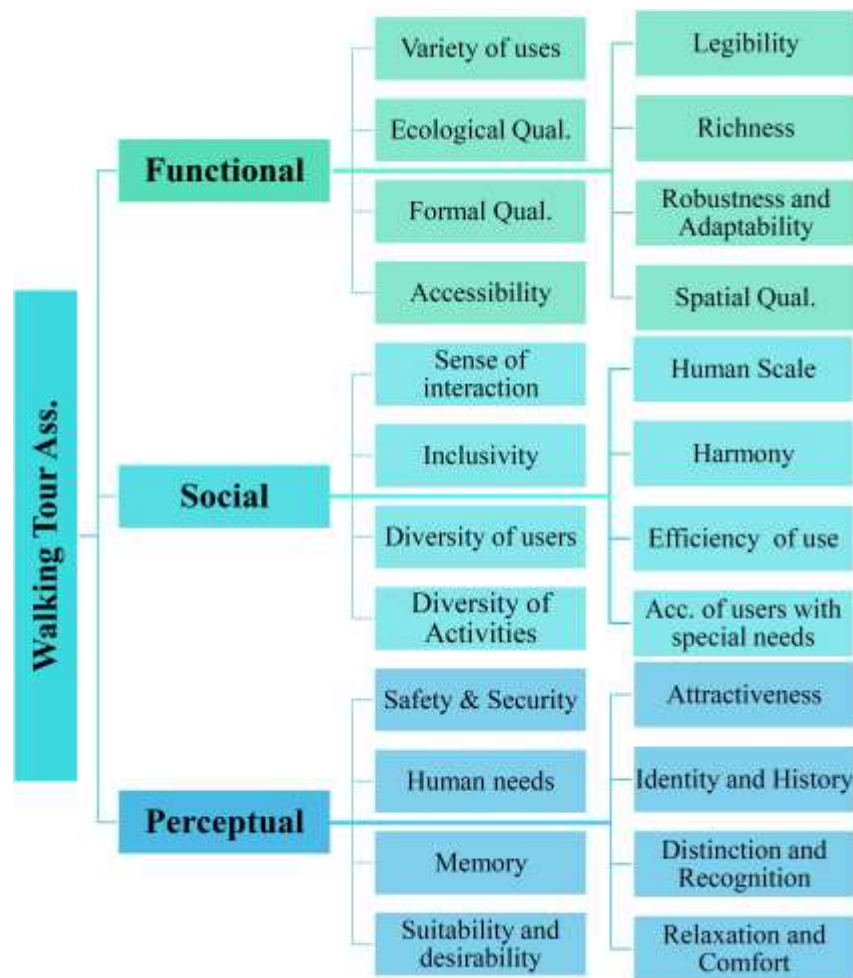


Figure 4-51 Functional, social and perceptual attributes for the walking tour assessment

Following earlier scholarly explorations conducted in other contexts (Salama and Azzali, 2015) introduced a step-by-step procedure for investigation; thus, a walking tour assessment tool was designed to facilitate a comprehension of urban spaces in Doha, including their

different attributes and the users associated with them. The tool is structured in terms of checklists (Appendix C) underlying three major categories of attribute: functional, social and perceptual (Figure 4-51). It was also developed in a manner that allowed the researcher to perform the walking tour to take a relatively structured walk-through an urban open space. Each category involved checklists with a scoring system. Checklists were phrased in the form of questions underlying each category. Questions were designed in a manner that reflected the essence of each attribute. Numerical scores were assigned to the questions to represent the degree of appropriateness; this was determined using a four-point scale where 1 represented highly inappropriate and 4 represented highly appropriate. Scores are averaged and an overall score for each urban space was then calculated. Concluding observation-based comments and supporting illustrations were developed while highlighting the positive and negative attributes in each space.

Evaluating public space using the Impressionistic Inventory and the Walking Tour Assessment

The impressionistic inventory is constructed from 65 variables and the walking tour assessment is constructed from 26 variables to evaluate the three dimensions of public space. The assessments captures and measures both observed behavior (use) and perceptions of public space. The variables of the two assessments are observable and rated by the professionals team and the researcher by observing the space and its interaction between the space and its occupants.

The scoring criteria for each variable are based on rating scale ranging from 0 to 4 as follows:

- (0 – ≤1) Absolutely Inappropriate, (>1 – <2) Inappropriate,
- (≥2 – <2.5) Slightly Inappropriate (critical zone)
- (≥2.5 – <3.5) Appropriate and (≥3.5 – 4) Absolutely Appropriate.

4.6.2.3 Observation and Behavioural Mapping

In order to evaluate its success, it is essential to test users' interactions with the space after evaluating the quality of the urban design of an open space. Thus, observation and behaviour mapping were selected to assess users' behaviours in the space. Observation is a very well-known method within built environment studies as it enables an understanding of people's behaviour in spatial settings. Behaviour, environment, time, the observer and a record of the observation are the main elements of this method (Bechtel et al., 1987). It helps in attaining a substantial perception of the actual use of a designed space (Marcus and Francis, 1998).

Proshansky et al. (1976) initiated a recording technique to support the observation method; this illustrates people's activities in the built environment and is known as behaviour mapping. Behaviour mapping is a method widely used by researchers to understand human behavioural dynamics in any built environment; this is achieved by recording the location of subjects and simultaneously measuring their activity levels (Cosco et al., 2010). Evaluating the success of the selected case study required insight into users' behaviours. Therefore, both observation and behaviour mapping were selected to conduct the empirical work and provide an inclusive understanding of the way users use the case study spaces.

Observation uses a systematic behaviour recording form. It is used as an explicitly formulated method to record participants' behaviours (Bryman, 2015). Pre-defining what to observe, and how to record over a predetermined time enabled control, and ensured the same method was applied each time. In comparison, behaviour mapping was employed to illustrate the activities' locations on the map of each case study space. The researcher spent an hour recording notes on pre-prepared sheets and maps concerning users' behaviours. This was carried out twice in the morning, afternoon and evening during weekdays and weekends at each location. The recording sheet was designed to record first, the general issues of the visit, such as location, date, time, temperature and weather and second, a detailed description of users' behaviours and actions. Sketches of the activities that took place, such as walking, playing and sitting, were marked on the map. Users' movements throughout the space were also sketched on maps. Furthermore, counts of users' age groups, genders, apparent ethnic backgrounds and their activities were taken. Taking note of all activity was not an issue since spaces were compact, not busy and generally users spent a sufficient time in most spaces, with the exception of El-Mansheya Square. In this space, the researcher needed help from three colleagues, and divided the space into four parts due to its size. This helped to record activities at the same time three times over weekdays and weekends (see Appendix D).

4.6.2.4 Visual Preference Survey the First Part of the Attitude Survey

Research to examine the mutual relationship of people and the urban environment continues to highlight that the spatial quality of the surrounding context affects immediate experiences and influences subsequent reactions to both the setting and its users (Cho et al., 2015, Cojuharenco et al., 2016, Francis et al., 2012, Holland and Foundation, 2007, Lang, 1974). Assessing the human experience of different urban open spaces of the same urban context provides a substantial understanding of the values and significance of these spaces to their users (Lindal and Hartig, 2013, Nasar, 1992, Rapoport, 1982, Ratcliffe and Korpela, 2016,

Ruddick, 1996, Sanoff, 2016). Therefore, the third layer of the investigation aimed to provide an understanding of users' perception of the selected spaces by utilising a photographic attitude survey (Appendix E) where users were asked to respond to the images of each space by either using polar adjectives that best describe them or neutral. The attitude survey included questions that enabled the identification of spaces that were most liked, most visited, and most passed-by, as well as spaces that represented the city and users' personal details (age, gender, nationality, etc.). While the aim was not to generalise the outcomes of the survey, the responses offered an indication of the qualities of the spaces based on respondents' relative experiences. The survey was distributed to users in public spaces and a digital software version was sent to Alexandrians or people living in Alexandria to generate a general understanding of the values and significance of these spaces for the residents of the city. In total, 288 users participated in the questionnaire for the selected public spaces and the data are analysed by their frequency.

4.6.2.5 Users' Reaction to the Public Spaces Questionnaire: Second Part of the Attitude Survey

As above, the questionnaire was distributed to participants in public spaces and a digital version was sent to Alexandrians or people living in Alexandria to enable a general understanding of users' reactions to the selected public spaces with the same 288 participants. The nature of the questionnaire made it easier and more straightforward to answer than those of the score sheet, and this helped to increase its reliability.

The functional, social and perceptual attributes (Figure 4-52) were further explained in Chapter 3, section 3.6. Within the questionnaire users were asked to respond to different types of questions; firstly, were the yes and no questions; moreover, if participants selected yes they were required to scale their agreement from (1) strongly agree to (5) strongly disagree. Another question type was composed of yes, no and don't know responses, as shown in Appendix E. The analysis was based on the frequency and was broken down by age or gender to build a greater understanding of the findings.

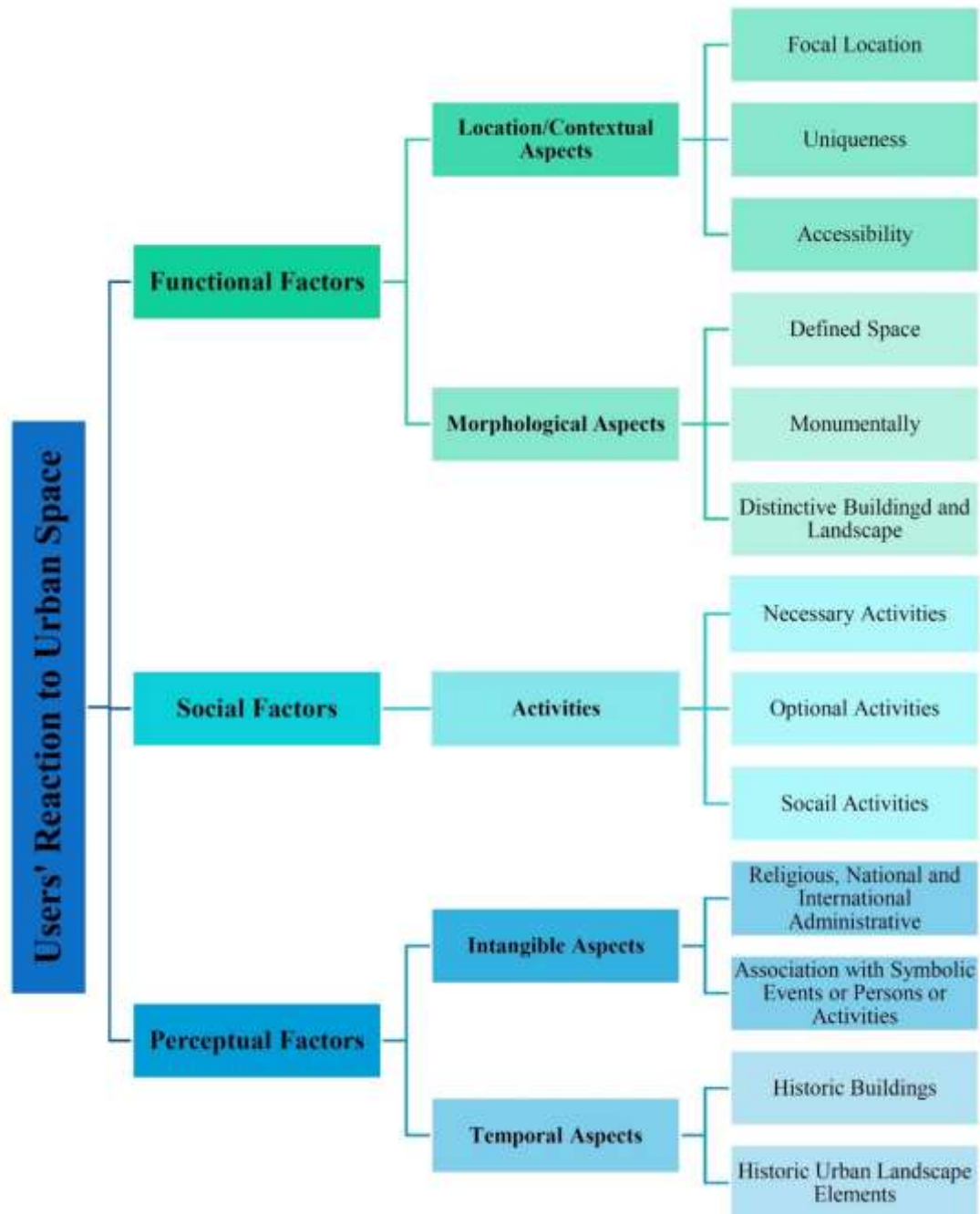


Figure 4-52 Functional, social and perceptual factors of the users' reaction survey

4.7 Ethical Issues

Ethical principles are fundamental considerations in conducting social research. They are concerned with what is or is not legitimate to do in a morally correct way while producing the research. [Diener and Crandall \(1978\)](#) categorise these principles into four main parts: firstly, ensure that there is no physical, mental or social harm to participants and the researcher; secondly, check whether there is sufficient or a lack of informed consent; thirdly,

ensure there is no invasion of privacy; and fourthly, make sure that there is no element of deception ([Bryman, 2015](#)).

With respect to causing no harm to participants, no pressure was imposed in any way on participants to be part of the research. In both the survey and questionnaire, sensitive issues that could cause potential complications were avoided. Regarding informed consent, participants' names and any personal question that could lead to the disclosure of their identities was avoided in the questionnaire. Furthermore, to ensure there was no element of deception in this research, all participants were informed of the author's position as a PhD researcher, given a brief of the topic, the purpose of their research and the value of their contribution. Ethical approval was obtained from the University of Strathclyde and a consent letter for the experts and participants was included (see Appendix F).

4.8 Limitations

One limitation was regarding the language (Egyptian Arabic), which included the communication and wording of users' surveys or questionnaires. Some of the participants were not well-educated so the questions were translated in a way that ordinary users or visitors could understand the tool. Another limitation was that a number of elderly users could barely read, and a number of participants could not read; thus, the researcher read the questions out in the same tone for all the respondents in order to avoid influencing the answers. There were issues in applying the questionnaire with users from such groups in the case study spaces. Another general limitation was related to the fact that this research was conducted abroad and the empirical work was restricted by the time available for fieldtrips.

4.9 Conclusion

The research methodology proposed for this study is based on multiple case studies and has been outlined in this chapter. It also has explained the strategic approach, the research method and the techniques for data collection, evaluation and analysis used in this research. The rationale for choosing a mixed method research study and the data collection and analysis methods has been explored. It has been argued that both qualitative and quantitative methods have been used for this study in order to create a comprehensive picture and understanding of the pattern of use and the relationship between design, social interaction and place attachment. New measures and indicators have been developed based on existing tools to measure the quality of the functional, social and perceptual attributes; this includes

the social interaction and the use of the space among users of the selected public spaces and the residents of Alexandria. In order to capture the quality level, three different attributes have been proposed from the experts' perceptions, namely the function, social and perception. In addition, the same attributes from users' perceptions were driven by the place attachment affordance measure in terms of how frequently people use the spaces. Furthermore, assessment sheets, self-completion questionnaires and site observation have been used to collect data in the four public spaces and these concern social interactions in the use of space, and the design qualities of such public spaces.

Figure (4-53) shows the multi-layered methodological approach and its orders applied in the study. Starting with the literature review of secondary data related to the water-city relation, Mediterranean basin, transformation of the Ottoman Empire's port cities and Alexandria's transformation in Chapter 2. Leading to Chapter 3 which, reviewing previous theories and frameworks concerning public spaces, the waterfront and people-based approach to categorise the concepts in the social, functional and perceptual attributes as mentioned before. The qualitative data has been analysed using content analysis to understand patterns of social interaction and the use of public spaces among the users of the four selected case studies. Moreover, the chapter provided an overview of the selected case studies by providing brief information about their history, transformation and changes, and the characteristics of each space.

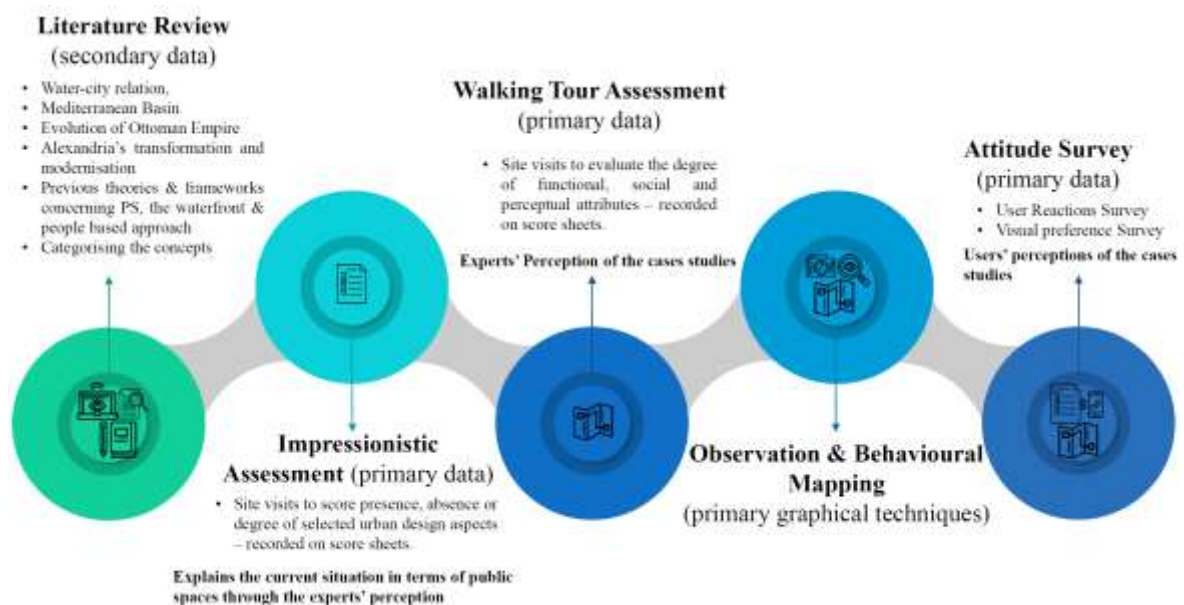


Figure 4-53A Multi-Layered Methodological Approach

Therefore, qualitative and quantitative approaches were combined in selecting methods to collect data. The data collection techniques, both the field work and desk study, were grouped into two groups. The evaluation of the transformed public spaces from the professionals' perception are the impressionistic assessment, walking tour assessment and observation and behavioural mapping, while the evaluation of the transformed public spaces from the users' and residents' perception is the Attitude survey that is composed of the visual preference survey and the users' reaction questionnaire. These professionals' perception techniques were applied at the level of the case study and the users' and residents' perception techniques were applied on both at city and case study spaces level to understand the users' reaction of the visitors and the people of Alexandria in general towards the case study transformed spaces.

As it shows in Figure (4-53) The impressionistic assessment was applied first on the selected public spaces between December 2016 and March 2018 to record and explain the actual situation of the public spaces through the experts' perception that. The second evaluation took place between February and April 2017 was the walking tour assessment; its purpose is to facilitate comprehension of the selected urban spaces in Alexandria, their different attributes and the users connected with them through the professionals' perception. The third layer was the behavioral mapping and observation that was completed by the researcher by observing the users during their static activities in the square throughout various visits to the public spaces carried out on different weekdays and weekends during the morning, afternoon and evening to record users' behaviours within the space. The attitude survey was the last tool applied at the level of case studies the questionnaire was distributed manually to the users and the visitors within the spaces. And on the city level an online questionnaire were distributed on a number of Alexandria's resident the participants were given more than three months to respond to the survey and were offered the opportunity to contact the researcher for any clarification. The findings of the techniques applied are discussed in the following chapters; Chapter 5 (Case Studies Analysis from Experts' Perception), Chapter 6 (Case Studies Analysis from Users' Perception) and Chapter 7 (Discussion).

5. Case Study Analysis Experts' perception

5.1 Introduction

In order to examine the quality of urban spaces, a multi-layered methods was developed that followed a number of steps (Figure 4-53, Page 162); the first step was to identify the transformed public spaces on the waterfront of the Eastern Harbour that were to be subjected to the assessment outlined in Chapter 4. The second step was to develop an analytical portrait of the spaces identified, which would result in a descriptive profile for each space; this was also explained in Chapter 4 (from section 4.5.2.1 to section 4.5.2.4).

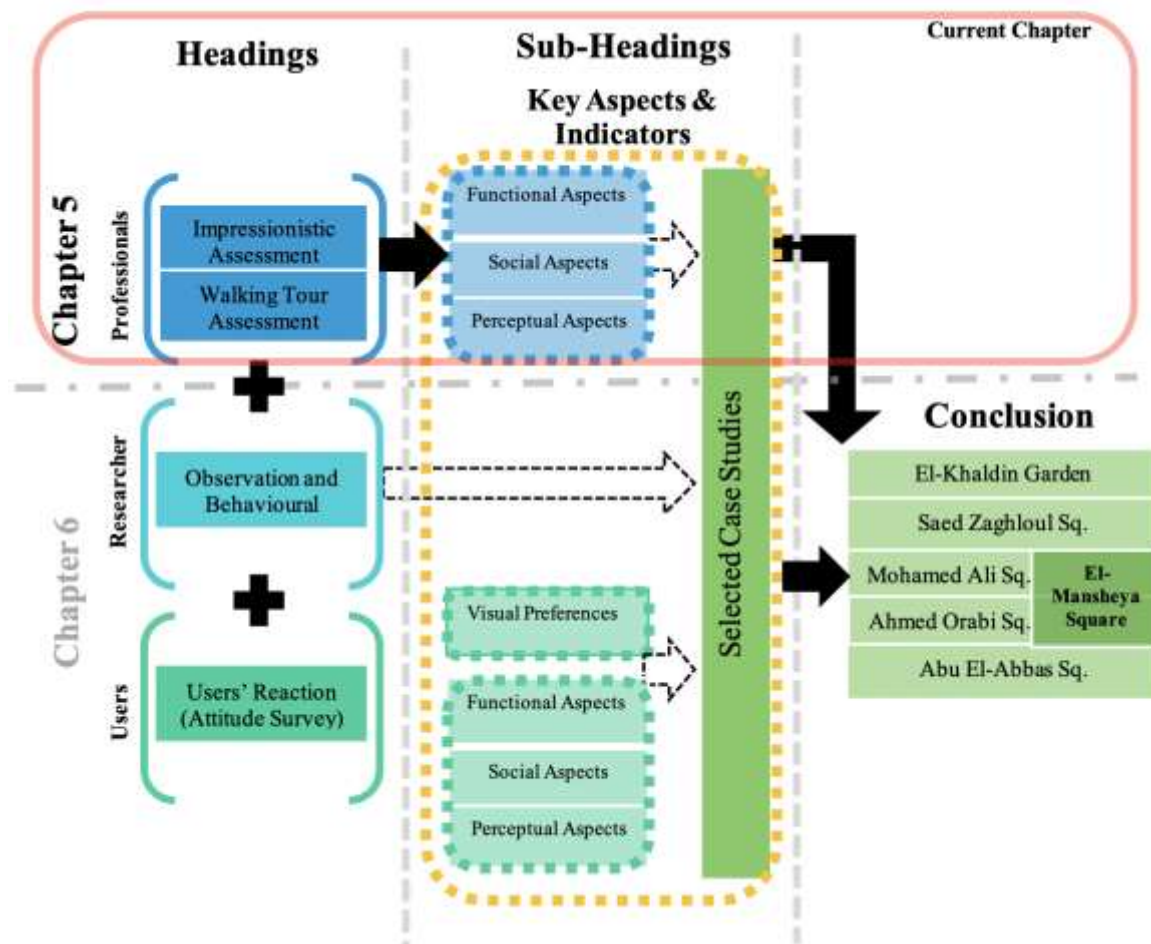


Figure 5-0 A diagram that illustrate the structure of the case studies analysis chapters, and its hierarchy emphasising the current chapter 5 within the red outline

The case studies analyses is divided into two chapters (Chapter 5 and Chapter 6) as shown in (Figure 5-0). Chapter 5 is the experts' perception of the selected public spaces and it is divided into two sections ordinal as the tools implementation mentioned in the previous chapter. Starting with the impressionistic assessment section reporting the selected public spaces under the key aspect namely; functional, social and perceptual and its indicators. The

second section analyzing the walking tour assessment of the five selected spaces under the same key aspects with its indicators.

5.2 Impressionistic Assessment (Urban Design Inventory)

The purpose of the assessment is to explain the current situation of the selected public spaces from professionals' perceptions of various criteria of the public spaces and waterfront. The assessment is divided into ten categories within the three aspects: Functional aspects include linkage and access, microclimate considerations and diversity and complexity, social aspects include permeability and movement, legibility and design features and function and use, Finally perceptual aspects include safety and security, visually pleasing and appropriateness, place identity, and character, and, place management and maintenance. The assessment took place between December 2016 and March 2017.

Table 5-1 shows the scoring average of over four amongst ten professionals (Architects/Planners); this included 65 questions. A colour code was added to this and other Tables to quickly spot the critical indicators that require action or that have potential. Thus, an indicator is evaluated as slightly inappropriate if it scores between $\geq 2 - < 2.5$; this is highlighted in yellow. An indicator measured as inappropriate will score below the minimum threshold (2) and is highlighted in red. Amongst the criteria overall, any square between scoring $\geq 2 - < 2.5$ will be highlighted in orange, and those less than 2 will be highlighted in green to highlight the weakest indicators. Therefore, the scaling of the average scores were as follows: ($0 - \leq 1$) Absolutely Inappropriate, ($> 1 - < 2$) Inappropriate, ($\geq 2 - < 2.5$) Slightly Inappropriate, ($\geq 2.5 - < 3.5$) Appropriate and ($\geq 3.5 - 4$) Absolutely Appropriate.

5.2.1 Functional Aspects

Table 5-1 presents the criteria: linkage and access, diversity and complexity, and, microclimatic considerations under the functional aspect.

Impressionistic Assessment Functional Aspects		Quality Score				
#	Questions	El-Khaldin	Saed Zaghloul	Mohamed Ali	Ahmed Orabi	Abu El-Abbas
Linkage and Access						
1	Is there car access leading to the space? (Drop off)	3	4	3.8	3.8	3.3
2	Is there pedestrian access leading to the space?	2.3	3	3	2.5	3
3	Is there parking available?	3	3.5	3.5	2.5	1.5
4	Is the space accessible by public transportation?	3.5	3.5	4	3.8	4
5	Is there a pedestrian network connecting the space to other locations?	2.3	2.5	2.5	2.3	3.3
6	Are the pavements and lanes suitable for users with special needs?	1.3	1.8	1.5	1.5	1.3
Total Av Score/Space		2.5	3	3	2.7	2.7
Diversity and Complexity						
7	Is there diversity in the usage of the surrounding buildings?	3.3	3.8	4	3.8	3.8
8	Is there complexity in the appearance of the surrounding buildings?	3	3.5	3	3.3	3
9	Is there complexity in the materials?	3.3	3	3.3	2.8	3.3
10	Is there complexity in the use of colours in the space?	3.3	3.3	3.3	2.3	2.8
11	Are there diverse uses evident in the space?	2.5	2.3	3.3	3.3	3
12	Is there diversity in users?	2.8	3	3.3	3.5	3
Total Av Score/Space		3	3.1	3.3	3.1	3.1
Microclimatic Considerations						
13	Does the space provide natural shade (trees)?	1.3	1.8	2.5	2.8	2.5
14	Does the space provide shade features?	1	0.8	1.8	1.8	0.5
15	Does the space provide elements of water to reduce the summer heat?	0.8	1.5	1.8	3	2.8
Total Av Score/Space		1	1.3	2	2.5	1.9

Table 5-1 Functional Aspects: The average score of 10 architects/planners. An Impressionistic assessment of the selected public spaces (source: the researcher)

5.2.1.1 Linkage and Access

This criterion includes a set of indicators that examine connection and accessibility to space through the following: car and pedestrian access, parking availability, whether it is reachable by public transportation, if it is connected to other locations, and the suitability of the pavements for users who have special needs. The total average scores for the linkage and access category is appropriate for the selected spaces, whereby Saed Zaghloul and Mohamed Ali Square have the highest score at 3. This is followed by Ahmed Orabi and Abu El-Abbas with a rating of 2.7 and finally, El-Khaldin Garden has the lowest evaluation at 2.5.

From Table 5-1 in the linkage and access section, the five public spaces were considered to have a reasonable degree of appropriateness. This included (Q1), which is related to drop off

and car accessibility, and (Q4), which is associated with accessibility via public transportation. This considers the location of the spaces and the main, surrounding street network that facilitates the connection with any mode of transportation, whether private or public. Similarly, the availability of parking (Q3) at El-Khaldin, Saed Zaghloul and El-Mansheya square are reasonably appropriate with scores between 2.5 and 3.5; in comparison, Abu El-Abbas was scored at 1.5 due to limited parking spaces around the space and the high density of the area, as shown in Figure 5-1.



Figure 5-1 Parking problem every Friday (source: the researcher, 2017)

Questions (Q2) and (Q5) related to pedestrian access and the network connection to other locations; firstly, Saed Zaghloul, Mohamed Ali and Abu El-Abbas were considered appropriate with a score of 3. This was followed by Ahmed Orabi, which received 2.5; however, for El-Khaldin Garden the average evaluation scores were slightly inappropriate at 2.3, which was due to the area's different levelling and the limited number of entrances to the space. Secondly, in considering the pedestrian network, three spaces were valued as appropriate. Abu El-Abbas received the highest score at 3.3, which was followed by the Saed Zaghloul and Mohamed Ali squares at 2.5 each. Meanwhile, the other two spaces were measured as slightly inappropriate at 2.3. This related to the reason mentioned previously as El-Khaldin space is elevated which means its users are not connected to the surrounding network. Moreover, Ahmed Orabi square is reasonably connected to other locations by its busyness plus the traffic flow; the transportation hub within the space interrupts the pedestrian network plus the lack of the pavements (in terms of quality and quantity) have an impact on the score.

Finally, in Q6 the five selected spaces were weighed as unsuitable in terms of their pavements and lanes, and were inappropriate for the users with special needs; for this reason, it needs critical action to address the quality, material and size of the sidewalk in general and to consider adding ramps especially in the spaces with different levels. However, the overall average for the five spaces is appropriate for the criteria.

5.2.1.2 Diversity and Complexity

This criterion includes the usage of the buildings and their appearances, the complexity of the materials and colours, the usage of the space, and the diversity in users. This is the only category in which all selected public spaces had significant high scores within the six indicators and received higher total average scores within the functional indicator. The ten experts agreed that the diversity and complexity category was appropriate for the selected spaces; this indicator was lead by Mohamed Ali Square which had a score of 3.3. This was followed by Saed Zaghloul, Ahmed Orabi and Abu El-Abbas with ratings of 3.1 each, whilst El-Khaldin Garden was rated the lowest with the score of 3.

From the diversity and complexity section in Table 5-1, the five public spaces were considered to have a reasonable degree of appropriateness, as examined by (Q7), which is related to diversity in the use of buildings around the space. Mohamed Ali Square was scored the highest at 4, reflecting the substantial variety of the building uses; some of the buildings are mix used as the ground floors are recreational and commercial, whilst some storeys are administrative and offices as well as residential. The square is surrounded with governmental buildings, including courthouse and consulates, places of worship, and commercial interests, such as hotels. The next highest scoring was recorded for Saed Zaghloul, Ahmed Orabi and Abu El-Abbas square with scores of 3.8 each; this was an appropriate measure for these four spaces due to the relative mixture of building use around the space, which were recorded as residential, administrative, recreational, commercial, educational and religious. The next question (Q8) related to the complexity of the appearance of surrounding buildings in general; Saed Zaghloul Square was valued as highly appropriate with a score of 3.5; this was due to its distinctive architectural styles, designs and different types of building. The four following squares were measured as reasonable, starting with Ahmed Orabi square at 3.3, whilst the others scored 3.

The condition or the maintenance of the buildings varied, but the experts determined that the spaces demonstrate variety in their architectural appearance including different styles,

colours and materials. This followed on to the next two questions (Q9 and Q10). The ninth query related to the complexity of materials used within the spaces and its surroundings. The four public spaces were evaluated as appropriate in using different materials, as the scores for El-Khaldin, Mohamed Ali and Abu El-Abbas were 3.3, whilst Saed Zaghloul square received 3, and Ahmed Orabi was given 2.8. The mixture between soft and hard materials in the flooring included green areas or pavements and paths, whilst the statues and their bases used marble or granite and metals, and the seating area incorporated wood and concrete. The tenth question was about complexity in the use of colours within the space; the four spaces were assessed as appropriate as El-Khaldin, Saed Zaghloul and Mohamed Ali spaces were scored at 3.3 due to the colour themes used to give the spaces harmony and to distinguish their appearance. This was followed by Abu El-Abbas; this space received 2.8 due to the complex colours between red and cream, which pleasantly complemented the space and its surroundings. Finally, Ahmed Orabi valued as slightly inappropriate at 2.3 due to the presence of some buildings with different colours and materials that stand out from the colour theme or the atmosphere of the space.

The next question (Q11) asked whether the diversity of usage in the four spaces was considered appropriate. El-Mansheya Square received the highest score at 3.3 due to the multipurpose reasons for visiting the square, which incorporated social, commercial, recreational and administrative as the square was occupied by waiting users, groups gathering for a meeting, some chatting, others relaxing or eating at street vendors in the space. This was followed by Abu El-Abbas that received a score of 3 as it was used more as a recreational area with people using the local funfairs, others chatting in the corner or just passing with ice-creams, or visiting for religious purposes. El-Khaldin received 2.5; this is a space used by groups and couples for meeting and talking. It is used as a playing area for children, as a social space or for recreational purposes. This sometimes included religious purposes on different, specific occasions; for example, in Ramadan the area is used for prayers. Finally, Saed Zaghloul square surprisingly received 2.3, which is classed as slightly inappropriate. The square is used for many purposes, such as a meeting and waiting point, tourism and sightseeing, families' picnics and a social space.

The last question in this category (Q12) considered the diversity of users; Ahmed Orabi was valued as highly appropriate with a score of 3.5. This was followed by Mohamed Ali that was valued as appropriate at 3.3, whilst the remainder, Saed Zaghloul and Abu El-Abbas squares, were scored as 3, and El-Khaldin Garden received 2.8. The diversity considered a

mixture of genders, the wide range of users' age groups (from young to adults and elders) and their social status as singles, couples and families.

5.2.1.3 Microclimatic Considerations

This set of criteria includes the provision of shade (natural and man made) to protect users from the climate or to enhance the situation in the space, and the water element for climate considerations. Within the functional qualities, this set was the only category in which the four public spaces had significantly low scores in total. Moreover, the ten experts agreed that the microclimate consideration category was inappropriate for the selected spaces. The lowest score was for El-Khaldin Garden with a total of 1; Saed Zaghloul followed this with a score of 1.3 and Abu El-Abbas at 1.9. Surprisingly, Mohamed Ali Square was assessed as slightly inappropriate with a score of 2, whilst Ahmed Orabi square was the only space considered appropriate with a score of 2.5.

Table 5-1 shows that the five public spaces have issues in the climate considerations, especially in providing shading features (Q14). Thus, the selected squares were evaluated as inappropriate whilst El-Mansheya (Mohamed Ali and Ahmed Orabi) was scored at 1.8/4 as the location of the shades was not near the sitting areas (shown in Figure 5-2).



Figure 5-2 Mohamed Ali Square's users sitting under the statue for the shade (source: the researcher, 2017)

This was followed by El-khaldin, which scored 1, then Saed Zaghloul and Abu El-Abbas were deemed entirely inappropriate with scores of 0.8 and 0.5/4 due to the absence of any shade feature. For natural shade (Q13), El-Mansheya and Abu El-Abbas were scored as

appropriate (between 2.8 and 2.5); this was due to the shrubs and vegetation. Meanwhile, Saed Zaghloul scored 1.8, which was also inappropriate; this was due the to the use of unbranched trees (palms) whilst El-Khaldin represented the lowest score at 1.3. Although the spaces were located on the waterfront, the water element (Q15) was missing in El-Khaldin garden which meant it was scored as highly inappropriate 0.8/4. The public space does not need water element for weather conditions; this was followed by Saed Zaghloul at 1.5, and Mohamed Ali at 1.8; these were assessed as inappropriate because they were closed most of the time and only accessible at both edges of the space with no seating areas available, as shown in Figure 5-3. Next, Ahmed Orabi and Abu El-Abbas were evaluated as appropriate with a score of 3 and 2.8. Therefore, at 1, 1.3 and 1.9/4 respectively, El-Khaldin, Saed Zaghloul and Abu El-Abbas failed in their total averages under the climate consideration category.



Figure 5-3 Mohamed Ali Square's fountain with no seating area around (source: the researcher, 2017)

5.2.2 Social Aspects

Table 5-2 presents the following criteria under the social aspects: permeability and movement, outline and design features, and function and use.

Impressionistic Assessment Social Aspects		Quality Score				
#	Questions	El-Khalidin	Saed Zaghloul	Mohamed Ali	Ahmed Orabi	Abu El-Abbas
Permeability and Movement						
16	Are the users allowed to enter from any side (multiple pathways)?	1.5	2.5	3.5	3	0.8
17	Are the axes providing view directions or focal points?	2.8	2.8	2.3	3.5	3.3
18	Is the width of the pedestrian lanes suitable for the users?	2.8	2.5	2	2.8	2
19	Is there any connectivity with other public spaces?	2.3	2.8	2.3	2.3	3.5
20	Is the space suitable for all users of all ages?	2.8	3	3.3	3.5	3.8
21	Is the space suitable for users with special needs?	1.5	2	1.8	2	1.8
Total Av Score/Space		2.3	2.6	2.5	2.8	2.5
Outline and Design Features						
22	Is the place appearance unified?	3.3	3.3	2.5	2.3	2
23	Does the space have a spatial character and sense of identity?	3.3	3.5	3	3.3	3.5
24	Is there a proper proportion between the masses and the space?	3.8	3.3	2.8	3.3	3.5
25	Is there richness and variety in the pattern elements?	2.3	3	3	2	1.5
26	Does the space have meaning value?	2.5	4	4	3.8	4
27	Does the space have a sense of enclosure?	3.5	3	2.8	2.5	3.3
28	Is the space in appropriate proportion to the human scale and comfortable for users?	3.5	3	3	2.8	3.5
Total Av Score/Space		3.1	3.3	3	2.8	3
Function and Use						
29	Does the space act as a destination for users?	2.8	3.5	4	4	3.8
30	Does the space act as a transaction area for users?	2.3	2.8	4	4	2
31	Is the space family friendly?	3	3.5	3.5	3.8	3.3
32	Is the space ethically friendly?	2.8	3	3	3.5	3.3
33	Is the space used to celebrate social/political/religious events?	3	2.5	2.8	2.3	3.8
34	Is the space considered a tourism destination?	2.5	2.8	3.3	3	4
35	Is there accommodation for different activities?	2.5	2.5	2.3	2.8	3
36	Is there comfortable seating?	2	2.3	2.5	2.5	0.5
37	Is there a wide variety of seating choices from lawn space to benches to suit individual or group activities?	2	1.8	1.8	2.5	0.8
38	Can people be found eating food/drinking from local vendors on the lawn, reading on benches, or chatting with friends near the fountains?	3	2.3	3	3	3.3
39	Is there access to cafes?	1.8	3	2.8	2.5	3.5
40	Is there access to restaurants?	1.8	3.3	2.8	2.5	3.5
41	Is there access to a public toilet?	0.8	2.5	2	0.8	1
42	Is there a street vendor?	2	2.8	0.3	0.8	0.7
Total Av Score/Space		2.3	2.7	2.7	2.7	2.6

Table 5-2 Social aspects average score of 10 architects/planners: Impressionistic Assessment of the selected public spaces (source: the researcher)

5.2.2.1 Permeability and Movement

This first criterion includes a set of indicators that examine: the entrance to the space and the variety of pathways, the axes to the focal point, the suitability of pedestrian lanes in terms of width, connectivity to other public spaces, and the suitability of the space for different age groups and users who seek special needs. The total average scores for the permeability and movement category are appropriate for the selected spaces, whereby Ahmed Orabi is weighted at 2.8, Saed Zaghloul at 2.6, Mohamed Ali and Abu El-Abbas at 2.5, and finally El-Khaldin Garden with the lowest evaluation at 2.3, which was measured as slightly inappropriate.

Table 5-2 illustrates the findings from the expert assessments, and responses to Q16 show the potential to enter the space from various locations. The table highlights that Mohamed Ali is highly appropriate with the score of 3.5; this is due to its paths and entry points that allow people to be within the space. This is followed by Ahmed Orabi with the score of 3 then Saed Zaghloul at 2.5; both spaces are valued as appropriate due to their variety of paths and different entrances. However, not users can enter the space from the selected sides. Moreover, El-Khaldin and Abu El-Abbas have issues related to the opportunity to enter the spaces from any side; these spaces were valued as inappropriate. El-Khaldin scored 1.5 because of the fence that surrounds all sides, whereby users only can enter the space from one entrance on the tram side (see Figure 5-4); furthermore, Abu El-Abbas scores 0.8/4 for not allowing people to enter or use the green area within the space (Figure 5-5).



Figure 5-4 El-Khaldin garden closed entrances (source: the researcher, 2017)



Figure 5-5 Abu El-Abbas square: No users are allowed to enter the green area (source: the researcher, 2017)

In evaluating the axes providing a view direction or focal point in the spaces (Q17), Ahmed Orabi Square received a ‘highly appropriate’ score of 3.5 due the axial path of the space that provided view directions and access to various focal points starting with the sea view, the unknown soldier monument, the fountains and the statues of Mohamed Ali. Meanwhile Mohamed Ali Square’s axial path located amongst the statues was valued the as lowest at 2.3, which is classed as slightly inappropriate. The remainder of the spaces were measured as appropriate. This included Abu El-Abbas square, which was scored at 3.3 due to the direction of the axes which lead between the mosque, waterfront and the view of the Citadel. El-Khaldin and Saed Zaghloul squares scored 2.8 as the axes of these spaces lead to varying focal points from surroundings buildings more than a focal point within the space.

Question 18 evaluates the suitability of the pedestrian lanes’ width for users; three spaces were measured as appropriate; El-Khaldin, and Ahmed Orabi spaces scored 2.8, followed by Saed Zaghloul at 2.5. This means that the widths of the pedestrian lanes within the space were suitable. However, Mohamed Ali (shown in Figure 5-6) and Abu El-Abbas were valued as slightly inappropriate with a score of 2; this was due to the large numbers visiting the spaces at certain times.



Figure 5-6 Mohamed Ali Square: pavement widths. A) the outside lane B) the internal lanes (source: the researcher, 2017)

Assessing the connectivity with other public spaces (in Q19) reveals that Abu El-Abbas was highly appropriate with a score of 3.5. This is as a result of the connections and links to the mosques on the south side of the spaces and to the waterfront from the north. These are connected in a walkable distance to the remaining selected public spaces and the Bibliotheca Alexandrina from the east side and the Citadel space from the west. In comparison, Saed Zaghloul square was valued as appropriate with a score of 2.8; this was due to the same connection to the water, as previously mentioned, and to other commercial and recreational areas, such as the commercial city chamber. Moreover, it is connected from the south side to the train station's public square. Finally, El-Khaldin and El-Mansheya were valued as slightly inappropriate with a score of 2.3. El-Khaldin, due its' higher ground level, is not directly connected to the waterfront space but is visually linked to other waterfront public squares and the El-Qaed Ibrahim Mosque. Although Ahmed Orabi scored 2.3, it connects with Mohamed Ali square on the southside and the waterfront from the northside. This leads to other selected public spaces; from the east is Saed Zaghloul, El-Khaldin and the Bibliotheca Alexandrina, and from the west is Abu El-Abbas Square and the Citadel. However, Mohamed Ali square is only directly connected to Ahmed Orabi.

When considering the suitability of the movement for a mixture of users, in terms of gender and age groups (Q20), two spaces were considered highly appropriate, namely Abu El-Abbas (at 3.8) and Ahmed Orabi (at 3.5). Moreover, the remainder were weighted as

appropriate, including Mohamed Ali with a score of 3.3, Saed Zaghloul with a score of 3, and finally El-Khaldin with a score of 2.8. Most the spaces are easy in terms of permeability, and movement with the exception of El-Khaldin Garden, which represents a challenge for some older people due to the steps, and explains its lower score.

When it considering the suitability for users with special needs (Q21) the five selected spaces failed to measure as appropriate. Thus, Saed Zaghloul and Ahmed Orabi scored 2 valued, and were deemed as slightly inappropriate; this means they could be more suitable with a few simple changes. The remaining spaces were valued as unsuitable, including Mohamed Ali (Figure 5-7) and Abu El-Abbas, with a score of 1.8; these need more extensive changes and significant maintenance. Finally, El-Khaldin scored 1.5, which was affected by the elevated space with seven steps and no ramps; this makes the space impossible for any wheelchair users to access.



Figure 5-7 Mohamed Ali Square's low-quality ramp to access the space (source: the researcher, 2017)

5.2.2.2 Outline and Design Features

The second criteria include a set of indicators that examine the harmonious appearance of the space, the sense of identity, the balance of masses and space, the richness of pattern elements, the meaning value of the space, the sense of enclosure and the human scale that comforts the users. The total average scores for the outline and design features category is appropriate for the selected spaces. The highest score was given to Saed Zaghloul at 3.3, followed by El-Khaldin with a score of 3.1, then Mohamed Ali Square and Abu El-Abbas with a score of 3, and finally Ahmed Orabi had the lowest at 2.8.

Table 5-2 shows that the three spaces were valued as appropriate when (Q22) examining the unity and harmony of appearance. The highest score was given to El-Khaldin and Saed Zaghloul at 3.3, followed by Mohamed Ali Square at 2.5; it is clear that these spaces complement the buildings. However, both Ahmed Orabi (2.3) and Abu El-Abbas (2.0) were

valued as slightly inappropriate due to illegal changes to the buildings around the spaces that interrupt the harmony.

The five selected spaces were highly rated in terms of the sense of identity and spatial character (Q23); this is due to the relationship of the spaces to the cosmopolitan era and to Alexandria's history. First were Saed Zaghloul and Abu El-Abbas; these were considered entirely applicable with scores of 3.5. They were followed by the remaining spaces that were measured as appropriate, namely El-Khaldin and Ahmed Orabi with a score of 3.3 each, and finally Mohamed Ali with a score of 3.

Three questions are interlinked, (namely Q24, 27 and 28), although Q24 evaluates the balance between the masses and space. Surprisingly, with scores of 3.8 and 3.5 respectively, El-Khaldin and Abu El-Abbas were evaluated as highly appropriate in terms of the proportion between the masses. These were followed by Saed Zaghloul and Ahmed Orabi squares with scores of 3.3 each, and finally Mohamed Ali Square was scored at 2.8. In comparison, Q27 examined the sense of enclosure and the findings indicate that El-Khaldin is very appropriate with a score of 3.5, while the other spaces were considered appropriate. Abu El-Abbas square had the highest score at 3.3, whilst Saed Zaghloul received 3, and finally, El-Mansheya had the lowest score. Meanwhile, Mohamed Ali square was scored at 2.8 and Ahmed Orabi at 2.5. Moreover, Q28 related to the appropriate proportion of space to human scale, and the comfort of the users. The findings for this question indicate that two spaces, El-Khaldin and Abu El-Abbas, are highly appropriate with scores of 3.5. Saed Zaghloul and Mohamed Ali with scores of 3 each followed, whilst Ahmed Orabi received 2.8; thus, all three spaces were measured as appropriate.

To summarise responses to three connected questions (Q24, 27 and 28), El-Khaldin and Abu El-Abbas are most appropriate due to their defined space that provides users with familiarity and intimacy. However, the open sea view provides openness and wideness. The three remaining spaces were valued as appropriate, although the ratio varies to provide the users with more openness in Saed Zaghloul square with a monumental enclosure and a directional enclosed space towards the sea view. While El-Mansheya, which is composed of Ahmed Orabi and Mohamed Ali, offers familiarity, urban enclosure and direction, which implies that the space is well defined, as a perfect T shape.

Next, Q25 assesses the richness and variety of pattern elements; however, only two spaces, Saed Zaghloul and Mohamed Ali squares, were measured as appropriate with scores of 3 each. They were followed by two spaces that were valued as slightly inappropriate. These

started with El-Khaldin at 2.3 and Ahmed Orabi at 2; these spaces have a limited variety of elements, and are not of good quality. Thus, they require more elements to satisfy users' needs. Finally, Abu El-Abbas was evaluated as inappropriate with the lowest score of 1.5; this was due to the lack of elements and the poor quality of the limited existing ones.

It appears that the value meaning (in Q26) is well presented in the four spaces in that Saed Zaghloul, Mohamed Ali and Abu El-Abbas squares were scored 4/4. This is due to their existence, historical life span, functions, events, and buildings whose values carry meaning for the space. This is followed by Ahmed Orabi square with a score of 3.8; the lower value is due to the value changes throughout its history. Finally, El-Khaldin Garden received 2.5, which was the lowest score; although it was measured as having an appropriate meaning value due to the buildings around it and the space, it needs more maintenance, care and changes to evaluate the space value to users.

5.2.2.3 Function and Use

The last category function and use includes a set of indicators that examine the space as a destination or transaction area for users and families. It considers whether it is: ethically sociable, usable for various celebrations and events, a tourism attraction, a host to different activities, able to provide comfortable seating that suits individual and groups activities, enable user experiences of optional and social activities, accessible to cafes, restaurants and public toilets, and enables the presence of street vendors. The total average scores for the function and use category were appropriate for three selected spaces; these were lead by Saed Zaghloul and El-Mansheya Square with scores of 2.7 each, followed by Abu El-Abbas with a score of 2.6. El-Khaldin Garden was the lowest, and valued as slightly inappropriate in its function and use with a score of 2.3. These scores are shown in Table 5-2.

Overall, the spaces were evaluated as above average and appropriate in half of the indicators; a few were scored as entirely appropriate, including Q29 that evaluates the function of the space for users as a destination point. It reveals that four spaces are highly used as a destination space. Thus, El-Mansheya Square with a score of 4 has various purposes for its users, next Abu El-Abbas was scored at 3.8 due to its religious and recreational reasons, then Saed Zaghloul space scored 3.5 as a destination point to people meet for social purposes. Finally, El-Khaldin Garden was measured as an appropriate use with a score of 2.8 because it is occasionally used as a destination in the month of Ramadan for religious purposes, and during the year as a social meeting point for users.

Examining the space as a transaction area (in Q30) highlights that El-Mansheya Square is the only space that is highly usable with a complete score of 4; this is due to its location in the city centre as it accommodates various street vendors, shop frontages and cafés. Saed zaghloul space was considered suitable as the transaction area for users was scored at 2.8. This is due to the same reasons as previously mentioned; however the space is more condensed and limited than El-Mansheya. Finally, two spaces were valued as slightly inappropriate; El-Khaldin with a score of 2.3 and Abu El-Abbas at 2/4. This was due to their limitations to street vendors and local shops.

The next two questions (Q31 and Q32) assessed the spaces' sociability in terms of their family and ethical friendliness; thus, the selected spaces measured as appropriate in general. The first question (Q31) shows that El-Mansheya Square is very friendly for family use, whilst as Ahmed Orabi received 3.8, and Mohamed Ali and Saed Zaghloul received 3.5 each. These are followed by Abu El-Abbas and El-Khaldin, which are considered appropriate with respective scores of 3.3 and 3. The five case studies appeared family friendly, which was supported by different reasons, such as security, green areas, safety from traffic, or activities within and around the space. The next question (Q32) related to whether the space is ethically friendly and found that the selected spaces are appropriately used. The space with the highest score was Ahmed Orabi, which was found to be highly appropriate with a score of 3.5; this was followed by Abu El-Abbas at 3.3, then Saed zaghloul and Mohamed Ali squares with scores of 3 each. Finally, El-Khaldin Garden had a score of 2.8 as the urban space itself is ethically used but the neglected garage underneath tends to be used by drug addicted people and gangsters that affect the presence of users at night.

The next question (Q33) related to the usability of the space for celebrations of social, political or religious events. Abu El-Abbas square was scored at 3.8 and valued as highly usable, particularly for Islamic religious events, such as Ramadan, the New Year, feasts, the birth of the prophet and other festivals through the year. Three spaces were valued as usable namely El-Khaldin with a score of 3 that indicates its appropriateness of use for religious events, such as Ramadan Tarawih prayers and funeral ceremonies. Moreover, it was used at the Egyptian Revolution of January and May 2011. Next, Mohamed Ali was scored at 2.8 and was deemed occasionally usable for social events, such as celebrating the success of a football team or political parties; indeed, it was used in the 2011 Revolution for marches and demonstrations. Furthermore, Saed Zaghloul square was scored at 2.5 as the space is used for celebrations by people who see it as a social place to visit on feast and national holidays.

Finally, Ahmed Orabi scored as slightly inappropriate with a score of 2.3; this is due to the low usage for celebrations, feasts and national holidays.

The next question (Q34) assesses the space as a tourism destination, and experts agreed that Abu El-Abbas is the best space as a local and international tourism destination, with a perfect score of 4. This was followed by the remaining spaces that are valued as appropriate; El-Mansheya Square while Mohamed Ali received a score of 3.3 each, and Ahmed Orabi was evaluated at 3. This was due to their location in the heart of the city centre and convenient for local tourism; it has the potential to be an international tourist attraction due to its history and architectural spirit. Next was Saed Zaghloul, due to the location of the Cecil Hotel that is recognised by international users; it is a recognised local tourist attraction for people visiting Alexandria. Finally, El-Khaldin with a score of 2.5 has the potential to be a tourist destination due to its views.

Question 35 evaluates the space for its host for different activities; it reveals that four spaces were valued as suitable accommodation starting with Abu El-Abbas with a score of 3, followed by Ahmed Orabi at 2.8, then El-Khaldin and Saed Zaghloul with a score of 2.5 each. All four spaces are used for social, optional and necessary activities throughout the year and sometimes for recreation and celebrating holidays. Users can be found gathering, waiting, chatting and relaxing within the space, which is used by individual and groups. Moreover, Mohamed Ali is valued as marginally inappropriate with a score of 2.3; this is due to its limited optional and social activities. However, a considerable number visit the space for necessary purposes.

The following evaluation (Q36) concerns of the comfort of the seating in the spaces; with a score of 2.5, it appears that El-Mansheya offers the only proper seating compared to the rest of the spaces, yet it needs some care and maintenance. Two spaces were evaluated as marginally inappropriate namely: Saed Zaghloul at 2.3 in which the seats are not that comfortable over a long period as they lack backrests and are limited in number, and the garden benches in El-Khaldin at 2, scored thus due to poor quality and condition, which meant they required substantial maintenance. Finally, Abu El-Abbas was valued as extremely inappropriate with a score of 0.5; this was due to the inferior quality and condition of the seats around the square that could not be used, as Figure 5-8 illustrates.



Figure 5-8 Abu El-Abbas uncomfortable seats (source: the researcher, 2017)

The next question (Q37) relates to the variety of seating choices that suit individuals and groups. Table 5-2 shows that Ahmed Orabi is the only space that is valued as appropriate with a score of 2.5. That is followed by El-Khaldin with a score of 2, which is slightly inappropriate. Surprisingly, at 1.8, Saed Zaghloul was valued as inappropriate for the seating choices due to the lack of design (Figure 5-9) to suit group activities; this was the same for Mohamed Ali square (Figure 5-10). Meanwhile, the score Abu El-Abbas was 0.8 which indicates that it is highly unsuitable for users due to the need for maintenance of the urban furniture.



Figure 5-9 Saed Zaghloul seating choices (source: the researcher, 2017)



Figure 5-10 El-Mansheya Square's seating choices oblige people to sit in one direction (source: the researcher, 2017)

Assessing the activities of the users (Q38) reveals four spaces which were valued as appropriate with reasonable scores. First, was Abu El-Abbas at 3.3; this was followed by El-Mansheya and El-Khaldin at 3 each. Most users' activities in the spaces are eating, drinking tea, and chatting with friends; this took place regardless of the quality of the physical environment, and thus indicates they are necessary activities. Unexpectedly, Saed Zaghloul square was valued as slightly inappropriate at 2.3, as it appeared that people use it more for optional and social activities.

Three questions (Q39, Q40 and Q41) assessed the accessibility of the space to cafes, restaurants and public toilets. Two questions generated the same results (Q39) and (Q40), in placing Abu El-Abbas first with a score of 3.5, deemed extremely accessible. This is due to the cafés, restaurants, and local shops around the square, including well-known local ice-cream and local seafood restaurants and cafe shops. These are accessible on the waterfront within a restaurant and café area that includes Grand café, Teka, and the Fish Market. The next most accessible space is Saed Zaghloul with scores of 3 and 3.3; the space is accessible to Patisserie Delice, as shown in Figure 5-11, that has been located within the space since 1922. Furthermore, there is Cecil's restaurant and café in the hotel and on the corniche and many others near the area, such as as Imperial café, the Brazilian coffee store, Trianon and fast food restaurants. In comparison, El-Mansheya was valued as appropriate to access, whilst Mohamed Ali scored 2.8 due to its accessibility to small local restaurants around the space and some local cafeterias and take away shops. Furthermore, Ahmed Orabi received a score of 2.5, El-Khaldin garden is last scored at 1.8. This is due to an inappropriate direct connection as a result of its visual accessibility to the restaurants and cafes on the corniche road, but its lack of physical access due to its separation from the space at ground level.



Figure 5-11 Patisserie Delice around Saed Zaghloul Square (source: the researcher, 2017)

As for the public toilets (Q41), Saed Zaghloul was scored highest at 2.5; this is due to the location of public toilets at the tram station near the space. It is followed by Mohamed Ali with a score of 2 that has slightly inaccessible public toilets due to its location on the east

end of the square. Finally, the remaining spaces are measured as distant from public toilets, starting with Abu El-Abbas with a score of 1. Meanwhile, Ahmed Orabi is accessible to the toilets located in Mohamed Ali square, yet El-Khaldin received the lowest score at 0.8.

The final question in the set (Q42) related to the hyper-growth of street vendors in the spaces where the team noted that a high score reflects more controlled spaces from the informal street vendors. First was Mohamed Ali (Figure 5-12) with the most uncontrolled hyper-growth vendors scored at 0.3/4. This was followed by Abu El-Abbas at 0.7 (Figure 5-13) and Ahmed Orabi at 0.8. This reflects that Saed Zaghloul is suitably controlled due its score 2.8/4.



Figure 5-12 Mohamed Ali Square's street vendors (source: the researcher, 2017)



Figure 5-13 Abu El-Abbas Square's street vendors (source: the researcher, 2017)

5.2.3 Perceptual Aspects

Table 5-3 presents the following categories: safety and security, visually pleasing and appropriate, place management and maintenance, and place identity and character.

Impressionistic Assessment Perceptual Aspects		Quality Score				
#	Questions	El-Khaldin	Saed Zaghloul	Mohamed Ali	Ahmed Orabi	Abu El-Abbas
Safety and Security						
43	Is the parking area safe for users? (Gang, thieves...)	3.3	3.8	3.3	2.5	1.8
44	Are there pedestrian crossings around/near the space?	2.8	3.3	2	2.5	1.5
45	Does the design provide safety (crime) during the day? Visibility?	2.8	2.8	2.8	2.3	2
46	Does the design provide safety (crime) during the night? Lighting/visibility	1.5	2.8	2.5	2.5	1
47	Does the design provide safety for elderly users and those with special needs?	2	2.8	2.5	2.8	1.8
48	Is the space safe to be used by women/girls during day and night?	2.5	3.8	3.5	3.6	2.5
Total Av Score/Space		2.5	3.2	2.8	2.7	1.8
Visual Pleasing and Appropriateness						
49	Is the design layout attractive?	2	2.8	2.5	3	2.8
50	Is the urban furniture attractive?	1	1.5	1.3	2	0.8
51	Are the lighting features attractive?	1.3	1.5	1	1.8	1.3
52	Is the paving pattern attractive?	2	1.5	1.8	2.3	1.5
53	Are the surrounding buildings attractive?	2.8	3.3	3.5	2	2.5
54	Does the design make use of natural view? If any	3.3	3.3	2.3	2	2.3
55	Are there public art displays in the space?	1.8	3.5	2.8	2.8	1.5
56	Are the seat arranged for varying views? (Trees, Sea, Fountain, etc.)	2.3	2.8	2.3	2.5	0.5
Total Av Score/Space		2	2.5	2.2	2.3	1.6
Place Management and Maintenance						
57	Is the soft landscape well maintained?	1.5	1.8	1.3	1.3	2
58	Is the hard landscape well maintained?	1.3	1.5	1.8	2	0.5
59	Does the place appear clean?	2	2.5	1.8	1.8	1.3
60	Are the light features well maintained and replaced once needed?	1.3	2.3	1.8	1.8	1
61	Is the urban furniture well maintained?	1.3	1.8	2	2	0.3
62	Are the waste disposal bins placed near the vendors and seating area?	1.3	1.8	1	1.3	0.3
Total Av Score/Space		1.4	1.9	1.6	1.7	0.9
Place Identity and Character						
63	Is the space part of a historical area?	4	4	4	4	3.8
64	Does the space have architecture character?	3.5	4	3.5	3.5	2.8
65	Does the space appear elegant?	1.8	3	2.3	2.5	1.3
Total Av Score/Space		3.1	3.7	3.3	3.3	2.6

Table 5-3 Perceptual Aspects average score of 10 architects/planners Impressionistic Assessment of the selected public spaces (source: the researcher)

5.2.3.1 Safety and Security

This first criterion includes a set of indicators that examine the safety and security for users of the space in various aspects including the parking area, safety from traffic, visibility

during day and night and protection for elderly, users with special needs and women. Table 5-3 reveals that the total average scores for the safety and security category is appropriate in four selected spaces. The highest score was for Saed Zaghloul with at 3.2, followed by El-Mansheya square and Mohamed Ali at 2.8, Ahmed Orabi at 2.7, and El-Khaldin at 2.5. Finally, Abu El-Abbas is the lowest evaluation with a score of 1.8 that is considered to provide inappropriate safety and security for users.

The first two evaluations concern the safety of users around the space; Q43 evaluates the safety of the parking area and reveals that Saed Zaghloul received the highest rank in terms of safety at 3.8/4. The next three spaces measured as safe were El-Khaldin and Mohamed Ali weighted at 3.3 for the availability of a specific area to park, then Ahmed Orabi at 2.5 for its street parking. Abu El-Abbas is ranked the lowest with a score of 1.8 indicating its inappropriateness in terms of safety in the parking area, which is limited and controlled by unauthorised local individuals. The next question (Q44) concerns crossing streets around the space safely; it reveals that three spaces are measured as appropriate. Similar to the previous question, it starts with Saed Zaghloul at 3.3, followed by El-Khaldin at 2.8, then Ahmed Orabi with a score of 2.5. Mohamed Ali was valued as marginally inappropriate according to the difficulty experienced crossing the street; this score was influenced by the lack of light coring signs for high traffic. Finally, with a score of 1.5 Abu El-Abbas is described as inappropriate in terms of its limited pedestrian crossings, the presence of trams within the street with car traffic, and no sign of crossing pedestrians or lights, as shown in Figure 5-14.



Figure 5-14 Abu El-Abbas's pedestrian unsafe crossing against cars and tram (source: the researcher, 2017)

Next, Q45 and Q46 evaluate the visibility of spaces; this provides safety throughout the day and night. The assessment reveals that safety during the day (Q45) is equally appropriate in El-Khaldin, Saed Zaghloul and Mohamed Ali square with a score of 2.8 each; this is due to the clear visibility that deters crimes during daylight. However, the remaining spaces were

measured as slightly inappropriate, as Ahmed Orabi scored 2.3 and Abu El-Abbas scored 2. These are the result of the existence of specific places within the spaces that might be blocked from visibility, due to features such as big bushes, trees or fences. At night, the responses to Q46 indicated that Saed Zaghoul and El-Mansheya are appropriate with scores of 2.8 and 2.5 respectively. This is due to their designs that help to keep the space visible and the lighting features that influence this. In contrast, El-Khaldin is determined inappropriate at 1.5 due to the lack of lighting features (Figure 5-15). This prevents the users from visiting the space, especially females without a companion. Moreover, Abu El-Abbas received 1 due to the lack of visibility and sometimes the dim lights that are blocked by trees in the space.



Figure 5-15 El-Khaldin Garden showing night-time visibility (source: the researcher, 2017)

The last two questions (Q47 and Q48) concern the safety of the spaces used by the elderly, those who need special help, and females. With a score of 2.8, it appears (in Q47) that Saed Zaghoul and Ahmed Orabi are safe for elderly and users with special needs. The same is true of Mohamed Ali that is valued at 2.5. Meanwhile, El-Khaldin is somewhat unsafe in terms of health safety; this is due to the conditions of the steps, where without support, these would be unsafe. Abu El-Abbas received a lower score at 1.8; among the spaces it is inappropriate to use safely due to the traffic and the hassle of the surrounding space between walking users, cars and trams. As for the safety of women using the space (Q48), it reveals that three spaces are incredibly safe for female including Saed Zaghoul (scored at 3.8), El-Mansheya as Ahmed Orabi space (rated 3.6), and Mohamed Ali (at 3.5) for its visibility, lighting and busyness during the day and night. While the remaining space is scored as appropriate at 2.5; as mentioned before, it is safe during the daylight and at night in the company of a group, family or a male.

5.2.3.2 Visual Pleasing and Appropriateness

The second criteria includes a set of indicators that examine the attractiveness of each; these indicators are the design layout, urban furniture, lighting features, paving pattern and

surrounding buildings. This also includes the use of a natural view, a public art display and the seating arrangement for varying views. The total average scores in Table 5-3 for the visually pleasing and appropriateness category is only appropriate for Saed Zaghoul, which had a score of 2.5. Three selected spaces are marginally inappropriate, including Ahmed Orabi at 2.3, followed by Mohamed Ali Square at 2.2, then El-Khaldin at 2. Finally, Abu El-Abbas has the lowest evaluation with a score of 1.6 and was valued as inappropriate.

Question 49 evaluated the attractiveness of the layout of the space; it appears that four spaces were measured as attractive. Ahmed Orabi had the highest score at 3, followed by Saed Zaghoul and Abu-El-Abbas with a grade of 2.8 each, then Mohamed Ali was evaluated at 2.5. Finally, El-Khaldin was measured as somewhat unattractive receiving a score of 2. It needs full maintenance and a reconsideration of its care in the design arrangements.

The attractiveness of the urban furniture is evaluated in Q50; this found that the selected spaces measured between slightly and extremely unattractive. Ahmed Orabi scored 2, which was the highest score in this indicator; for three spaces the attractiveness of the urban furniture was measured as inappropriate. These spaces were Saed Zaghoul, Mohamed Ali and El-Khaldin with scores of 1.5, 1.3 and 1 respectively. For these spaces, the experts deemed the design of the furniture unattractive or creative incorporating fountains, steps, flower boxes, benches, fences and bus stops shades. The surrounding urban furniture in Abu El-Abbas is utterly unattractive due to its bad condition and poor quality of both furniture and design.

Moreover, all the spaces failed in the attractiveness of the lighting features (Q51). Ahmed Orabi had the highest score at 1.8 followed by Saed Zaghoul at 1.5 then Abu El-Abbas and El-Khaldin both at 1.3, whilst the lowest score of 1/4 was given to Mohamed Ali Square due to its lighting feature design that does not consider the character of the space.

For the pavement (Q52), it reveals that two spaces are marginally unattractive, Ahmed Orabi with a score of 2.3 then El-Khaldin at 2. This is due to their conditions, which needs maintenance. In considering the remaining spaces, the paving pattern was considered unattractive, starting with Mohamed Ali (Figure 5-16) at 1.8, then Abu El-Abbas and Saed Zaghoul at 1.5 each. This is due to the severe condition of the pavements and their undesigned patterns.



Figure 5-16 Mohamed Ali Square's paving pattern (source: the researcher, 2017)

Question 53 relates to the attractiveness of the surrounding buildings as its results show that Mohamed Ali square's buildings are beautiful with an average score of 3.5. This is followed by the three spaces' surrounding buildings that were valued as attractive, namely Saed Zaghloul at 3.3 due to the following buildings: Cecil hotel (Figure 5-17), commercial city chamber, the Metropole hotel and Alexandria Bank building. This was followed by El-Khaldin space with the score of 2.8 due to the mosque El-Qaeda Ibrahim and the WHO building. Next, was Abu El-Abbas at 2.5, due to Abu El-Abbas El-Morsy and El-Abbassiri mosques and El-Anfoushi children hospital near the square; however, there are a lot of unauthorised changes in the buildings. Finally, Ahmed Orabi square received 2 as it is slightly unattractive due to the same reasons, namely illegal changes in the surroundings that do not follow regulations and laws of the area.



Figure 5-17 Saed Zaghloul Square's attractive surrounding buildings : on the right side Cecil Hotel (source: the researcher, 2017)

Question 54 assesses the usage of the natural view by the design of the space; it appears that El-Khaldin and Saed Zaghloul are the two spaces that best use the sea view within their design. They are valued as appropriate with a score of 3.3 each; both spaces have their long

side on the seafront for the view; however, the seating arrangement does not make use of the sea as it is limited but will be discussed later in the discussion on Q56. Meanwhile, the rest are slightly inappropriate as Mohamed Ali, and Abu El-Abbas scored 2.3 each; Abu El-Abbas is on the waterfront directly connected to the sea and previously was really appropriate because the users were able to enter the garden and enjoy the eastern port view. However, nowadays the garden is inaccessible, and the seating benches are not located close to the view any more. Moreover, Mohamed Ali, since its creation, has no connection to sea view. Ahmed Orabi was measured as inappropriate with a score of 2; even though it has access to the seafront, the design and seating area make no use of the natural view.

Evaluating the appropriateness of the public art display (Q55), it appears that Saed Zaghloul square is highly appropriate due to its score of 3.5. This was calculated by the ten experts and the main reason for the outcome is the statue of the leader, Saed Zaghloul, which is the focal point in the axis of the space, is visible from all around the space, and acts as a landmark. Furthermore, El-Mansheya square is measured as appropriate with a score of 2.8. This is due to the display of the monument of the unknown soldier that is visible from the waterfront on entering Ahmed Orabi, which also acts as a landmark so visitors will know that they have reached the city centre from the corniche road. Besides this, the Mohamed Ali statue is in the middle, visible from Ahmed Orabi square and Mohamed Ali space. It is also noted, due to the fences around the Unknown Soldier, people are not allowed to approach it. It is kept in good condition unlike Mohamed Ali statue's base, which needs maintenance. Finally, the remaining two spaces were valued as not appropriate; firstly, El-Khaldin Garden has a score of 1.8 due to the poor conditions of all the statues' marble bases (platform) that are broken, and the quality of the displayed art needs maintenance, as shown in Figure 5-18. Secondly, Abu El-Abbas received 1.5 for the lack of any features in the garden, beyond the fountain, as the art display.



Figure 5-18 El-Khaldin Garden's Art Display (source: the researcher, 2017)

Question 56 evaluated the seating arrangement for varying views, namely sea views, trees or fountains. It reveals that only two spaces are measured as having appropriate arrangement; firstly Saed Zaghloul has a score of 2.8 and Ahmed Orabi has the score of 2.5. The first space has the highest score yet needs more seating areas; the limited number gives users options to sit around fountains or the statue or to sit on the steps to enjoy the sea view,. Meanwhile, the second space arranges the seating area more towards the green areas within the space, and some users try to sit on the fountain edges: El-Khaldin Garden and Mohamed Ali square are valued as slightly inappropriate with scores of 2.3 each. Some of the seating area arrangements in El-Khaldin should be located towards the sea view and some towards the display and green areas; the current situation is limited, and seats are oriented to the waterfront with the rest facing the tram view. The Mohamed Ali seating areas are organised but do not consider the need for different views from the surrounding buildings and sometimes these do not provide privacy for the users due to their orientation that places visitors opposite each other. Finally, Abu El-Abbas is highly inappropriate with a score of 0.5; this is because of the absence of benches due to its quality that is not usable. Additionally, it is located on the side perpendicular to the waterfront and not even located towards the garden and fountain view or towards the mosque.

5.2.3.3 Place Management and Maintenance

The third criterion includes a set of indicators that examine the place management and maintenance of the space in a variety of soft and hard landscapes, cleanliness and neatness, light features, urban furniture and the location of waste disposal bins. Table 5-3 reveals that this criterion appears to be the category that needs most consideration. It shows that the five public spaces were on the edge of the threshold in most of the indicators; the highest scored 2.5/4 and was deemed as appropriate and the lowest 0.3/4 was entirely inappropriate. The total average scores for the place management and maintenance category is inappropriate in four of the selected spaces starting with the highest score at 1.9 for Saed Zaghloul, followed by Ahmed Orabi at 1.7 and Mohamed Ali at 1.6, then El-Khaldin at 1.4. Finally, Abu El-Abbas has the lowest evaluation with a score of 0.9. This was measured as providing highly inappropriate management and maintenance.

When considering the soft landscape maintenance (Q57) Abu El-Abbas was the only space that was scored at 2 as it seems slightly better maintained than the others, because it is not permitted for people to enter the green space. The remaining spaces were measured as having inappropriate maintenance, starting with Saed Zaghloul at 1.8 that needs more watering and

care for the green area, especially in summer season. This was followed by El-Khaldin garden with a score of 1.5 and finally El-Mansheya square with a score of 1.3, which requires more maintenance for the significant number of daily visitors using the space.

The same situation applied for the hard landscape maintenance (Q58). Ahmed Orabi was measured as slightly maintained with the highest rate at 2. This was followed by three spaces valued as inappropriate in terms of their upkeep, starting with Mohamed Ali with a score of 1.8, Saed Zaghloul at 1.5, and El-Khaldin space at 1. The spaces need frequent care for their pavements, steps or the flowerboxes. Some of these are affected by their location on the waterfront, which face winter storms that affect their quality. Other factors include the frequent usage of the spaces throughout the year. Finally, Abu El-Abbas was measured as extremely neglected with a score of 0.5.

In evaluating the cleanliness of the spaces (Q59), Saed Zaghloul scored the highest at 2.5. This was deemed appropriate due to the clean appearance of the space most of the time; however, this depends on the season and the numbers of users during the day. It was followed by El-Khaldin that was valued slightly inappropriate with a score of 2 due to the use of corners by the street vendors as trash areas, as shown in Figure 5-19. The remaining spaces were measured as inappropriate, where El-Mansheya square received 1.8, and Abu El-Abbas had the lowest score at 1.3.



Figure 5-19 El-Khaldin Garden corner near the street vendors (source: the researcher, 2017)



Figure 5-20 El-Mansheya Square lighting features: A) with various glass designs, and B) without glasses and bulbs (source: the researcher, 2017)

For the lighting features, including their maintenance and replacement when needed (Q60), only Saed Zaghloul at 2.3/4 is slightly maintained. The other spaces were measured as inappropriate. El-Mansheya received 1.8 because, since the revolution, the square has been ravaged and all the glass and bulbs were taken, as shown in Figure 5-20. The government has not yet replaced them, yet they have located several new tall lighting features, as shown in Figure 5-21 that do not complement the design and spirit of the space; instead, they just prevent the issue. This is followed by El-Khaldin with a score of 1.3, which has an issue with the maintenance of lighting features as it affects the users, especially females, in preventing their use of the space at night alone. Finally, Abu El-Abbas was rated as 1, where the surrounding area of the square is neglected entirely.



Figure 5-21 El-Mansheya Square: lighting features replacement (source: the researcher, 2017)

Question 61 relates to the maintenance of urban furniture, and shows that, at 2, El-Mansheya square recorded the highest score among the spaces which was valued as slightly

inappropriate. This was followed by two spaces that were measured as inappropriate in terms of their maintenance; namely, Saed Zaghloul rated at 1.8 and El-Khaldin Garden at 1.3. As mentioned previously, the statues bases, benches, theatre area and fences need critical care for users' safety and satisfaction. Finally, Abu El-Abbas with a score of 0.3/4 was valued as extremely inappropriate.

Finally, the five public spaces scored lower than the minimum threshold for the placement of the waste disposal bins for users (Q62) and were thus inappropriate. The highest score was accorded to Saed Zaghloul at 1.8 where the bins are placed on the edges of the space, over the fence which users are not usually located close to. This is followed by Ahmed Orabi and El-Khaldin at 1.3 each, then Mohamed Ali at 1. Again, the lowest score at 0.3 belongs to Abu El-Abbas square that was measured highly inappropriate.

5.2.3.4 Place Identity and Character

The last category considers identity and character, and includes a set of indicators that examine the space as part of a historical area, containing architecture, character and elegance in appearance. The total average scores for place identity and character category is highly appropriate for Saed Zaghloul with a respective rate of 3.7. The rest of the spaces followed this and were valued as appropriate, starting with El-Mansheya Square at 3.3, then El-Khaldin Garden at 3.1. Abu El-Abbas at 2.6. These are shown in Table 5-3. It is clear that this category received the highest score in total among the perceptual aspects for the five selected spaces.

The first question in this category (Q63) shows that the five selected spaces are considered part of a historical area, within the city centre of modern Alexandria that started in the 1830s. As it appears in Table 5-3, El-Khaldin, Saed Zaghloul and El-Mansheya received a perfect score at 4/4 and Abu El-Abbas was scored at 3.8. The second evaluation (Q64) relates to the architectural character of the space, which also saw Saed Zaghloul scored at 4 followed by El-Khaldin and El-Mansheya (at 3.5 each). These all have an architecture character that reflects in the era of their foundation. The lowest score (2.8) was granted to Abu El-Abbas space, which was felt to have an appropriate architectural character, but that it was not as clear as the other spaces.

The last assessment in this category and in the impressionistic inventory (Q65) evaluated the elegance of the spaces. It revealed that two spaces are valued as elegant in appearance, starting with Saed Zaghloul with the score of 3; this was due to the conservation and

preservation of the surrounding buildings. Next was Ahmed Orabi with a score of 2.5, which was due to the condition of the monument to the Unknown Soldier and its presence as an entrance. Furthermore, Mohamed Ali Square valued as slightly inappropriate due to the neglect of a substantial number of the surrounding buildings that need restoration and maintenance; enforcing building regulations and laws would have a considerable impact on the appearance of the space. Finally, two spaces were measured as not elegant; El-Khaldin Garden with a rate of 1.8, as the space itself lacks the character of the surrounding area with its poor condition. Moreover, Abu El-Abbas was scored at 1.3 due to the illegal authorisation of the surrounding buildings in the area and the quality of the street spaces and the space itself, which all needs substantial care and management.

5.3 Walking Tour Assessment

The purpose of the assessment tool is to facilitate comprehension of the selected urban spaces in Alexandria, their different attributes and the users connected with them. The tool is structured in terms of the checklists underlying the three major aspects: functional, social and perceptual. The tool was developed by Salama and Azzali (2015) in a manner that allows the researcher to perform the walking tour by taking a relatively structured walk-through of an urban open space. Each category involves checklists with a scoring system. Checklists are phrased in the form of questions that follow each aspect. Questions are designed in a manner that reflects the core of each aspect. Numerical scores are assigned to questions to represent the degree of appropriateness; the questions use a four-point scale where 1 represents highly inappropriate, and 4 represents highly appropriate. Scores are averaged, and an overall score for each urban space is then calculated. The walking tour was conducted by ten architects, including the researcher, whose assessments were included in the final average score for each of the three categories of attributes. The assessment took place between February and April 2017.

Tables 6-4, 6-5 and 6-6 show the scoring averages of the ten professionals (Architects/Planners) that range from 0-4 and include 12 questions in each category. A colour code is added to the tables to quickly spot the critical indicators that required action or have potential. A location is either evaluated as slightly inappropriate if it scores between $\geq 2 - < 2.5$ and is highlighted in yellow, or it is measured as inappropriate if it scores below the minimum threshold (2) and is highlighted in red. In the overall of the criteria, any square scored between $\geq 2 - < 2.5$ will be highlighted in orange, or for less than 2, will be highlighted

in green to present the weakness. The scaling of the average score is therefore as follows: (0 – ≤1) Absolutely Inappropriate, (>1 – <2) Inappropriate, (≥2 – <2.5) Slightly Inappropriate, (≥2.5 – <3.5) Appropriate, and (≥3.5 – 4) Absolutely Appropriate.

5.3.1 Functional Aspects

This set includes aspects applicable to: accessibility; legibility and landmark; the variety of uses; the suitability of form and arrangement for uses; definition; the richness of variety in gathering locations; adaptability; spatial quality and urgency to the context; richness of visual experience and robustness; space harmoniousness; the richness and diversity of the landscape elements, and environmentally friendliness.

Walking Tour Assessment					
Questions	El-Khaldin	Saed Zaghloul	Mohamed Ali	Ahmed Orabi	Abu El-Abbas
Highly Appropriate 4 3 2 1 Highly Inappropriate					
Functional Factors					
1) To what degree is the space accessible from the surrounding urban context?	3.1	3.6	3.2	3.5	3.4
2) To what degree does this space include iconic features (landmarks) that make it unique and potentially visible from a distance?	3.1	3.7	3.6	3.6	3.9
3) To what degree does the space contain diverse uses?	2	2.4	2.6	2.6	2.9
4) To what degree is the form of the space suitable for the existing uses?	2.7	2.6	2.2	2.8	1.9
5) To what degree does the space have clear boundaries/edges?	3.5	3.5	3.7	3.7	2.9
6) To what degree does the space contain multiple gathering locations?	2.6	2.4	2.7	2.6	2.2
7) To what degree does the design of space can be adapted and modified according to needs and requirements?	2.6	2.5	2.7	2.2	2.2
8) To what degree is the space crucial to the surrounding urban context?	3	3.2	3.4	2.8	3.3
9) How would you rate the quality of the architectural vocabulary in the space?	2.2	3.2	3.5	2.8	3.5
10) To what extent are the buildings adjacent to the space harmonious to one another and to the pattern of the space?	2.5	3.3	3.5	2.7	2.9
11) How would you rate the quality of the landscape features in the space?	1.9	2.2	2.3	2	1.8
12) To what degree could the design of the space be labelled as environmentally-friendly?	1.8	2.1	2.2	2.1	1.6
Functional Total Av Score/Space	2.6	2.9	3	2.8	2.7

Table 5-4 The functional aspects of the walking tour assessment (source: the researcher)

From Table 5-4, it can be seen that Mohamed Ali Square received the highest score at 3/4 while El-Khaldin Garden obtained the lowest at 2.6/4. However, the selected spaces are measured as appropriate. Various indicators within this set, including accessibility, legibility, definition and space significance, have received highly appropriate scores. This is because the selected squares have sharp, well-defined boundaries and are clear; these qualities make them distinguishable with flexible access and connectivity. Although a

mixture of European architectural vocabulary edge and define the squares, this still demonstrates the richness of the visual experience, and the spatial and formal quality. This confirms why the squares are the main urban spaces within the city centre of Alexandria, and accommodate a range of shops and occasional events throughout the year. In essence, this demonstrates the critical role that functional attributes play in enhancing usability. Receiving appropriate scores in these functional attributes clearly correspond with the analysis of behavioural mapping and demonstrate the fundamental nature of these indicators in stimulating urban life.

Question 1 related to the accessibility from the urban context; Saed Zaghloul and Ahmed Orabi received highly appropriate scores, and were valued as appropriate. The highest score, at 3.6, goes to Saed Zaghloul followed by Ahmed Orabi at 3.5; next is Abu El-Abbas at 3.4, Mohamed Ali at 3.2, and the lowest value was given to El-Khaldin Garden at 3.1. This was due to the various accessible modes of public and private transportation, such as cars, trams and buses and walking. Saed Zaghloul and El-Mansheya can be considered as transportation hubs where users from different age groups and socio-economic backgrounds visit the spaces for different purposes. In terms of commerce, the area accommodates various retails uses, such as takeaway, fast food and drinks, restaurants, cafes and shops (clothing, accessories, furniture). It also incorporates administrative uses, such as courts, consulates, clinics and firms; moreover, it includes recreational in the form of cinemas and theatres. Finally, religious uses are also present in the El-Khaldin and Abu El-Abbas.

Question 2 is concerns visible iconic features; Abu El-Abbas has the highest score at 3.9/4, due to its proximity to a landmark mosque for the area and its connection to Alexandria itself, for which the square is named. Moreover, it can be seen from the citadel and the Eastern Harbour waterfront (Figure 5-22). Saed Zaghloul is scored second highest at 3.7, and includes two robust iconic features; the first is the statue of Saed Zaghloul for whom the square is named, and the Cecil hotel. Both can be identified from a reasonable distance in the area. El-Mansheya Square received 3.6; Mohamed Ali Square is iconic, but the most recognised landmark known there is the statues of Mohamed Ali on the horse, which is not that visible from a distance unless a visitor is within the El-Mansheya area. Moreover, Ahmed Orabi, the dominant landmark in the monument of the Unknown Soldier (El-Gondy El-Maghoul), can be recognised from a distance on the Corniche Boulevard and the French consulate. Finally, El-Khaldin garden is valued at 3.1 for its dominant landmarks in the area,

which are El Quaed Ibrahim mosque (this can be recognised from a distance) and the WHO building.



Figure 5-22 The iconic Abu El-Abbas Mosque from the sea (source: Unknown)

The evaluation of Q3 that related to the diversity of uses and activities reveals the differences between the spaces valued as appropriate and slightly inappropriate. Surprisingly, Abu El-Abbas was scored the highest at 2.9; this was due to its outer share of the square that provides various activities and uses, such as walking, sitting in restaurants, eating, meeting and recreational activities. El-Mansheya is scored the second highest at 2.6; the space accommodates an average range of activities including sitting, meeting, resting, eating and walking. These spaces are measured as appropriate. In comparison, Saed Zaghloul was scored slightly inappropriate at 2.4 yet the square is a social hub and a point of attraction for different user groups; it accommodates diverse activities, such as walking, exercising, eating, playing, sitting, chatting and relaxing. The area accommodates different retail and entertainment uses, such as restaurants, cafes and shops. Lastly, El-Khaldin Garden accommodates an average range of uses including sitting, relaxing, and enjoying the sea view, but excludes walking within the area which explains its score of 2/4; however, it is also used in special occasions, such as Ramadan prayers.

Question 4 examines the suitability of the form for existing uses; for this, three spaces are scored as suitable and appropriate, namely Ahmed Orabi at 2.8, El-Khaldin at 2.7 and Saed Zaghloul at 2.6. In comparison, at 2.2 Mohamed Ali square was scored as slightly unsuitable due to its size and linearity. This space received the lowest score for the square due to its functional aspect. Finally, Abu El-Abbas is not suitable for existing uses and only scored 1.9, due to the lack of maintenance.

The measures of the indicator in Q5 were associated with the clarity of the boundaries or the definition of the space; El-Mansheya Square is well defined with clear boundaries and thus was scored at 3.7/4. This put Mohamed Ali and Ahmed Orabi in first place in terms of the scoring. Next were Saed Zaghoul and El-Khaldin with scores of 3.5 each, and last was Abu El-Abbas with 2.9.

Question 6 evaluates the range of gathering locations within the space, and sees Mohamed Ali scored highest at 2.7. In this space, people gather in different spots along the pedestrian spine along the parallel and perpendicular axes of the square. Moreover, Ahmed Orabi has gathering locations along its axial path in the seating areas and users gather on the corners or group around the fountain or water elements. In comparison, El-Khaldin contains a limited number of gathering locations due its lack of maintenance; however, users gather on the corners or group near the edges. Both spaces were scored at 2.6 and deemed appropriate. Saed Zaghoul scored 2.4 because it includes different gathering nodes that were not designed as such, including the statue's base area, around the fountains where people sit and relax, on the stepped pathway to chat and enjoy the sea view, and by the edges near the parking area where people meet. Abu El-Abbas was scored lowest at 2.2 and considered slightly inappropriate because users only gather in the shops around the space, at the local funfair, or in front of the mosque entrance.

The indicators in Q7 measure the degree of spatial adaptation in accordance with the needs of users; Mohamed Ali was scored at 2.7 as the square can be modified to people's needs by adding or building portable and non-authorized features. El-Khaldin received 2.6, whilst Saed Zaghoul had 2.5; it appears that the spaces are modified and adapted to the user's requirements. Next, at 2.2 each Ahmed Orabi and Abu El-Abbas were assessed as slightly inappropriate; the spaces seem to offer limited opportunities for adaptation to users' needs; this is only considered through non-authorized features.

Question 8 examines the importance of the space to the surrounding urban context; the five selected spaces were measured as important with Mohamed Ali scored highest at 3.4 followed by Abu El-Abbas at 3.3 then Saed Zaghoul at 3.2, El-Khaldin Garden at 3 and finally Ahmed Orabi at 2.8. These scores reveal that the spaces are crucial within the density of the city centre and the urban tissue; the spaces give users the feeling of openness, as shown in Figure 5-23.



Figure 5-23 El-Khaldin garden open view (source: the researcher, 2017)

The indicator Q9 considered the architectural vocabulary of the space, and sees Mohamed Ali and Abu El-Abbas scored the highest at 3.5 each. This was due to the European architectural style around El-Mansheya square, and the Ottoman Turkish spirits in the Abu El-Abbas area. These are followed by Saed Zaghloul at 3.2, which is good but its maintenance needs more attention. The same situation applies to Ahmed Orabi 2.8 and El-Khaldin whose architectural vocabularies are appropriate, but the quality is slightly inappropriate due to the poor conditions of the surrounding buildings.

Question 10 evaluates the harmony of buildings adjacent to the space. The highest score was assigned to Mohamed Ali Square at 3.5, which was deemed highly appropriate due to the presence of 19th and 20th Century architecture; these are harmonious to one another, with a constant skyline in the space and the harmony between the patterns of buildings as openings, the cornice, heights and the rest of the space were classified as appropriate. In comparison, Saed Zaghloul was scored at 3.3, followed by Abu El-Abbas at 2.9, Ahmed Orabi at 2.7 and El-Khaldin Garden at 2.5. This was due to the conditions of the surrounding buildings adjacent to the spaces and that are harmonious to one another; however, there are some illegal, unauthorised construction in the area that affect the harmony and patterns.

The last two indicators consider the quality of the landscape features (Q11), and examine the design in terms of its environmental friendliness (Q12). The five spaces were classified as either slightly inappropriate or inappropriate. For the quality of the landscape features, Mohamed Ali at 2.3 and Saed Zaghloul at 2.2/4 are diverse in terms of the palm trees, grass,

pavements, platforms, steps and benches appear to be slightly appropriate. Furthermore, Ahmed Orabi was scored at 2, and El-Khaldin at 1.9. The latter score was due to the neglect of the soft and hard landscape areas as the furniture and lighting features and the square and quality of the hard-landscape features for Abu El-Abbas are very poor. However, the inner part of the square does not permit users to enter; this is why its soft landscape appears slightly appropriate. In terms of environmental-friendliness, the five squares received the lowest scores for this quality amongst all the functional aspects. Mohamed Ali received 2.2, followed by Saed Zaghloul and Ahmed Orabi at 2.1 each; next, was El-Khaldin at 1.8 and the lowest was Abu El-Abbas at 1.6. This was due to the poor quality of the landscape features and the pollution (either air or sound) from car traffic, or visual pollution due to trash, and the poor hygiene of the spaces or their surroundings.

5.3.2 Social Aspects

This set includes aspects or indicators that include: social interaction; human scale; functionality; inclusivity; the diversity of age groups and activities; social backgrounds and diversity, the efficiency of use; permeability and movement; accessibility and accessibility for users with special needs. From Table 5-5, it can be seen that Saed Zaghloul Square received the highest score at 2.7/4 while El-Khaldin Garden obtained the lowest at 2.4/4. Only two indicators from this set received highly appropriate scores; firstly, accessibility by different transportation options to the surroundings, and secondly, legibility, definition and space significance. For the following two indicators the five selected spaces received inappropriate scores of 2 and below; the efficiency of the space furniture and the accessibility for those who have special needs.

In the social aspects set, Q1 examines the human scale with respect to the enclosure of the buildings of the space. The selected spaces were valued as appropriate for their building settings and heights compared with the void and settings of the spaces, which satisfy the sense of human scale. As shown in Table 5-6 El-Khaldin Garden and Saed Zaghloul square were scored the highest at 3 each; this was followed by Mohamed Ali and Abu El-Abbas square at 2.8 each, and finally, Ahmed Orabi at 2.6.

Question 2 evaluates the degree of pleasant function with the surrounding context; it is clear that Saed Zaghloul and El-Mansheya squares are the only two spaces with a pleasant function with their surroundings. This is because their locations are easily accessible; Saed Zaghloul and Ahmed Orabi squares were scored at 2.9, followed by Mohamed Ali, which

was considered slightly less pleasant at 2.5. The rest were scored as having a slightly unpleasant function; El-Khaldin was scored at 2.4 for its elevated platform, and Abu El-Abbas square at 2.

Walking Tour Assessment					
Questions Highly Appropriate 4 3 2 1 Highly Inappropriate	El-Khaldin	Saed Zaghloul	Mohamed Ali	Ahmed Orabi	Abu El-Abbas
Social Factors					
1) To what degree do the buildings enclose the space with respect to the human scale?	3.0	3.0	2.8	2.6	2.8
2) To what level does the space function pleasantly with the surrounding context?	2.4	2.9	2.5	2.9	2.0
3) To what degree could the space be labelled as socially inclusive?	2.3	2.9	3.0	3.0	2.7
4) To what degree does the space encourage and support interaction?	2.7	2.8	2.5	2.3	2.8
5) To what degree does the space encourage the social inclusion of different ages?	2.8	2.7	2.7	2.2	3.3
6) To what level does the space encourage interaction between different social groups?	2.2	2.5	2.4	2.2	2.3
7) To what level do the uses in the space serve different social groups?	2.3	2.5	2.6	2.9	2.1
8) To what degree does the space host diverse social activities?	1.7	2.3	2.1	2.2	2.6
9) To what extent does the space's furniture serve multiple users and activities?	1.7	1.9	1.9	2.0	1.7
10) To what level is the space accessible by different transportation options?	3.5	3.6	3.3	3.5	3.6
11) To what degree is the space accessible from the urban surroundings?	3.2	3.6	3.5	3.5	3.3
12) To what level is the space accessible for those who have special needs?	1.2	1.5	1.6	1.5	1.5
Social Total Av Score/Space	2.4	2.7	2.6	2.6	2.6

Table 5-5 The social aspects of the walking tour assessment (source: the researcher)

The evaluation for Q3 is linked with social inclusivity; El-Mansheya square received the highest score at 3 due to the usage of the space from a wide range of social levels (Figure 5-24). This was explained by the multiple purposes of the area that include residential, recreational, commercial and administrative. The same situation applied to Saed Zaghloul square, which was scored at 2.9. Abu El-Abbas Square scored 2.7. This was still appropriate but lower as its social inclusiveness only relates to religious purposes; otherwise, the space is used more by a specific social group. Finally, El-Khaldin Garden was assessed as slightly not inclusive; this was due to the absence of certain social groups, that could be explained by its condition and reputation.



Figure 5-24 El-Mansheya Square's social and age inclusiveness (source: the researcher,2017)

Q4 examines the degree to which the space encourages and supports interaction; Saed Zaghloul and Abu El-Abbas were scored at 2.8 each. Both locations provide spaces that make it easy for users to meet and talk to each other. Saed Zaghloul provides openness and a sense of safety and visibility, whilst Abu El-Abbas has an intimate scale that supports the interaction of visitors and locals. El-Khaldin scored 2.7 as the space is small; after a while users would become familiar others, primarily in the morning, which might encourage interaction. This was followed by Mohamed Ali square that was evaluated as supporting interaction, as users may ask for directions to a particular administrative building or shop or for help. Finally, Ahmed Orabi scored 2.3 as slightly not supporting interactions; this is because most users pass by as a pathway to another destination.

Question five relates to whether the spaces encourage different age groups to use the space; Abu El-Abbas received a significant 3.3 since the space is used by all ages as there are different purposes to visit. For example, children using the local funfair, teenagers and adults having local food or ice cream, adults and elders sitting in local coffee shops playing games or watching TV; additionally, all the ages use the mosque for prayer, celebrations or feasts. This is followed by El-Khaldin Garden with the score of 2.8, as users are from different age groups including mothers who bring children to play in the field due to its separation and safety from traffic and limited exits. Moreover, teenagers and students having breaks, also visit as well as couples, or adults and older people just relaxing and enjoying the sea view. Saed Zaghloul and Mohamed Ali squares were scored at 2.7 for the same reasons in that the space is used for different drives as a meeting point or for passing by; all ages can be seen

in the area. Finally, Ahmed Orabi received the lowest score at 2.2 as slightly not encouraging; this was due to the condition of its green areas.

Question 6 examined the interaction between different social groups. Only Saed Zaghloul square was scored as encouraging at 2.5, while all other squares were scored as slightly not encouraging, starting with Mohamed Ali at 2.4 followed by Abu El-Abbas at 2.3 and finally by El-Khaldin and Ahmed Orabi at 2.2 each. This was because certain social group levels are almost absent or only use the space for a specific purpose, rather than to relax or visit the area due to 'non-belonging feelings' or necessary activities.

The indicator Q7 concerns whether the space serves different social groups; for this, Ahmed Orabi was scored highest at 2.9. This was due to its location as a transportation hub and its pathways to other places. It was followed by Mohamed Ali at 2.6, which tends to better serve the adults who work around the area or have paperwork to be done,. Next was Saed Zaghloul at 2.5, while El-Khaldin and Abu El-Abbas had slightly inappropriate scores at 2.3 and 2.1 respectively. This was due to the design of the spaces, their condition and permeability of use.

The assessment in Q8 examined the hosting of diverse social activities; surprisingly only Abu El-Abbas was measured as appropriate with a score of 2.6 for the various recreational activities around the space (local funfair, horse riding and eating local food) and religious uses (prayers, feast and the Moulded). In comparison, Saed Zaghloul and El-Mansheya (Mohamed Ali and Ahmed Orabi) were valued as slightly inappropriate at 2.3, 2.2 and 2.1 respectively, whilst El-Khaldin Garden scored 1.7 for its condition that was not appropriate to host diverse activities.

Question 9 reveals the appropriateness of the furniture, which serves multiple users and activities. Surprisingly, the five selected spaces were measured as slightly inappropriate and inappropriate; Ahmed Orabi scored 2 as the distribution and furniture did not serve multiple activities. This was followed by Saed Zaghloul and Mohamed Ali at 1.9 each. These had the same issue as well as problems with the orientation and the poor conditions of the furniture, which affected the service. Moreover, El-Khaldin and Abu El-Abbas were scored at 1.7 each, which were affected by the inferior quality and condition of the furniture that required proper maintenance, replacement and consideration regarding its orientation.

The indicator Q10 related to accessibility and concerned different transportation options, whilst Q11 examined accessibility from the urban surroundings; these were the only

indicators that received high scores across the five selected spaces. Saed Zaghloul and Abu El-Abbas squares were valued at 3.6 each, followed by El-Khaldin and Ahmed Orabi with scores of 3.5 each. These were highly accessible by numerous methods public transportation including trams and buses, which pass by or through the square; additionally, these were reachable by private car and taxi due to their locations in the heart of the city centre. Finally, Mohamed Ali was appropriately accessible by many public transportation and had a good score of 3.3; near the square are train, bus and tram stations which are within a reasonable walking distance from Mohamed Ali square area. Saed Zaghloul (Figure 5-25) and El-Mansheya squares are highly accessible from the urban surroundings with scores of 3.6 and 3.5/4 respectively. These are followed by Abu El-Abbas and El-Khaldin Garden, which are appropriately accessible from the urban surroundings with scores 3.3 and 3.2 respectively. These scores can be explained by the same reason concerning their locations and the Corniche boulevard plus the street networks.



Figure 5-25 Saed Zaghloul Square from the tram side connected to El-Khaldin Garden next to El-Quaed Ibrahim Mosque (source: the researcher, 2017)

The lowest value indicator for the five spaces that found them inappropriate was Q12; this examined the accessibility for those with special needs. Mohamed Ali was valued at 1.6 as the space might not be accessible for wheelchair users due to the poor condition of the paths, as shown in Figure 5-26; they could access this space with the help of others due to the level of the steps and lack of ramps or alternatives. This was followed by Saed Zaghloul; this space is partially accessible from the secondary entrances located in the outer edges (Figure 5-27); however, the central axial entrance of the square on which the statue (landmark) is located is on a multiple ground level with steps only and no ramps (Figure 5-28).



Figure 5-26 Mohamed Ali Square: Pavement condition (source: the researcher, 2017)



Figure 5-27 Saed Zaghloul Square: Secondary entrance (source: the researcher, 2017)



Figure 5-28 Saed Zaghloul Square's main entrance with no ramps (source: the researcher, 2017)

Moreover, the entrance from the southern side is permanently closed for Ahmed Orabi due to the fences around the square on the edges of the pavement and the lack of ramps. In addition, the street is not easy to cross in rush hour, and there is no space for wheelchair users to manoeuvre to reach the area (Figure 5-29). For Abu El-Abbas, the space is not accessible or usable to any users, as mentioned before; only the outer edges of the space can be used, and it is not easy for users with special needs to access due to the tram and car traffic plus the lack of ramps; this explains its score of 1.5. Furthermore, El-Khaldin had the lowest score at 1.2/4; as the garden is elevated the only option to access the space is by steps. Thus, the area does not include ramps for wheelchair users (Figure 5-30).



Figure 5-29 Ahmed Orabi Square's fence and no ramps to access the space for wheeled chair users (source: the researcher, 2017)



Figure 5-30 El-Khaldin Garden stepped entrances (source: the researcher, 2017)

5.3.3 Perceptual Aspects

This set includes key aspects related to safety and security (day and night), relaxation and comfort, vitality, memory, identity, the image of the city and history, ethnic reflections, spatial experience, noise levels, personal distance, privacy, and human needs and experience. The overall assessment of perceptual factors from Table 5-6 shows that Mohamed Ali Square received the highest score at 2.7/4 as it has three indicators scored as highly appropriate, while El-Khaldin garden with a score of 2.4 and Abu El-Abbas with 2.3 are slightly inappropriate and represent the lowest among the five urban spaces.

Walking Tour Assessment					
Questions Highly Appropriate 4 3 2 1 Highly Inappropriate	El-Khaldin	Saed Zaghloul	Mohamed Ali	Ahmed Orabi	Abu El-Abbas
Perceptual Factors					
1) To what degree does the space offer the feeling of safety and security to its users?	2.6	3.0	2.7	2.8	2.2
2) To what extent do night facilities support the sense of security and safety at night?	1.6	2.4	2.3	2.7	1.5
3) To what degree could the physical design of the space raise the feeling of comfort and relaxation?	3.2	2.8	2.8	2.2	2.2
4) To what degree does the space promote the feeling of vitality?	2.6	2.8	3.1	3.2	3.1
5) To what degree can the architectural character of the space be described as memorable?	3.1	3.0	3.6	3.6	3.3
6) To what degree does the architectural character of the space reflect Alexandria's identity?	2.5	3.2	3.8	3.2	3.4
7) To what degree could the place be described as the image of the city?	2.4	3.1	3.5	3.1	2.8
8) To what extent do the signs/ billboards in the space reflect different ethnicities?	1.7	1.9	2.1	2.0	1.7
9) To what degree could the spatial experience in the space be described as fascinating?	2.1	2.5	2.4	2.0	2.1
10) To what degree is the noise level measured as acceptable?	2.0	2.1	1.3	1.2	1.6
11) To what degree does the space's layout reflect personal distance and privacy?	2.2	2.3	1.5	1.9	1.5
12) To what degree does the space raise users' attachment to it while offering occasions for human experience?	2.5	2.6	2.7	2.6	2.5
Perceptual Total Av Score/Space	2.4	2.6	2.7	2.5	2.3

Table 5-6 The perceptual aspects of the walking tour assessment (source: the researcher)

Q1 relates to the safety and security of users; four spaces out of the five were scored as appropriate and highest amongst these was Saed Zaghloul square at 3; this can be explained by the fact that it is visible from all the edges, whilst the flow of the people passing by the space is high. This was followed by Ahmed Orabi and Mohamed Ali Squares at 2.8 and 2.7 respectively; these are appropriate but the size and the shape of the spaces makes them a

challenge. Ahmed Orabi is valued as safer due to visibility; however, in Mohamed Orabi the passage is not that safe for elder users and needs more maintenance. El-Khaldin Garden was scored at 2.6 as it is safe in the morning but not that visible from the surroundings due to the different elevated level. However, Abu El-Abbas square was valued as slightly inappropriate at 2.2 as users only visit the edges and surrounding streets around the fenced garden, which is not safe due to the cars and trams.

Question 2 related to the night facilities that support the sense of security and safety at night; Ahmed Orabi was the only space that was measured as appropriate at 2.7, while Saed Zaghloul received 2.4 and thus slightly unsuitable to be called safe at night. This was from the professional view and considered the arrangement and amount of light in space. Mohamed Ali Square received 2.3 also for the lack of light maintenance in the space itself that made it difficult to walk through in low light due to the condition of the paths. El-Khaldin garden and Abu El-Abbas were measured as inappropriate at 1.6; this was due to the limited visibility of the elevated garden that causes low usage at night, especially amongst females. In addition, the darkness of the space due to the lack of lights in general and effective maintenance influenced the score. Abu El-Abbas at 1.5 has lights but the space is crowded and there is a lack of any kind of security or police presence in the area, which encourages the high presence of panhandlers and random street vendors that potentially make users feel unsafe.

Question 3 relates to the comfort and relaxation afforded; three spaces were valued as appropriate. The highest score was for El-Khaldin Garden at 3.2 due to its elevated platform that gives it a relaxing sea view with traffic in the corniche. This was followed by Saed Zaghloul and Mohamed Ali at 2.8 each. The first square is located by the sea which has a view; in addition, it has a wider green area compared to the other spaces where people like to lie down and have a break in the middle of the day. Mohamed Ali square feels more comfortable than relaxing due to the vitality of the space; however, it has many spaces for people to sit and relax while waiting or passing by the space. Ahmed Orabi and Abu El-Abbas were scored at 2.2 each and were considered slightly inappropriate due to the traffic of vehicles and transportation, which did not help that much for relaxation, whilst the lack of pavements and the condition around the space mean users have to walk on the edges of the streets.

Question 4 related to the vitality of the five spaces, and all were considered appropriate; Ahmed Orabi received 3.2, and Mohamed Ali and Abu El- Abbas scored 3.1 each; El-

Mansheya square is vibrant due to its activities and constant movement during the day. This is because of its location in the heart of the city centre where people visit for various purposes during the day, and for shopping and entertainment during the evening. Moreover, Abu El-Abbas was scored for its activities and recreational life around the space that includes local funfairs and restaurants, plus the area itself is usually busy with inhabitants during the day. Saed Zaghloul square scored 2.8 and El-Khaldin 2.6. These spaces are more active in the morning for their locations near educational facilities; thus, students pass by or meet in or around the space. Saed Zaghloul is also busy by night with a different range of visitor ages and genders who visit the space to meet. However, El-Khaldin garden is more a destination area that students visit for a break, plus elders use for meetings, and different genders use in the morning only.

Question 5 considers whether the space is memorable and monumental. El-Mansheya square received the highest score at 3.6 ; it is highly appropriate due to its historical value and its presence as the oldest space in Alexandria since the 1830s. This is followed by Abu Al-Abbas, at 3.3, because it is the most iconic mosque on Alexandria's waterfront, and then, El-Khaldin Garden at 3.1 with the second mosque, as mentioned in Chapter 4 section. Saed Zaghloul scored 3, and it is also memorable due to the Egyptian leader whose statue is located in the middle of the space.

Question 6 relates to identity whilst Q7 links to the image of the city. The experts valued Mohamed Ali square as highly appropriate in both indicators at 3.8 and 3.5 respectively. This was due to its relationship with the cosmopolitan era and presence of European architecture around the space that dates from the 1830s to the 1930s, and marked Mohamed Ali Square as the core and foundation of the modernisation of Alexandria and its revival as a port city. Saed Zaghloul and Ahmed Orabi received the same score for the indicators at 3.2 and 3.1. These can be explained by their relationship to history and their symbolic values; additionally, their architecture relates to the same area of the cosmopolitan city. Abu El-Abbas received 3.4 for its identity, which is related to the old Turkish town of Alexandria; however, it has a flavour of European architecture but is also influenced by Islamic architecture. This space was scored at 2.8 for the image of the city. El-Khaldin Garden was considered slightly inappropriate at 2.5 for its identity, due to the surrounding building styles. However, the space itself changed in the 1960s with no regeneration of the garden from the past. For Q7, it scored 2.4, which signifies it was not accepted as the image of the city due to its poor design and condition.

The next four indicators were scored at either slightly inappropriate or inappropriate in the five selected spaces. Starting with Q8, this was associated with the signs reflecting different ethnicities. Mohamed Ali scored 2.1 for its minimal signs despite the evidence of different languages. Although this was used to form its foundation, the space now has English signs and very few French. These are not that clear due to their condition or size. Ahmed Orabi was scored as inappropriate at 2, Saed Zaghloul at 1.9 and then El-Khaldin and Abu El-Abbas at 1.7 each; the spaces only have hotels and banks or international brands advertising billboards in the English language.

Secondly, for Q9, Saed Zaghloul was the only appropriate space with a score of 2.5, while Mohamed Ali, El-Khaldin and Abu El-Abbas were scored as slightly inappropriate for the spatial experience; this can be described as fascinating at 2.4 and 2.1. Moreover, Ahmed Orabi was scored at 2.0 due the condition of the area which is affected by traffic, renovation or restoration.

Question (Q10) is connected to the noise level; Saed Zaghloul and El-Khaldin were the only spaces between the five that were measured slightly inappropriate with scores of 2.1 and 2 respectively. Amongst the other spaces, the noise levels were measured as unacceptable, starting with Abu El-Abbas at 1.6, Mohamed Ali at 1.3 and Ahmed Orabi at 1.2. This was due to the high volume of traffic and the tram rails near the space.

Finally, in this set Q11 examined the spaces' layout. These were scored as slightly inappropriate for personal distance; Saed Zaghloul scored 2.3 and El-Khaldin 2.2 as some of the seating areas are designed to give each user or group their own space, as shown in Figure 5-31. This was followed by the inappropriate distance recorded for Ahmed Orabi (1.9), Mohamed Ali and Abu El-Abbas (both 1.5); this was due to the design of the seating area, which were very close or non-existent in the case of Abu El-Abbas.



Figure 5-31 Saed Zaghloul Square: Personal distance in the seating area (source: the researcher,2017)

For Q12, users' attachment to the space was considered; these were scored as suitable for the five selected spaces due to their history of the foundation of modern Alexandria and their locations in the city centre. Mohamed Ali was scored at 2.7 followed by Saed Zaghloul and Ahmed Orabi at 2.6 each; however, El-Khaldin and Abu El-Abbas scored 2.5 due to their poor condition and the lack of a sense of security at night.

5.4 Summary

This chapter has discussed and reported the findings of the first two layers of the assessment mechanism which was conducted in order to explain the current situation using the impressionistic assessment and facilitate comprehension of the selected public spaces by applying the walking tour assessment tool with its different attributes. The purpose it to explore experts' perception of the built environment, the preferences and interpretations of the selected case studies.

The findings of experts' perception are used in chapter 6 and chapter 7, along with the findings of users' perception (Chapter 6) to conduct the last section of chapter 6 which is the conclusion of each public space of the selected case studies from experts and users' perceptions. This conclusion followed by discussion (Ch7) in order to evaluate the quality of the case studies analysis throughout the multi-layered mechanism.

Next chapter 6, discusses and report the findings from other two layers of the multi-layered methods to evaluate the users' perception.

6. Case Study Analysis Users' perception

6.1 Introduction

The previous chapter 5 analysed and reported the experts' perception the following step is analyzing the users' pattern and their perception of the selected spaces (Figure 6-0). This chapter is divided into three sections, The first part reporting direct observation and behavioural mapping, which are systematic methods to describe what people, namely the users of a space, actually do there. Observation and mapping are tools for understanding the dynamics of people and their interactions with the urban environment; these are alternative approaches to data collection, and view people as 'objects' by recording their periodic behaviour. Moreover, an attitude survey was designed to facilitate the comprehension of the urban spaces of Alexandria from the user's point of view presenting the second section. This section reporting and analyzing the case studies in five parts or sub-headings; starting with the demographics of the participants in this study, followed by the visual preferences survey and ends with the three key aspects of the users' reaction questionnaire and its indicators.

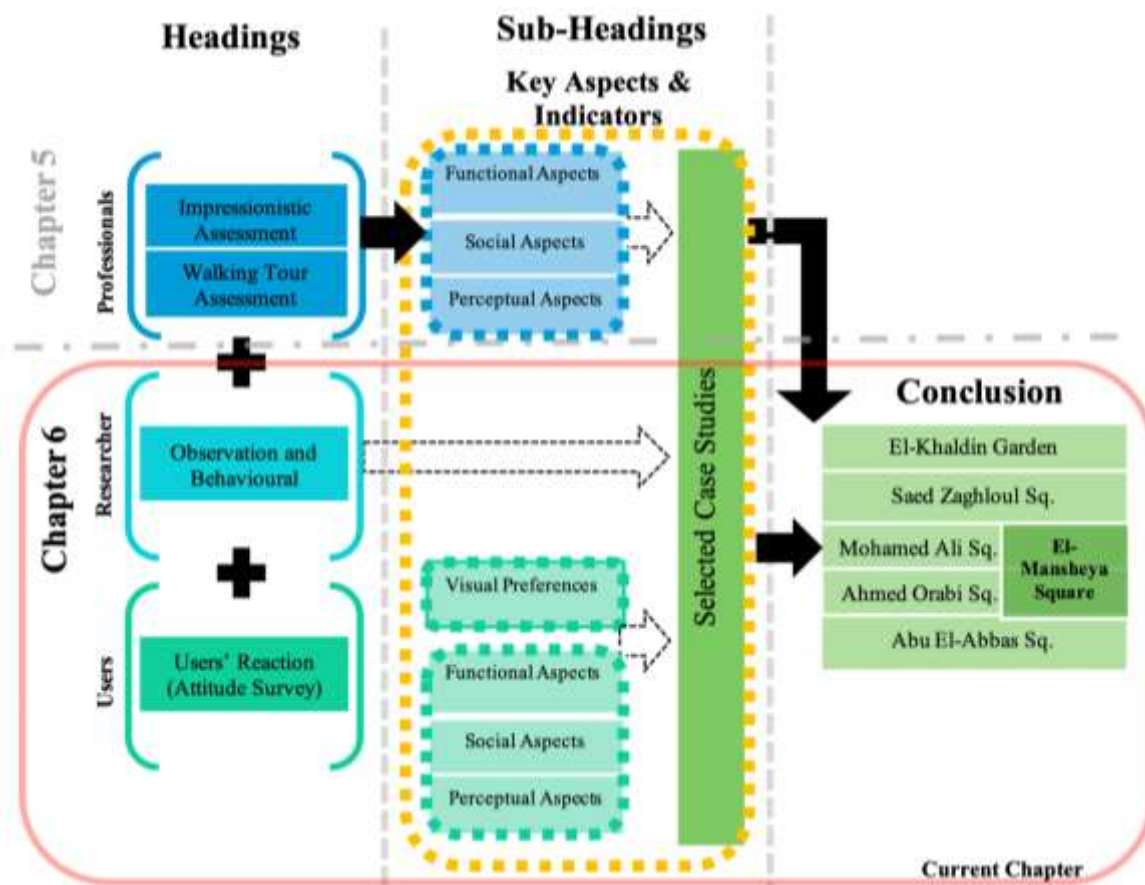


Figure 6-0 A diagram that illustrate the structure of the case studies analysis chapters, and its hierarchy emphasising the current chapter 6 within the red outline

In the users' perception analysis, Mohamed Ali Square and Ahmed Orabi Square are occasionally considered as one public space "El-Mansheya square", as mentioned before in Chapter 4 (section 4.5.2.3) the two public spaces are combined since the early 1900s.

Today Alexandria's residents and the space occupants consider the space and usually refer to it as "Midan El-Mansheya" and they use Mohamed Ali statue or the unknown soldier monument as landmarks to identify their location within the space.

6.2 Behavioural Mapping and Observation

The study classifies urban users of the square into three categories: Males, females (age between 18 and 55+) and children (<13). The categories were observed during their static activities in the square throughout various visits to the public spaces carried out on different weekdays and weekends during the morning, afternoon and evening to observe users' behaviours within the space. This involved mapping their locations, the flow, and the variety and type of activities. The observations took place in February and March 2017 on weekday mornings between 9:30 and 10:30am, weekday afternoons between 2:00 and 4:00pm and on evenings between 7:00 and 10:00pm. They were also conducted at weekends in the morning between 10:30 and 11:30am, the afternoon between 12:00 and 4:00pm and in the evening between 8:00 and 11:00pm. It is recognised, however, that the profile of users and their uses within the space may vary if the observations had been undertaken during other months or seasons.

6.2.1 El-Khaldin Garden

The most often observed activity in El-Khaldin Garden was sitting; either on the available, poor quality benches along the paths located near the Corniche or on any platform or grassy area (Figure 6-1). People are in small groups, such as groups of friends and couples sitting on the bench while families with children were observed sitting on the benches between the grass area, and the platforms have views of the tram and mosque where children can play. A small minority of the men sat on the grass when the space was crowded, especially in the afternoons. Sitting was mostly accompanied by eating snacks. Children were observed playing on the grass area around their families or on the platforms using them as slides (Figure 6-2) since there were no public playing grounds in the space. A few men were observed smoking. Seats with the view of the sea were most targeted by the users. From Figure 6-3 and Figure 6-4, it is clear that users usually visit the northwest side of the space

that has the sea view or the tram/mosque view. A lower number, usually boys between the ages 13 to 18, use the south area of the garden.



Figure 6-1 Users sitting in El-Khaldin Garden (source: the researcher,2017)



Figure 6-2 Children using the platform as a slide (source: the researcher,2017)

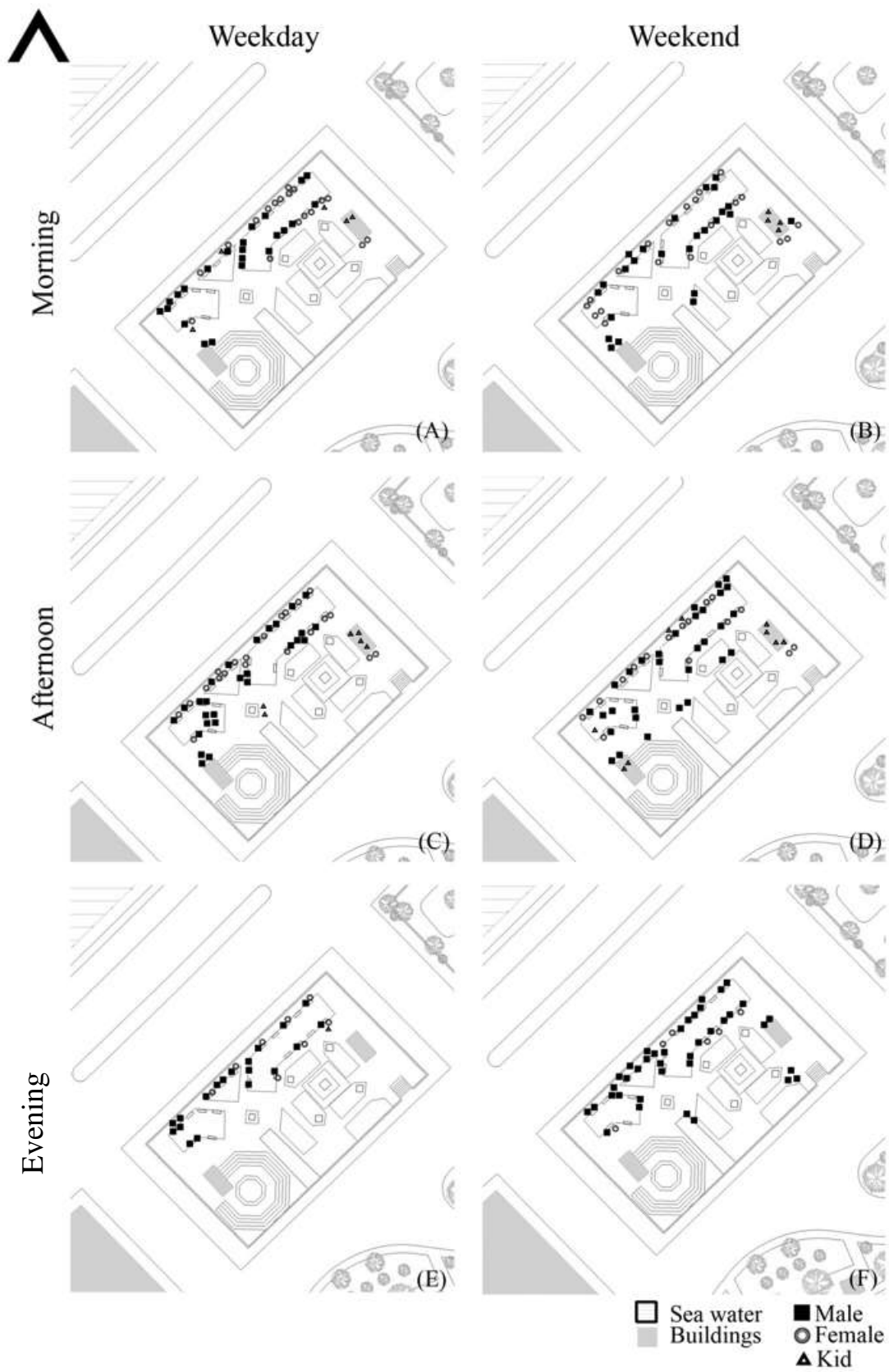


Figure 6-3 El-Khaldin Garden: Observation mapping during weekday and weekend (morning, afternoon and evening) and legend (source: the researcher)

There were no walking activities within the square because the space is elevated from the ground level; the garden is more a destination point for users. Several people pass around the space at ground level but not through El-Khaldin; this is due to its entrance steps from the south area.



Figure 6-4 El-Khaldin Garden preferred seated areas (source: the researcher,2017)

The second observed activity was the local street vendors (inferior standard) around the space and a few within; these were serving tea, coffee, grilled corns, baked sweet potatoes and selling some toys. Some people were observed standing, chatting and buying products from the vendors.

Table 6-1 shows that the garden was used by all gender groups and ages, but the presence of men was dominant in general. During weekdays, small groups of elders were noted in the space gathering and chatting whilst sat on the benches, especially in the morning, which recorded 30% males although this declined dramatically in the afternoon and evening. During the weekends, slightly different male percentages were recorded during the morning, evening and night; in morning it was 24%, the afternoon was 19.35% and the evening was 16.22%. Young couples were noted during the afternoon and evening.

El-Khaldin Garden		Weekday			Weekend		
Category	Age	Morning	Afternoon	Night	Morning	Afternoon	Night
Children	< 13	5	6	1	4	9	0
Percentage		11%	11%	4%	8%	16%	0%
Female	13- 18	0	3	0	0	0	0
	18-25	8	12	4	9	6	3
	26-35	5	4	4	4	4	2
	36-45	3	1	0	5	3	1
	46-55	2	1	0	2	3	0
	55+	0	0	0	0	0	0
Total		18	21	8	20	16	6
Percentage		39%	39%	29%	41%	29%	14%
Male	< 18	0	3	0	3	2	4
	18-25	7	9	6	8	4	11
	26-35	2	6	8	3	7	7
	36-45	4	5	3	3	8	4
	46-55	3	2	1	2	4	5
	55+	7	2	1	6	6	6
Total		23	27	19	25	31	37
Percentage		50%	50%	68%	51%	55%	86%
Sum		46	54	28	49	56	43

Table 6-1 Urban users of El-Khaldin Garden during their static activities according to their age group in 3 categories (children, female and males) for weekdays and weekends (morning, afternoon and evening)
(source: the researcher)

One of the most obvious observations was the presence of the females in the evening, which decreased markedly from between 55%-62% during weekdays and between 62.5%-70% during the weekends; this was because of the lack of lighting in the space. As is shown in Figure 5-42 slot (E) and (F) most females in the evening were accompanied by males, either in couples or families; however, no groups of females were observed on their own, potentially caused by the lack of security and triggered by the lighting problem and poor visibility in the space (Figure 6-5). In contrast the weekday mornings and afternoons saw a greater presence of small groups of females, including college students, friends or couples of mothers meeting with children (Figures 6-6 and 6-7). There was a similar pattern with children; it was noticed that children with mothers in the morning included toddlers between the ages of 1 and 4 (pre-school ages), whilst the number increased in the afternoon and the age range changed to between 1 and 12 years old. This was particularly the case during the weekends, whilst they disappeared in the evening during the week. Al-Khaldin Garden in Ramleh Station, in the centre of Alexandria, is one of the oldest gardens, dating back to the 1930s. It is close to the Corniche and witnessed the Revolutions of January 2011 and June 2013 (Figure 4-16 page 133).



Figure 6-5 El-Khaldin Garden in the evening on a weekday. The picture shows the low visibility and inappropriate lighting in the space (source: the researcher,2017)



Figure 6-6 The presence of small groups of female (often mothers) in the afternoon: watching their children sliding on the platform (source: the researcher,2017)



Figure 6-7 The presence of elder users (source: the researcher,2017)

However, recently the space has become less well-regarded amongst Alexandria's residents (Table 6-7 page 240), following resentment from many of the inhabitants towards the poor conditions in the garden, which has changed over time to become poorly maintained and the destination of lawbreakers and street vendors. Nevertheless, the space is usable during the week; there is a distinctive variety of users. The study reveals that the space is more active throughout afternoons during the week, which recorded almost with the same number (54) of users during weekdays as the weekend (56), as it shown in (Figure 6-3 and Table 6-1). The observation also notes that the activities of El-Khaldin during weekdays is generally the same as weekends; thus, the main pattern of utilisation rises in the afternoon and declines in the evening, particularly over weekday evenings, when usage dropped massively by 48.15%, while during the weekend it dropped by only 23.21%.

Despite the poor quality of the space in terms of its physical conditions, furniture and hardscape maintenance, and cleanliness, the garden was still functioning and useable for a number of Alexandria's residents. There was no significant difference between the numbers visiting El-Khaldin Garden on weekdays and weekends. As shown in Table 6-1, the number of users in the afternoon was the highest, while in the morning it was slightly lower. The smallest number was recorded over weekday evenings. From Table 6-1, it appears that the presence of men is more frequent than for women. The average ratio is 60 % men, 32% female and 8% children.

6.2.2 Saed Zaghloul Square

The most likeable and visited space in Alexandria is Saed Zaghloul square with its magnificent view of the sea and the Eastern Harbour. The principal activity observed in the space was sitting; users sat in groups, families and couples or alone on the grassy areas, on the available seats along the paths, on the fence at the edges on the square, on the platforms and steps around the statue or around the fountains (Figures 6-8, 6-9 and 6-13).



Figure 6-8 Saed Zaghloul Square where users were sitting individually or in groups (source: the researcher,2017)



Figure 6-9 Saed Zaghloul Square where families with children were sitting to be protected (source: the researcher,2017)

The users recorded as sitting on the grass were either in large or small groups of friends, or were families with children. Moreover, other individuals or couples were lying flat on the grass from time to time, to relax. Sitting was mostly accompanied by eating, especially for those sitting on the grass, who were primarily families with children having a picnic. Children were observed playing on the green area around their families protected by the fence from the traffic or getting lost (Figures 6-10 and 6-11).



Figure 6-10 Saed Zaghloul Square: Users sitting or lying down for picnic or having rest (source: the researcher,2017)



Figure 6-11 Saed Zaghloul Square: Couples and friends gathering with their children to play and eat (source: the researcher,2017)

Moreover, some of the user groups (families or friends) who were sitting facing the sea view were having a take away snack or sandwiches from the surrounding food shops in the area. Other groups were located on the other side of the Corniche road sitting on the fence/bench and some of them facing the sea view. Others were facing and enjoying the vibrant square view and the statue (Figures 6-12 and 6-13).



Figure 6-12Users sitting on the waterfront opposite Saed Zaghloul Square (source: the researcher,2017)

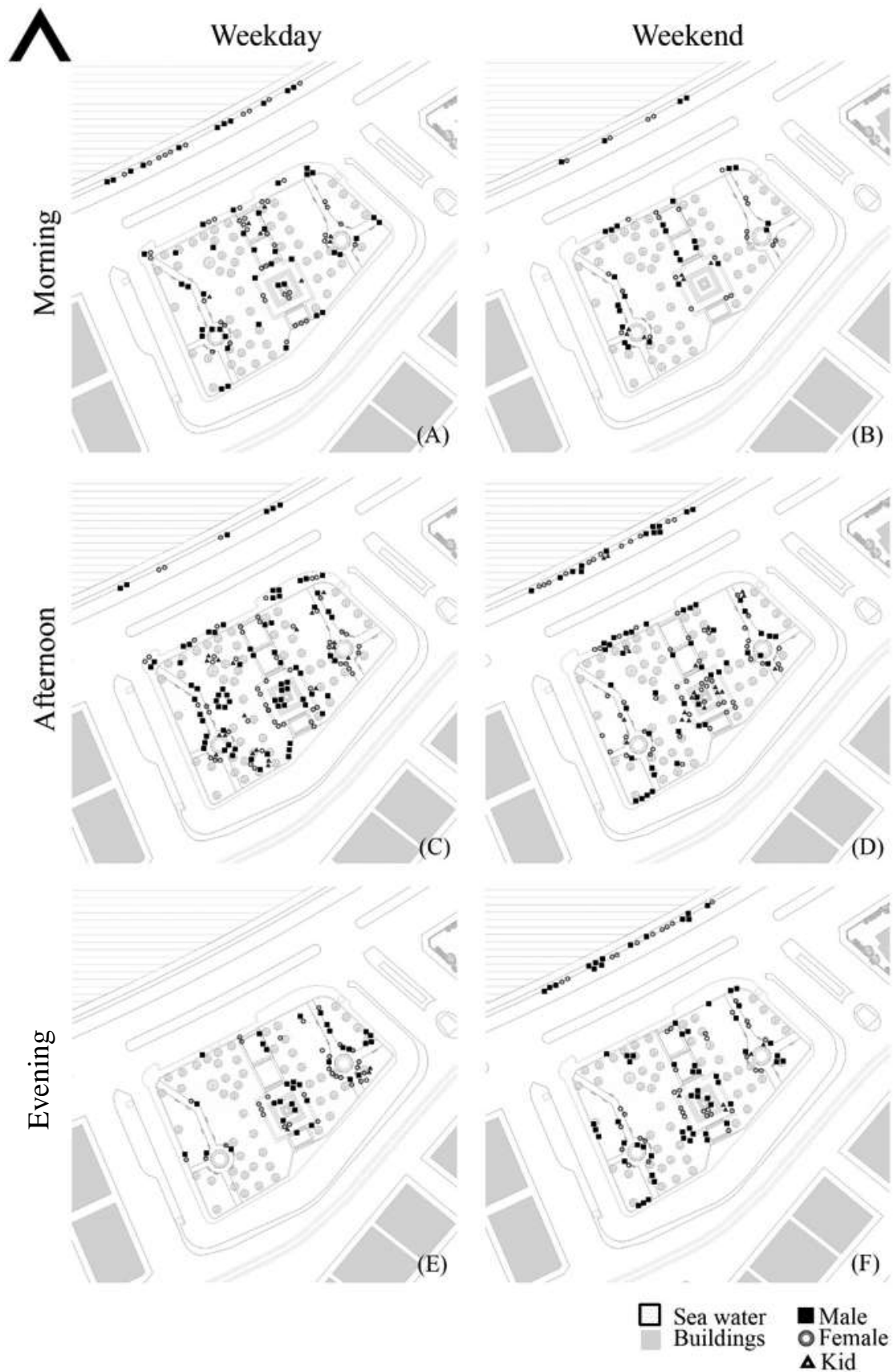


Figure 6-13 Saed Zaghloul Square: Observation mapping during weekday and weekend (morning, afternoon and evening) and legend (source: the researcher)

During the day, people were observed walking through and around the square chatting with each other and taking in the landscape and fresh air. Due to the fence around the square, a small minority of the males passing through the space needed to jump over the fence in order to cross the square. This indicates that the primary function of the square itself is as a destination point, while it is surrounded by its external axis function for those passing by the urban space. Moreover, the pavements adjacent to the square on the Corniche side attracted a large number of both genders, who stood there viewing the scenery, while others wait for transportation (bus and microbus) as the station is located in front of the square.

Others were observed photographing or taking selfies in the centre of the square (Figure 6-14). Some people were noted just standing in groups chatting together or hanging around from the southern entrance near the parking area. Vendors were seen around the square and along the other side of the Corniche road serving different kinds of food and snacks, such as ice cream, grilled corn, cotton candy, lupin beans, baked sweet potatoes, fresca; some people bought from them.



Figure 6-14 Saed Zaghloul Square's central statue where users gather around it and take photos A) Evening and B) Daytime (source: the researcher,2017)

In the weekends afternoons, some street vendors put some *Kilim*, which is a flat tapestry-woven carpet or rug traditionally produced in countries of the former Ottoman Empire, on

the platform near the statue. This is because people who sit on the kilim will buy tea, coffee or lupin beans from the vendors preserving the sitting area while also serving other users in the space (Figure 6-15).



Figure 6-15 Saed Zaghloul Square's street vendors preserving a sitting area A) Morning and B) Evening (source: the researcher, 2017)

The square was used by all ages and gender groups, as shown in Table 6-2, with no dominant gender as the numbers of females and males are almost equal during weekdays. During the mornings and evenings at the weekend, men dominate the space at over 50% (Table 6-2), while in the afternoon females dominate the space at 46%.

The weekday morning groups of friends (students) were observed in the space gathering and chatting, taking photos near the statue and in front the entrance, which functioned as a meeting point, and having breakfast before walking to university. Couples and mothers with children aged between 2 and four were seen mainly in the morning. The afternoons were vibrant during the week when small groups of users visited for lunch or to meet after work or following their studies. The investigation also revealed the preferred location for users; it was noted that families and children were usually located around the statue area and sometimes around the fountains. Many users were attracted by the setting, and it appeared that the presence of these people attracted others to stay in the square (Gehl, 2010), which meant it therefore became a lively place.

Saed Zaghloul Sq		Weekday			Weekend		
Category	Age	Morning	Afternoon	Evening	Morning	Afternoon	Evening
Children	< 13	7	19	3	6	17	5
Percentage		8%	14%	4%	11%	15%	6%
Female	13- 18	0	4	0	0	6	3
	18-25	11	19	14	11	13	18
	26-35	10	15	13	4	17	6
	36-45	7	9	2	2	8	3
	46-55	2	4	2	1	4	4
	55+	7	3	0	2	4	0
Total		37	54	31	20	52	34
Percentage		45%	41%	46%	36%	46%	38%
Male	< 18	2	7	0	3	3	7
	18-25	13	20	13	13	17	26
	26-35	8	10	14	6	5	6
	36-45	6	6	4	3	6	7
	46-55	4	8	2	1	7	5
	55+	6	8	0	3	5	0
Total		39	59	33	29	43	51
Percentage		47%	45%	49%	53%	38%	57%
Sum		83	132	67	55	112	90

Table 6-2 Urban users of Saed Zaghloul square during their static activities according to their age group in 3 categories (children, females and males): Weekdays and weekends (morning, afternoon and evening) (source: the researcher)

The number of people visiting Saed Zaghloul square was noticeably large, especially in the evening. There was no significant difference between weekday and weekends. The most significant number of users was observed in the afternoon; while the number of users in the morning was slightly lower during weekdays and significantly lower at the weekend. The lowest number was observed on Friday, possibly due to the fact that people usually start to go out after the Friday prayer; thus, from the total, the average percentage of men noted during the week was 48%, women were 42%, and children were 10%.

6.2.3 El-Mansheya Square (Mohamed Ali Square and Ahmed Orabi Square)

The dominant static activity in El-Mansheya square was sitting. Users were mainly sitting on the available seating or grass (minority), chatting with each other and relaxing or waiting for someone, doing paperwork, or sitting drinking tea or eating. A few people were observed sitting on the fences of the square from the inside and outside; usually their ages were between 15 and 25 years old. People in small groups, such as friends, couples and families with children, were more observed sitting in Ahmed Orabi space, especially in the middle zone. This tended to occur during the week from morning until evening. Some of the people sitting on the green areas were also lying down from time to time.

As with El-Mansheya square, the most frequently observed activity was walking along the paths in the square of Mohamed Ali and around El-Mansheya space along the long path adjacent to Ahmed Orabi on the left side. However, the cut through for Mohamed Ali was the busiest route; this was due to the transportation hub (bus, microbus and tram) on the northside near the Corniche and the location of all administrative, recreational and commercial entities on the other side. The space always seemed busy and active from the morning and afternoon due to its mixed function as a destination point for some users and as passing area for necessary or optional activities for many others (Figure 6-16).



Figure 6-16 El-Mansheya Square's busy time A) Mohamed Ali Square and B) Ahmed Orabi Square (source: the researcher, 2017)

It was noted that a number of people were standing in groups, greeting and chatting adjacent to the square, therefore using it as a meeting point; meanwhile, others were walking through the square along the paths of Mohamed Ali and Ahmed Orabi to find an appropriate place to sit (Figure 6-17). The dynamic/moveable users are not counted in the observation table (Table 6-3), only static activities. It was also observed that the Monument of the Unknown Soldier (*El-Gondy El-Maghoul*) was only used as a meeting or waiting point for people who were standing; this was due to a new fence around the monument and the lack of available seats. Other activities were observed amongst local street vendors; some were serving tea,

coffee and food, others were selling products such as cigarettes, sunglasses, shoes or watches, whilst the remainder were offering services, such as shoe polishing (Figure 6-18).



Figure 6-17 Walking through El-Mansheya Square (source: the researcher, 2017)



Figure 6-18 El-Mansheya Square's street vendors (source: the researcher, 2017)

The square was used by all gender groups and ages, but the presence of men was dominant throughout the week, where the percentage total fell between 51% and 67%, although the total average percentage was 59% (Table 6-3). Women participated in almost all observed activities as static or dynamic users or street vendors with an average total of 32%.

During the weekdays, it was noted that the static activities were less than the movement flow throughout the space (Figure 6-20 and 6-21); this predominantly occurred and on its external axis, probably because of the location of the square in the heart of the city centre where people were passing by to go to work or to use the administrative facilities, such as the court, law offices, clinics or shops and markets. El-Manansheya is considered a local business centre hub of Alexandria.

El-Mansheya Sq		Weekday			Weekend		
Category	Age	Morning	Afternoon	Evening	Morning	Afternoon	Evening
Children	< 13	4	24	9	31	38	21
Percentage		5%	9%	7%	13%	12%	10%
Female	13- 18	0	11	1	5	9	7
	18-25	2	29	4	21	6	9
	26-35	4	12	13	13	7	13
	36-45	7	9	10	24	40	16
	46-55	4	11	10	10	20	11
	55+	5	8	5	14	21	12
Total		22	80	43	87	103	68
Percentage		28%	31%	32%	36%	33%	31%
Male	< 18	2	18	7	11	15	11
	18-25	6	36	15	29	20	31
	26-35	12	31	20	20	21	23
	36-45	15	37	19	37	43	29
	46-55	12	20	18	9	46	27
	55+	6	8	5	17	25	11
Total		53	150	84	123	170	132
Percentage		67%	59%	62%	51%	55%	60%
Sum		79	254	136	241	311	221

Table 6-3 Urban users of El-Mansheya square (Mohamed Ali and Ahmed Orabi Squares) during their static activities according to their age group in 3 categories (children, females and males): Weekdays and weekends (morning, afternoon and evening) (source: the researcher)

It was also noticed that 19 from the 79 (24%) people recorded were street vendors who were using the space for work and not for social or optional activities, such as leisure. Other users used the seating areas to eat breakfast, read papers or chat with companions. While the weekday morning saw the opposite in terms of a decline in movement flow that increases in the afternoon. El-Mansheya square has a visible and open view that encourages female groups to gather and to meet in the space without a male companion (Figure 6-19).



Figure 6-19 El-Mansheya Square: Females gathering without companions (source: the researcher, 2017)



Figure 6-20 El-Mansheya Square: Observation mapping during weekday and weekend (morning and afternoon) and legend (source: the researcher)

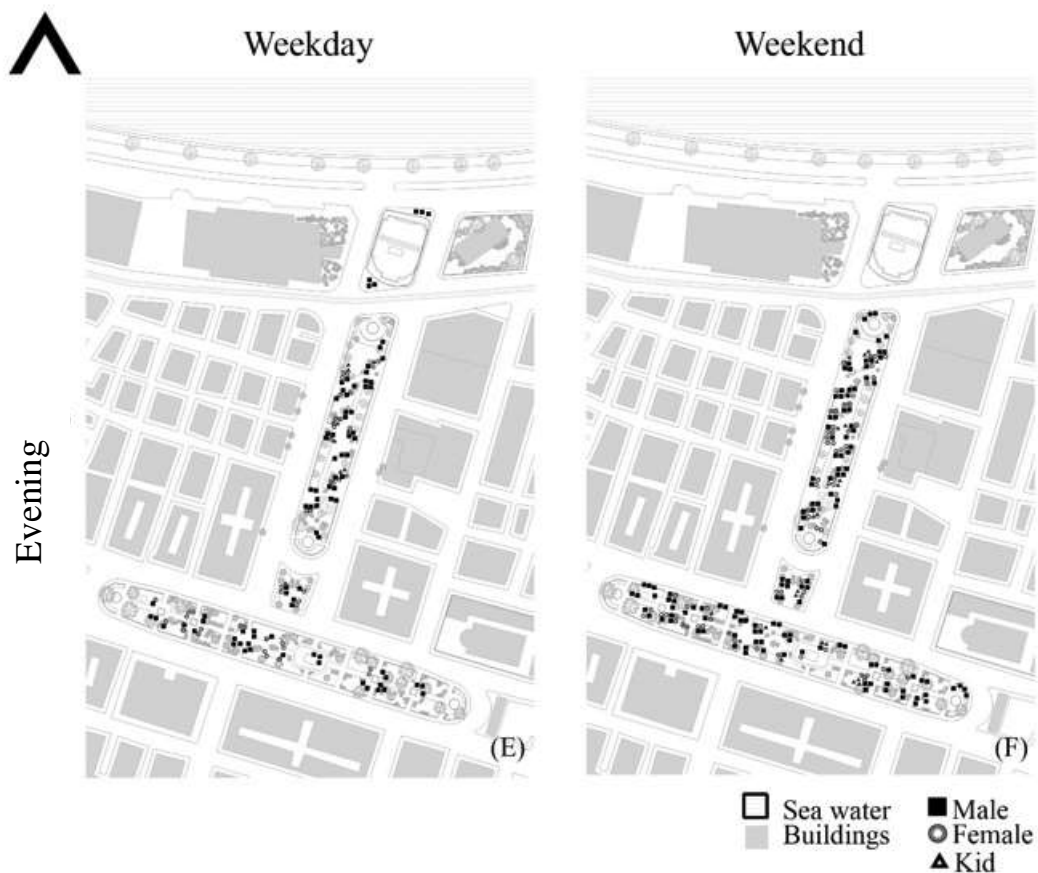


Figure 6-21 El-Mansheya Square: Observation mapping during weekday and weekend (evening) and legend (source: the researcher)

In the weekday afternoons, the space is full of static and dynamic users; it was noted that many users came to the space in a break time to eat and relax. Many females groups gather with children; they were usually located in Mohamed Ali square near the green areas whilst families gather around the statue in the centre of the space. Others were located in the transaction part, while on weekends, children and parents were more likely to be located in Ahmed Orabi square. Many individuals were observed in the space talking on their mobile phones or reading; others were only sitting in the shade (Figure 6-22). In the surroundings of Ahmed Orabi, there are many food and drink shops located on the ground floor where users buy their meal and eat it in the outdoor space.



Figure 6-22 Ahmed Orabi Square: Users in the weekend morning (source: the researcher,2017)

It was also observed from the accents of street vendors and users, that many were not initially from Alexandria; instead, they mainly came from rural areas near Alexandria. Some vendors come mainly for sustenance and to support their income, whilst others come to finish governmental paperwork; this is especially the case during weekdays when they tend to use the space as a waiting area until the time of their transportation to travel back home after achieving the purpose of the visit

The number of children noted demonstrates a significant difference between the weekday and the weekend, especially during the morning and evening (Table 6-3). During the weekdays, four children were recorded while at the weekend 31 children were noted. In comparison, during the weekday evening nine were recorded but this increased to 21 at the weekend.

The largest group of users was observed in the afternoon, while during the weekday morning number the was smaller by 68.9% and in the evening by 46.85%. The weekend morning numbers were higher than in the evening. The highest number recorded was the weekend afternoon at 311 people. The average total number of men recorded during the week was 59%, while women were 32%, and children were 9%

6.2.4 Abu El-Abbas

Of the activities observed around the square, the most frequent users visited the space with children; this was for the local funfair and horse riding that occurred in the street, and mostly within couples or female groups who stood next to the playing area watching the children swinging and playing, as shown in Figure 6-23 (parts B,C,D,E and F) and Figure 6-24.

Other users observed sat on the Corniche side to view the most famous scenery of Alexandria's harbour view with its fishing boats and citadel on one side and the Mosque from the other; this tended to be accompanied with eating and chatting over the platform.

During the afternoon, people gathered and sat at the tables and chairs oriented to the square; these were provided by the coffee and ice creams shops (Figure 6-25).

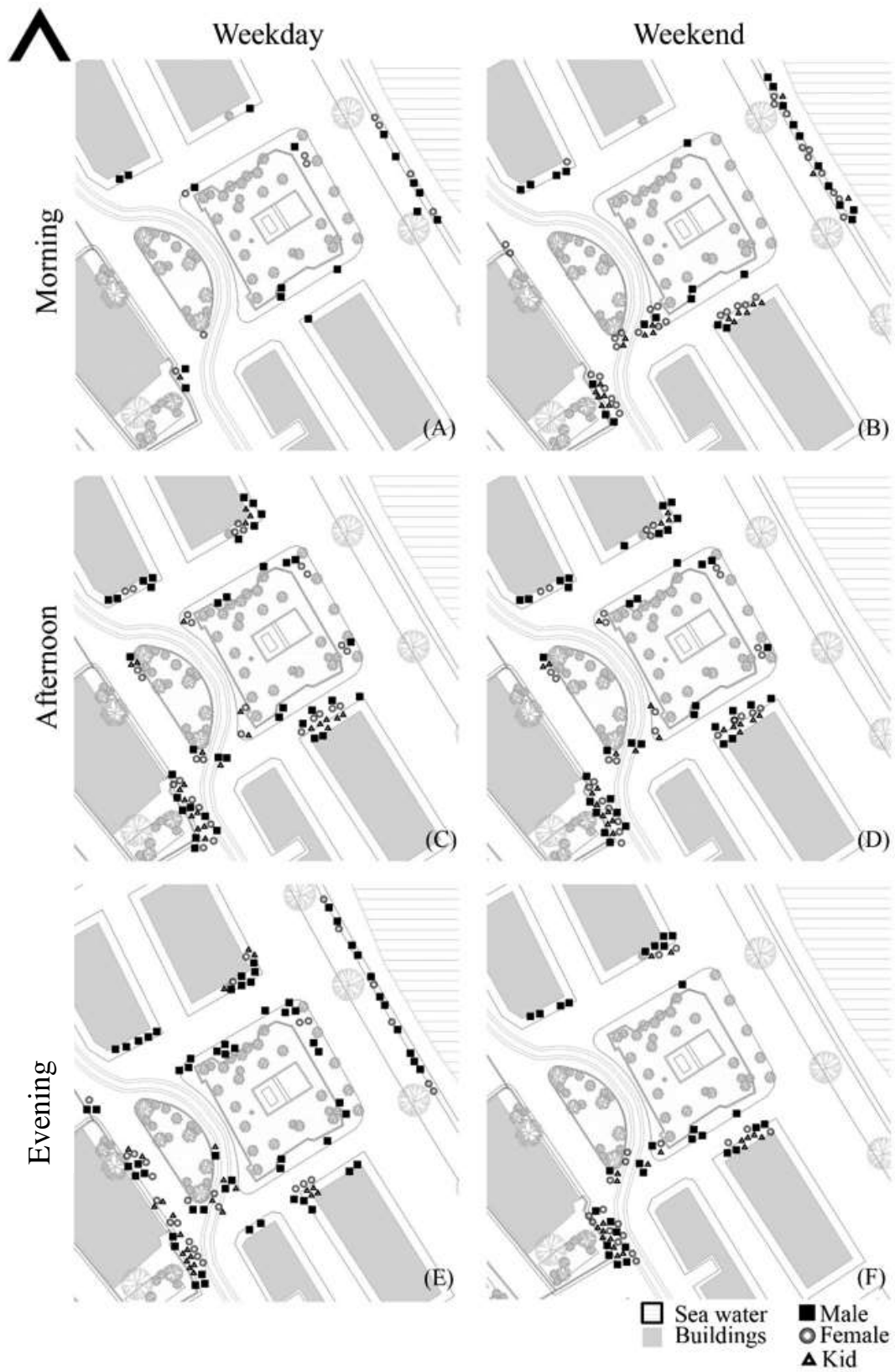


Figure 6-23 Abu El-Abbas Square area: Observation mapping during weekday and weekend (morning, afternoon and evening) and legend (source: the researcher)



Figure 6-24 Abu El-Abbas Square's local funfair: A) Day and B) Evening (source: the researcher, 2017)

Another frequently observed activity was walking; the walking flow around the square tended to be low, except for Fridays when people passed by the external axis of the square from all directions to pray in Abu El-Abbas Mosque. Usually, the highest flow was parallel to the mosque and tram line; this was due to the location of the fish market, food market, restaurants and residential areas. As previously mentioned, only the surrounding areas is useable and not the square itself; thus, some people were observed standing in small groups chatting and hanging around at the corners in front of the Abbasiry Mosque.

The second observation noted that amongst the street vendors on the waterfront many have small wheeled booths that enables them to stop at the focal or most crowded areas depending on the day or seasons (Figure 6-25). Moreover, some people running the local funfair (Mouled) around the mosque visited seasonally but a small number remained permanently in place.



Figure 6-25 Mobile Booths that appear in the Abu El-Abbas area: their location depends on the number of visitors (source: the researcher,2017)

Although the square was used by all ages and gender groups, as shown in Table 6-4, males tended to dominate in number, except for the weekend mornings when females dominated the space at 42% of the total, whilst children comprised 31% and males only 27%.

Abu El-Abbas Sq		Weekday			Weekend		
Category	Age	Morning	Afternoon	Evening	Morning	Afternoon	Evening
Children	< 13	1	17	25	17	23	19
Percentage		6%	25%	26%	31%	26%	29%
Female	13- 18	0	0	2	4	5	3
	18-25	2	10	5	7	9	6
	26-35	1	4	6	5	6	5
	36-45	0	3	5	3	5	2
	46-55	2	2	4	3	4	2
	55+	0	2	0	1	0	0
Total		5	21	22	23	29	18
Percentage		28%	31%	22%	42%	33%	28%
Male	< 18	1	1	6	2	8	7
	18-25	3	6	13	3	8	10
	26-35	4	7	12	5	9	6
	36-45	2	6	8	2	6	1
	46-55	1	5	7	2	4	3
	55+	1	4	5	1	2	1
Total		12	29	51	15	37	28
Percentage		67%	43%	52%	27%	42%	43%
Sum		18	67	98	55	89	65

Table 6-4 Urban users of Abu El-Abbas Square area during their static activities according to their age group in three categories (children, females and males): Weekdays and weekends (morning, afternoon and evening) (source: the researcher)

The area is a touristic space due to the presence of the mosque that was designed by an Italian architect. This is why there a presence of cabriolet carriages in front of the square; these

take visitors on a promenade of the Eastern Harbour waterfront between the Citadel and the Bibliotheca Alexandrina (Figure 6-26).



Figure 6-26 The Cabriolet carriage as a touristic transportation on the waterfront of Alexandria between the Citadel and the Bibliotheca Alexandrina (source: the researcher,2017)

There was a significant difference between the number of users visiting the space of Abu El-Abbas Square during the weekday mornings, afternoons and evening, as shown in Table 6-4. The numbers visiting in the evening were the most significant, while in the morning these were dramatically lower. The most significant number recorded 98 people on a weekday evening, probably because it was a Thursday night. This is one of the busiest days in general in Alexandria because it marks the end of the weekday when most residents go out to meet friends and have dinner outside. Thus, the number jumped from 18 users in the morning to 98 users around the square. The inner space of the square was not used with the same frequency at such times (Figure 4-46 page 148), due to the presence of well-known local restaurants surrounding and near the square and the local funfair; thus, the area attracted users and visitors these days.

The weekend (Friday) recorded the most significant number at 89; this was due to people using Abu El-Abbas Mosque for Friday prayer. However, the number recorded during the weekend morning (18) increased from the weekday (55). The difference was recorded in the far higher presence of woman and children during weekend mornings (as seen in Table 6-4). The table indicates that, usually, men dominate the space, except for weekday mornings when men are in the minority.

6.3 Users' Reaction to Public Spaces (Attitude Survey)

This section reviews and analyses the results of the closed-ended questionnaire explained in Chapter 4, under sections 4.4.2.4 and 4.4.2.5. The survey questionnaire was conducted by the researcher and partially distributed online to Alexandria's residents; others were randomly selected from domestic urban users who regularly visited the selected public square and the city centre of Alexandria and aimed to gather their perceptions of the built environment in the Eastern Harbour of Alexandria, and particularly regarding the squares. Participants were given two months to respond to the survey and were offered the opportunity to contact the researcher for any clarification. The expectation was that all participants had experienced Alexandria's city centre. Participants in the survey responded to various questions that covered many factors, such as visual preferences, and functional (contextual and morphological), social, and perceptual aspects. The interpretation of the survey responses varied, considering both global aspects to more specific personal points, based on how the users perceived and appreciated the squares and environment. The significance of any response is indicated by the level of its frequency throughout Tables , which summarise the answers to the questions.

This part first discusses the compiled answers to the questions; the participants' responses, are presented in tables and graph charts to provide an indication of the most important responses. The answers to the questionnaire were divided into five sections, starting with the background questions collected from about 288 respondents. This was followed by their visual preferences then information about the functional aspects, followed by the social aspects, and finally the perceptual aspects.

The city of Alexandria is used as a case study and an example of a port city; within which five main squares were specified for analysis; Saeed Zaghloul Square, El-Khaldin Garden, Abu-El-Abbas Square, Mohamed Ali Square, and Ahmed Orabi Square. As both; Mohamed Ali Square, and Ahmed Orabi Square lie within El-Mansheya of Alexandria city, sometimes they are referred to as one place in the current research.

6.3.1 Respondents

To gather an insight into the demographics of the participants in this study, the frequency of each of the demographic questions was calculated. Table 6-5 displays such frequencies, and shows that 52% of the total participants were male, and 48% were female. The age range of the participants lay between 19 and 55+; however, the majority were between 26 and 35,

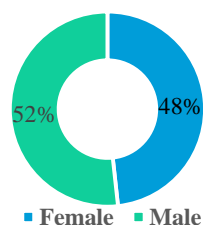
which comprised 39% of the total sample. Moreover, 25% of the total were aged between 36 to 45, whereas 14% were between 19 to 25, 12% between 46 to 55, and the lowest percentage at 10% belonged to the 55+ age group (Figure 6-27 and 6-28).

As for the city of origin, the majority of the participants were from Alexandria at 88% of the total; while the lowest percentage were from areas classed as “Rural around Cairo” at 0.3%. In terms of their employment status, 41% were employed (private business), 19% were employed (in public/government organisations), 16% were self -employed, 9% were students, 9% were unemployed, and finally only 6% were retired (Figure 6-29).

Gender	Frequency	Percent	Total
Male	149	52%	288
Female	139	48%	
Age Range			
19-25	40	14%	288
26-35	113	39%	
36-45	73	25%	
46-55	33	12%	
55+	29	10%	
City Origin			
Alexandria	253	88%	288
Cairo	14	5%	
Rural areas around Alexandria	6	2%	
Rural areas around Cairo	1	0%	
Others	7	2%	
Foreigner	7	2%	
Employment Status			
Student	26	9%	288
Employed (Public/Government)	54	19%	
Employed (Private)	118	41%	
Self -employed	46	16%	
Unemployed	26	9%	
Retired	18	6%	

Table 6-5 Frequency table for demographics (source: the researcher)

Percentage of Gender



Percentage Age Range

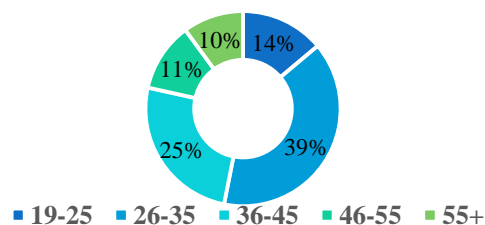


Figure 6-27 Frequency chart for demographics showing the gender and age range percentages (source: the researcher)

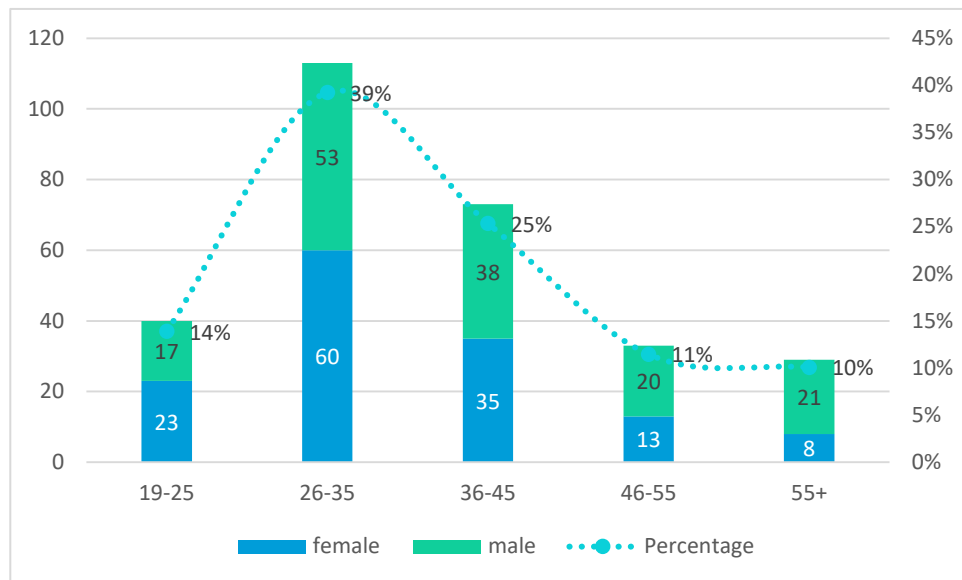


Figure 6-28 Chart showing the range by gender and percentage total (source: the researcher)

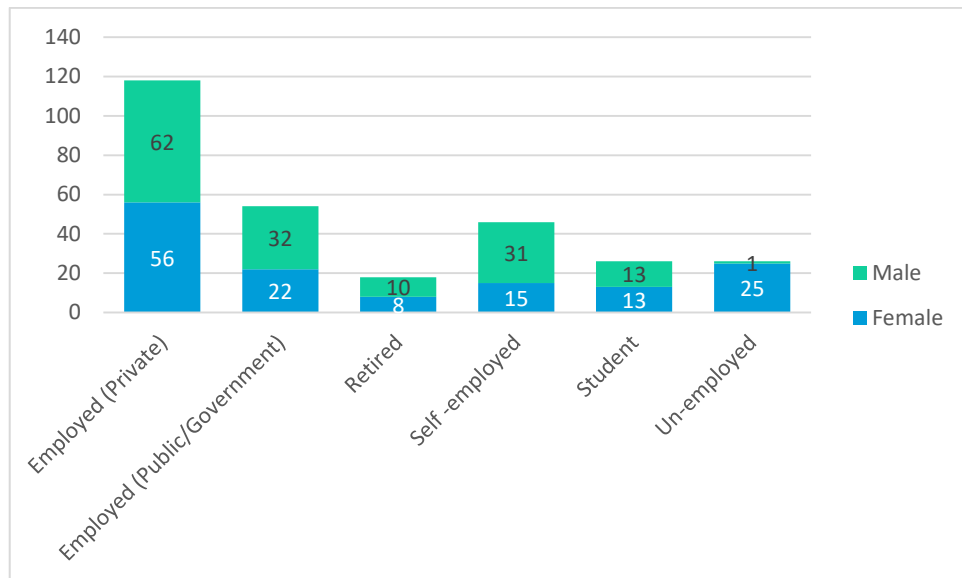


Figure 6-29 Chart showing the employment status by gender (source: the researcher)

6.3.2 Visual Preferences

This part combines 11 questions about the selected public spaces, and each question is analysed separately. These questions aim to reveal respondents' perceptions of the squares and built environment. The first question (Q5) asked the respondents of Alexandria to arrange in order the urban spaces that they like from the most (1) to the least (5).

Order	El-Khaldin	Saed Zaghoul	Mohamed Ali	Ahmed Orabi	Abu El-Abbas
1	34	137	54	11	52
2	50	67	94	51	26
3	22	45	73	99	49
4	40	30	46	92	80
5	142	9	21	35	81
Grand Total	288	288	288	288	288

Table 6-6 Spaces that participants liked the most (source: the researcher)

From Table 6-6 and Figure 6-30, it is clear that all respondents in the survey answered this question. The square most frequently selected as the most likeable was Saed Zaghoul at 48% of the total 288 participants. Mohamed Ali and Ahmed Orabi squares (El-Mansheya) followed this at 33% and 34% respectively. Abu-El Abbas square was the fourth most frequently listed at 28%, whilst the majority (49%) ranked El-Khaldin Garden in last place. As shown in Figure 6-30, it is clear that the participants agreed that Saed Zaghoul Square was the most likeable and El-Khaldin garden was the least preferred. This result was anticipated from the previous research findings.

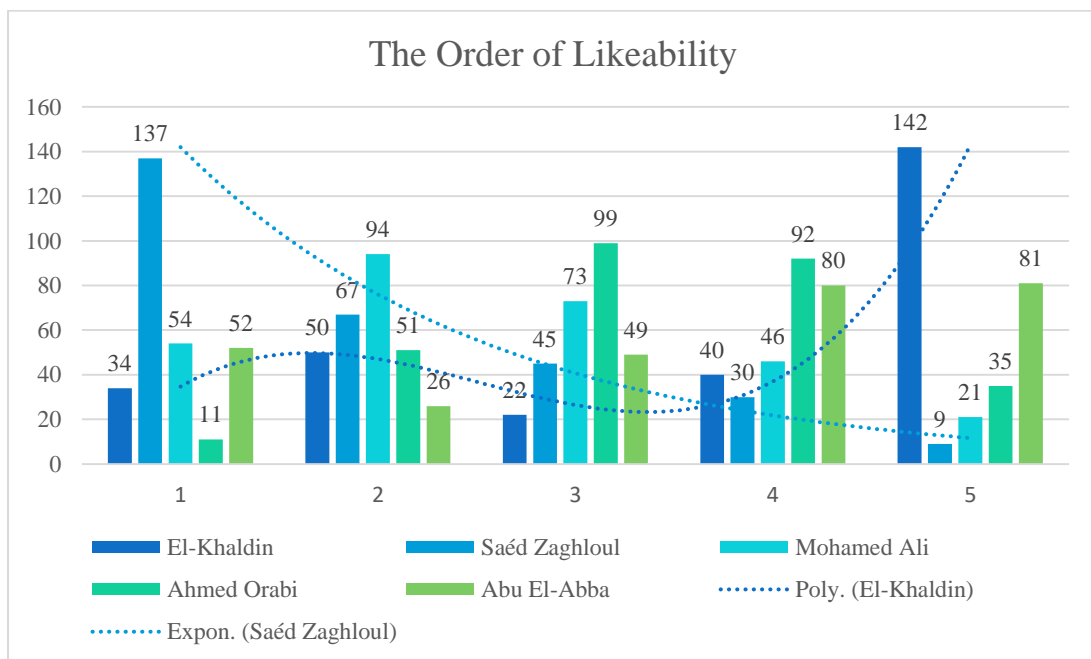


Figure 6-30 Chart showing the order of spaces that participants liked the most (source: the researcher)

The second question (Q6) required each participant to select three spaces from the five squares that they felt represented the city of Alexandria. The answers are shown in Table 6-7 and Figure 6-31, and are concentrated on Saed Zaghoul square (at 88%) and Mohamed Ali square and Abu-El Abbas square at 73% each. This result was not unexpected, as these

spaces are known to have been involved in the transformation of Alexandria, its history and its identity.

Public space	Count	Percentage
El-Khaldin Garden	43	15%
Saed Zaghloul Square	253	88%
Mohamed Ali Square	210	73%
Ahmed Orabi Square	142	49%
Abu-El-Abbas Square	210	73%

Table 6-7 Spaces that participants thought represented the city of Alexandria (source: the researcher)

While most of the residents of Alexandria combined El-Mansheya square as one public space, Ahmed Orabi square - one of the oldest squares - was ranked in fourth place at 49%, followed by El-Khaldin at 15%.

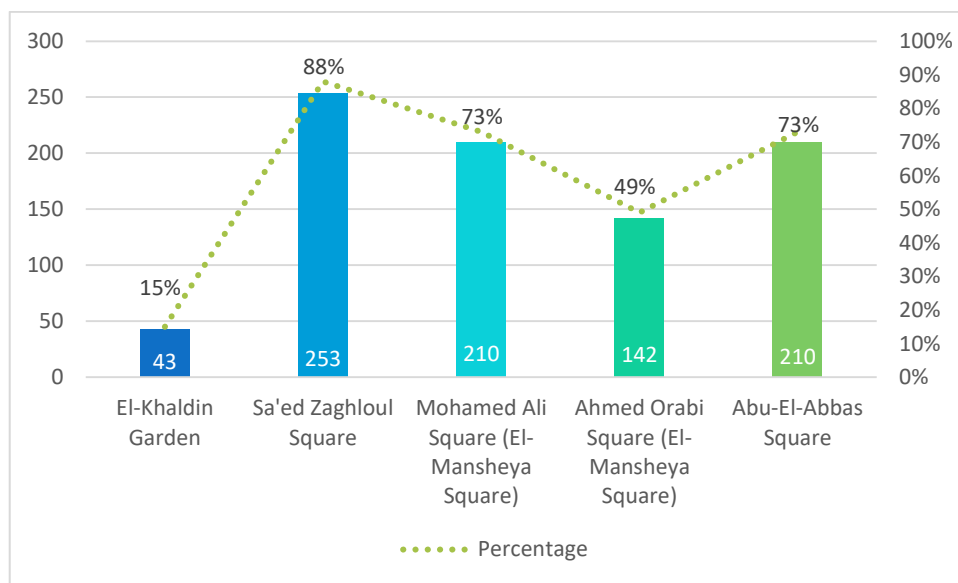


Figure 6-31 Chart showing the spaces representing the city of Alexandria (source: the researcher)

The next question (Q7) asked respondents to note the reasons for their selection. The nature of the question required a degree of knowledge about Alexandria city and its urban history and character; nevertheless, respondents showed a good understanding of the city. The public spaces were most frequently mentioned as important in the way they combined to form the character of the city and, to Alexandrians, those that represent the image of the city were Saed Zaghloul, Mohamed Ali and Abu El-Abbas.

Saed Zaghloul and Mohamed Ali (El-Mansheya) have a particular importance to people in Alexandria, due to their location in the heart of the city centre in addition to their historical significance. Participants also mentioned their importance as landmarks of the city that attracted both locals and tourist for its panoramic view of the waterfront. Specifically, this included Saed Zaghloul square and its architectural characteristics. Their historical

importance was the most cited reason given by participants concerning the importance of the oldest square, Mohamed Ali, and its monument that shaped the modern city. The location also emerged as a strong reason among participants, because all of the public urban squares are located on the seashore waterfront of the Eastern Harbour, which is considered the heart of Alexandria. The distinctive architectural character of the surrounding buildings with their European styles helps to enrich the spatial character, while the iconic feature of the Mohamed Ali Statue in El-Mansheya, Saed Zaghloul statue and the iconic Abu El-Abbas mosque leave a significant imprint on people's memory and function as a reminder of Alexandria's previous mixed culture and identity. Due to its religious spirit and design, participants also mentioned Abu El-Abbas. In addition, people revealed other reasons that contributed to the image of the city, such as those related to a certain era, memories of iconic person in Alexandria's history, its uniqueness due to its size within the city, the view that it is the most famous public space to represent Alexandria and has been used in old postcard souvenirs since its creation. Moreover, political reasons were also cited, such as the January 2011 Revolution, and personal reasons were given.

Participants (Q8) were also asked to select three spaces that they visit the most for different purposes. This was followed by (Q9) that asked them to select all the applicable reasons for their visits to each square; this helped to analyse any connection. Table 6-8 shows the respondents' selections and the three leading highlighted squares in order show that Saed Zaghloul square was picked by 267 participants, Mohamed Ali square by 235 and Ahmed Orabi dropped to 181 participants. Then a dramatic decline is shown for Abu El-Abbas (96), whilst El-Khaldin was only selected by 82 participants, as shown in Figure 6-32.

Public space	Count	Percentage
El-Khaldin Garden	82	28%
Saed Zaghloul Square	267	93%
Mohamed Ali Square	235	82%
Ahmed Orabi Square	181	63%
Abu-El-Abbas Square	96	33%

Table 6-8 The most visited spaces for different purposes (source: the researcher)

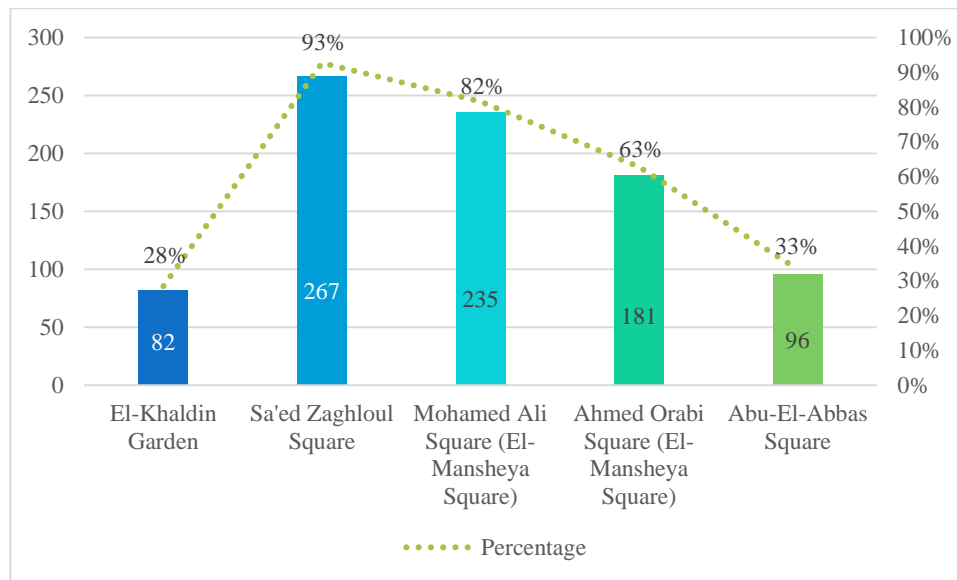


Figure 6-32 Chart shows the percentage of the spaces visited the most for different purposes (source: the researcher)

Table 6-9 shows the purposes that are most frequently selected for each square and the highlighted cells indicates that the nomination of the three most popular exceeded 40%. At 77%, it is clear that the primary usage of Abu El-Abbas Square is for religious purposes, while the combined square of El-Mansheya is more related to commercial visits at 73% (shopping), followed by administrative at 66%, work at 61%, and for other purposes plus to attend events at 43%. Saed Zaghloul Square and El-Khaldin Garden share three common purposes for visitation, with various participant nominations that lean slightly more towards Saed Zaghloul. The three purposes are; leisure and relaxation at 62% (Saed Zaghloul) and 54% (El-Khaldin), recreational at 56% (Saed Zaghloul) and 49% (El-Khaldin), and finally meeting friends and social purposes at 70% (Saed Zaghloul) and 47% (El-Khaldin). Additionally, Saed Zaghloul was also cited for commercial and shopping use at 69%, while El-Khaldin is also used for religious events, at 47%.

The purposes of the visit to each square	El-Khaldin Garden	Saed Zaghloul	El-Mansheya	Abu-El-Abbas
Shopping	13	198	211	11
Work	29	91	176	11
Administrative	32	80	191	13
Relaxation	155	178	42	73
Recreational	140	162	44	78
Attending an event	91	71	125	70
Meeting friends	136	201	66	59
Religious participation	136	12	6	222

Table 6-9 Applicable purposes/reasons for visiting each square (source: the researcher)

The respondents were requested (Q10) to select three spaces from the five that they pass by the most, and (Q11) to give the reason/s (which was optional). Table 6-10 reveals the most commonly selected spaces by age group and total. It is clear that 94% pass by Saed Zaghloul square, 78% by Mohamed Ali and 65% pass by Ahmed Orabi. The users mentioned several reasons, and the most common are that they are on the way to, or nearby, work. Other reasons include the shopping and dining areas due to its location on the Corniche avenue and the city centre, whilst others mention the public transportation routes as trams pass by this space. However, this is considered under the umbrella of ‘on the way’ or in the ‘same direction’ as events in their normal life. From Table 6-10 and Figure 6-33, it shows that the age group (19-25) place El-Khaldin in the top three and the reasons mentioned were its proximity to the University and Library, and its connection to transportation routes.

Public space	19-25	26-35	36-45	46-55	55+	Total	Percentage
El-Khaldin Garden	25	47	32	7	9	120	42%
Saed Zaghloul Square	40	105	66	31	28	270	94%
Mohamed Ali Square	30	87	59	26	23	225	78%
Ahmed Orabi Square	21	70	50	26	20	187	65%
Abu-El-Abbas Square	4	30	12	9	7	62	22%

Table 6-10 Spaces that participants passed by most (source: the researcher)

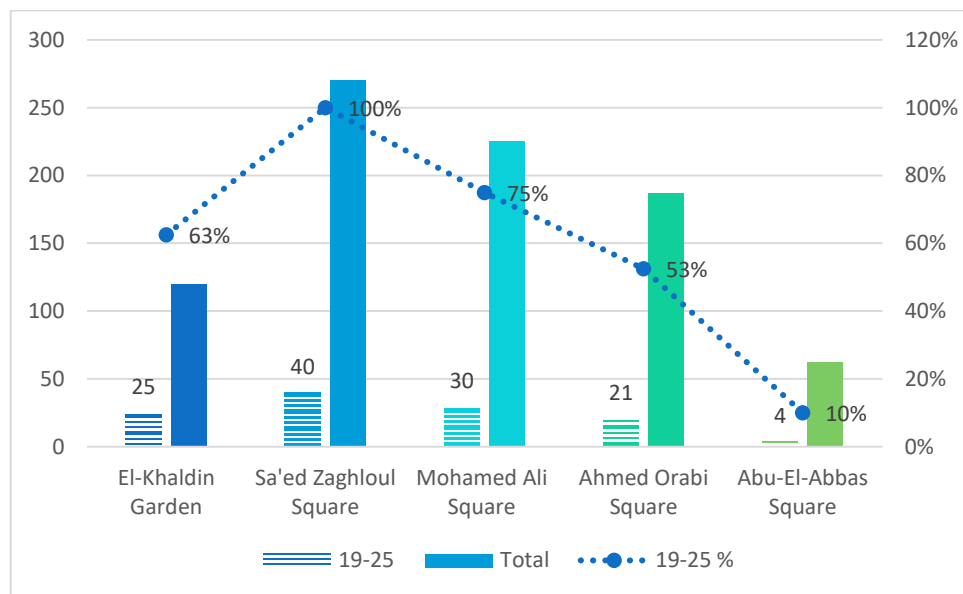


Figure 6-33 Chart, with percentages, shows spaces that participants aged 19-25 passed the most (source: the researcher)

From Q12 to Q16, the respondents were asked to select against a set of qualities to describe the five spaces in accordance with their perceptions (possible responses included Yes/No/Neutral). Figure 6-34 shows that the five squares, in general, have more positive relevant qualities. However, it also illustrates that 82% of the participants approved and

confirmed that Saed Zaghoul has more positive qualities, while El-Khaldin, Mohamed Ali and Orabi were between 62%, 63% and 65% respectively; However, Abu El-Abbas was only just considered positive at 53%.

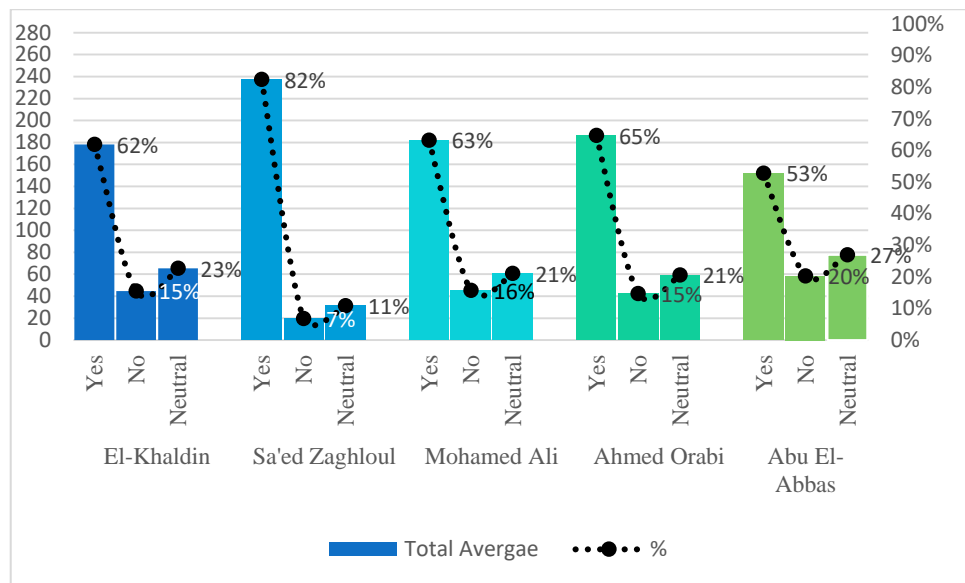


Figure 6-34 Chart showing the percentage total of participants giving a positive, negative or neutral (Yes/ No/ Neutral) evaluation of each square (source: the researcher)

Table 6-11 presents the number of answers indicating yes, no or neutral to Mohamed Ali, Ahmed Orabi and Abu-El Abbas, whilst Table 6-12 illustrates the responses to Saed Zaghoul and El Khaldin.

Adjective	Mohamed Ali			Ahmed Orabi			Abu El-Abbas		
	Yes	No	Neutral	Yes	No	Neutral	Yes	No	Neutral
Attractive	184	37	67	214	29	45	97	65	126
Active	270	5	13	265	9	14	225	27	36
Relaxing	78	109	101	83	93	112	69	104	115
Simple	191	46	51	208	38	42	218	39	31
Familiar	270	5	13	264	7	17	242	17	29
Motivating	173	53	62	169	50	69	156	56	76
Pleasing	146	51	91	161	53	74	105	62	121
Iconic	254	9	25	254	10	24	172	37	79
Inviting	173	40	75	181	40	67	174	57	57
Usable	207	33	48	201	39	48	174	57	57
Clean	57	110	121	50	97	141	39	122	127

Table 6-11 Features describing Mohamed Ali, Ahmed Orabi, and Abu El-Abbas Squares (source: the researcher)

It is clear that the majority of the qualities in Table 6-11 and Figure 6-35 have a positive response. By analysing the answers, the majority described Mohamed Ali Square (El-

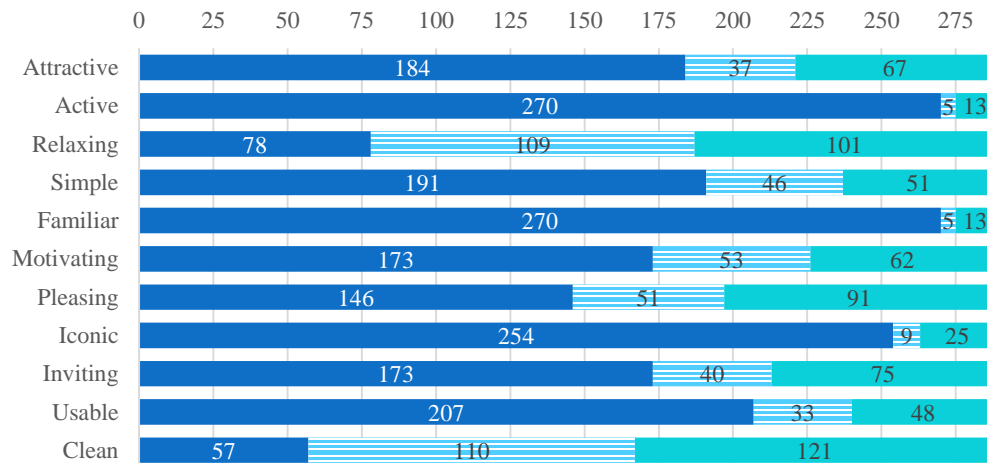
Mansheya) as an active, familiar and iconic square. However, when participants were asked to describe Ahmed Orabi Square (El-Mansheya), it was found that they highly ranked active, familiar, iconic, and attractive. Furthermore, for Abu-El-Abbas Square the majority described it as a familiar and active place. However, the participants do not find the three public spaces relaxing; notably for Mohamed Ali square, the majority (38%) selected that it was not relaxing and 35% selected neutral; meanwhile, for Ahmed Orabi and Abu El-Abbas, the respondents tend to select neutral at 39% and 40% respectively. Nevertheless, a minority selected 'yes' at 29% and 24% respectively. Moreover, the previous three public spaces were similar in terms of cleanliness, for which the most frequent answer was 'neutral' at 42% (Mohamed Ali), 49% (Ahmed Orabi) and 44% (Abu El-Abbas), whilst the minority selected 'yes' at 20%, 17% and 14%. Also, Abu El-Abbas had two other adjectives that were scored neutral', namely attractive at 44% and pleasing at 42%.

Adjective	El-Khaldin			Saed Zaghloul		
	Yes	No	Neutral	Yes	No	Neutral
Attractive	154	47	87	270	8	10
Active	172	52	64	266	6	16
Relaxing	205	40	43	219	40	29
Simple	231	25	32	240	22	26
Familiar	220	20	48	274	4	10
Motivating	155	53	80	218	22	48
Pleasing	181	50	57	229	20	39
Iconic	113	75	100	264	7	17
Inviting	168	44	76	223	16	49
Usable	181	42	65	226	25	37
Clean	180	42	66	181	44	63

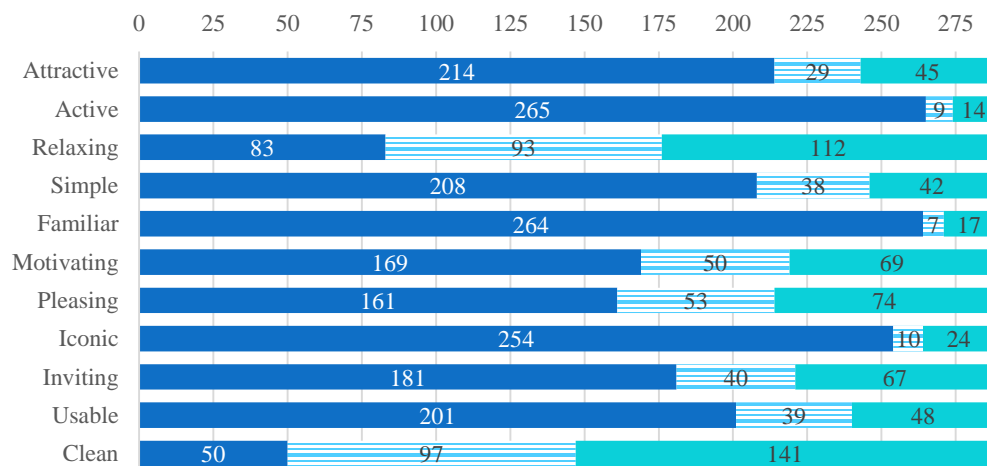
Table 6-12 Features describing El-Khaldin and Saed Zaghloul Squares (source: the researcher)

Table 6-12 and Figure 6-36 represent the qualities selected for Saed Zaghloul and El-Khaldin, and it is clear that, overall, the majority of participants nominated a positive set of qualities to describe the two spaces. Moreover, when participants were asked to describe El-Khaldin Garden, the majority described it as simple, familiar and relaxing. Also, the majority described Saed Zaghloul Square as familiar, attractive, iconic and an active place.

Mohamed Ali (El-Mansheya)



Ahmed Orabi (El-Mansheya)



Abu El-Abbas

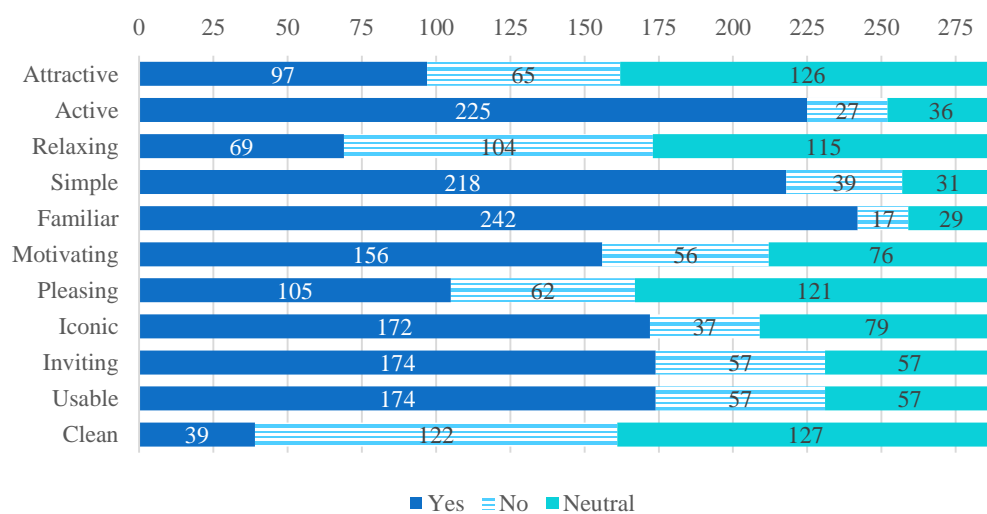
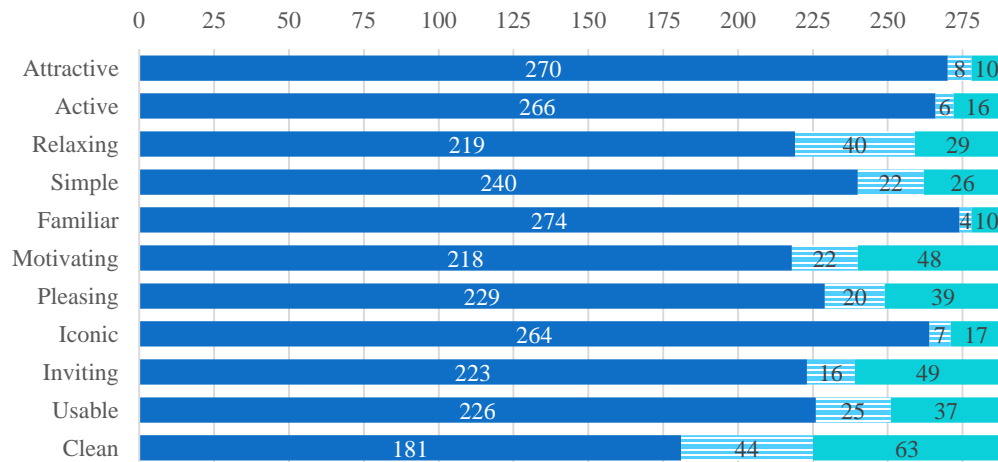
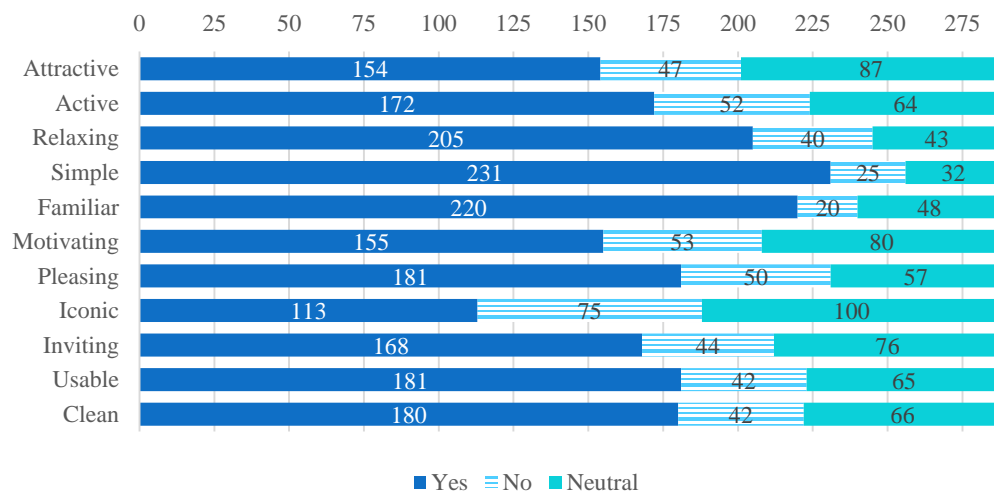


Figure 6-35 Charts showing the set of qualities and participants responses for Mohamed Ali, Ahmed Orabi and Abu El-Abbas Squares (source: the researcher)

Saed Zaghloul



El-Khaldin



§

Figure 6-36 Charts showing the set of qualities and the participants responses for Saed Zaghloul and El-Khaldin Squares (source: the researcher)

The last question (Q17) in the section on visual preferences asked participants to select a minimum of two reasons that prevent their presence in the selected public spaces. Table 6-13 reveals the number received for each quality, and the main reasons in general that prevent users visiting or using a public space. One of the most important qualities that 82% of participants sought was the quality of the seating areas followed by the lack of, or poor quality, landscape in the space, and the lack of available entertainment around or near the space (as selected by more than the 50% of the respondents).

Answer	Count	%
1. Lack of, or poor quality, natural/artificial landscape in the space	158	55%
2. Lack of available entertainment around/near the space	154	53%
3. Not having a feeling that you are attached to the space	91	32%
4. Unsuitable space and elements to create a social space	131	45%
5. Unsuitable and poor-quality seating areas	236	82%
6. Low probability of forming social relationships and contacts	100	35%
7. Space invisibility and the lack of feeling safe	121	42%
8. Lack of various activities in the public space	93	32%
9. Absence of people in the space (empty)	16	6%
10. Absence of different gender and age groups	54	19%

Table 6-13 The most important qualities which prevent participants' presence in the selected public spaces: detailed in number and percentage (source: the researcher)

6.3.3 Functional Aspects

When considering the functional aspects, the research addressed several contextual points; its popularity as a central location (Q18), a meeting point (Q19), free accessibility (Q20), unique morphological aspects (Q21), easily remembered (Q22), and containing distinct features (Q23).

6.3.3.1 Contextual Aspects

Table 6-14 shows the users' selection regarding the four squares when considering the contextual aspect, where 1: Strongly agree, 2: Somewhat agree, 3: Neither agree nor disagree, 4: Somewhat disagree, 5: Strongly disagree. The participants were required to rate the four public squares (in questions Q18, Q19 and Q20). It was found that users perceive El-Mansheya and Saed Zaghloul as popular central locations, a meeting point, and a freely accessible space, as a relatively high percentage of user responses were 'strongly agree' (or 1), as shown in Table 6-14 and Figure 6-37. El-Mansheya Square records 'strongly agree'

at 87% (Q18), 83% (Q19) and 74% (Q20), whilst Saed Zaghloul also records ‘strongly agree’ at 83%, 82% and 75% for the same three questions, respectively. Additionally, the user response percentages for El-Khaldin and Abu El-Abbas accord with the ‘somewhat agree’ response (at 2) as shown in Table 6-14 and Figure 6-37. However, El-Khaldin recorded 43% and 48% for Q20 as ‘strongly agree’ was most selected under ‘freely accessible’; however, this was only 52% compared to Mohamed Ali and Saed Zaghloul squares, as shown in Figure 6-37. Meanwhile, Abu El-Abbas lies in the ‘somewhat agree’ response category for the three questions with an average of 38%.

Contextual Aspect				
Score	El-Mansheya	Sa'ed Zaghloul	El-Khaldin	Abu-El-Abbas
Central Location				
1	250	238	102	91
2	28	40	123	113
3	5	8	50	54
4	2	0	10	22
5	3	2	3	8
Destination or passing by node				
1	238	236	76	73
2	33	42	137	102
3	9	5	51	74
4	4	3	15	30
5	4	2	9	9
Freely accessible				
1	214	215	151	95
2	48	48	85	110
3	8	11	21	52
4	12	10	21	18
5	6	4	10	13

Table 6-14 The numbers of users’ selections regarding the contextual aspects for the selected spaces (source: the researcher)

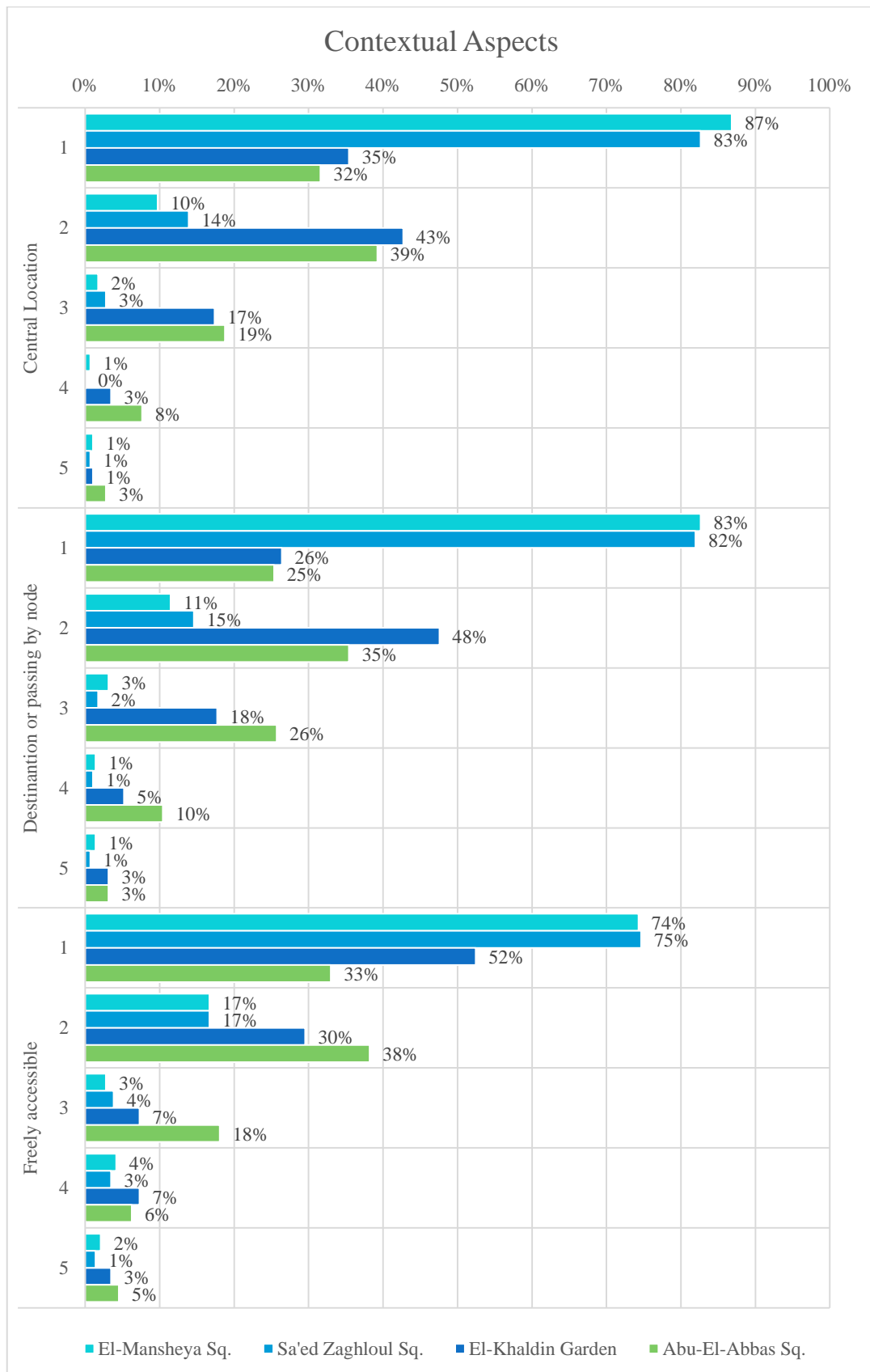


Figure 6-37 Chart shows the users' selection percentage regarding the contextual aspects for the selected spaces (source: the researcher)

6.3.3.2 Morphological Aspects

Table 6-15 presents the users' responses regarding the functional morphological aspects of the selected squares; responses were given in the form of Yes/No answers.

Age Groups	El-Mansheya		Saed Zaghloul		El-Khaldin		Abu-El-Abbas	
(Q21)Unique	Yes	No	Yes	No	Yes	No	Yes	No
19-25	35	5	30	10	8	32	17	23
26-35	97	16	82	31	29	84	56	57
36-45	64	9	53	20	19	54	36	37
46-55	31	2	26	7	7	26	19	14
55+	24	5	23	6	7	22	24	5
Total %	87%	13%	74%	26%	24%	76%	53%	47%
(Q22) Easily remembered								
19-25	37	3	39	1	20	20	31	9
26-35	109	4	109	4	57	56	91	22
36-45	68	5	67	6	25	48	57	16
46-55	32	1	32	1	11	22	28	5
55+	27	2	29	0	11	18	26	3
Total %	95%	5%	96%	4%	43%	57%	81%	19%
(Q23) Distinct features								
19-25	38	2	36	4	14	26	16	24
26-35	105	8	92	21	33	80	58	55
36-45	70	3	64	9	25	48	40	33
46-55	32	1	26	7	10	23	20	13
55+	27	2	25	4	13	16	21	8
Total %	94%	6%	84%	16%	33%	67%	54%	46%

Table 6-15 Users' selections regarding the morphological aspect for the selected spaces by age group
(source: the researcher)

Alexandria's inhabitants responded to Q21, Q22 and Q23, which asked: "Do they consider any of these public space as unique, easy to remember and contains distinctive features?" Respondents could offer 'Yes' or 'No' answers; if the participant selected 'Yes' for a public space, that would lead them to the sub questions that asked them to rate their reasons for the uniqueness, ease of remembrance and distinction. It was found that users perceive El-Mansheya, Saed Zaghloul and Abu El-Abbas squares as unique, easy to remember and distinct spaces, as a relatively high percentage of responses were 'Yes'. This was especially relevant for El-Mansheya that scored significantly high: 87% (Q21), 95% (Q22), and 94% (Q23). In comparison, Saed Zaghloul square recorded 74%, 96% and 84% respectively, while Abu El-Abbas fluctuated at 53%, 81% and 54%. These are shown in Figure 6-38 that also illustrates the spaces are firstly, easy to remember, secondly, have distinct features, finally, are unique.

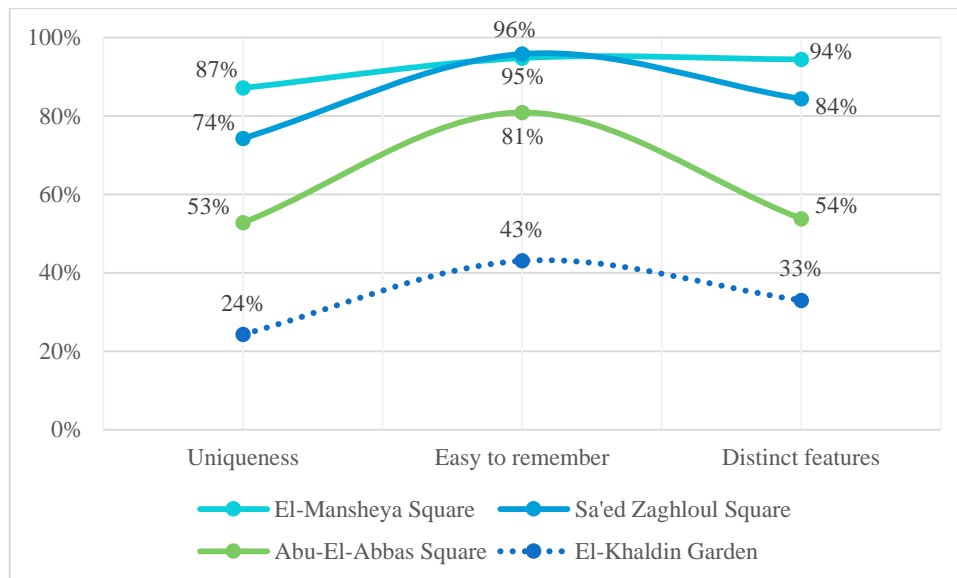


Figure 6-38 The 'Yes' percentage for the squares (source: the researcher)

Tables 6-16, 6-17 and 6-18 illustrate the responses for the three squares where the majority selected 'Yes'. They reveal the users' selections regarding the reasons for their uniqueness, ease of remembrance and distinction, where 1: Strongly agree, 2: Somewhat agree, 3: Neither agree nor disagree, 4: Somewhat disagree, 5: Strongly disagree.

(Q21) Uniqueness			
Score	El-Mansheya	Sa'ed Zaghloul	Abu-El-Abbas
(A) Large Square			
1	205	58	30
2	22	109	71
3	14	35	31
4	4	5	10
5	6	7	10
(B) Nice view			
1	142	163	65
2	71	33	60
3	24	9	17
4	8	4	7
5	6	5	3
(C) Located by the sea			
1	178	176	109
2	35	17	25
3	18	7	7
4	12	4	7
5	8	10	4
(D) One of the oldest squares			
1	207	115	109
2	28	67	25
3	9	21	9
4	1	5	5
5	6	6	4

Table 6-16 Reasons for the uniqueness of the selected spaces (source: the researcher)

(Q22) Ease of Remembrance			
Score	El-Mansheya	Sa'ed Zaghloul	Abu-El-Abbas
(A) Relate to Cosmopolitan History			
1	235	221	167
2	20	34	24
3	10	12	24
4	2	3	6
5	6	6	12
(B) Related to Political History			
1	212	168	41
2	37	66	31
3	16	31	58
4	4	8	39
5	4	3	64
(C) Has a Religious Building			
1	48	21	210
2	79	20	6
3	69	53	8
4	21	44	4
5	56	138	5

Table 6-17 Reason for the ease of remembrance for the selected spaces (source: the researcher)

(Q23) Reasons for Distinction			
Score	El-Mansheya	Sa'ed Zaghloul	Abu-El-Abbas
(A) Architectural Style			
1	222	151	71
2	22	65	36
3	17	15	27
4	8	7	12
5	3	5	9
(B) Statues/ Fountain			
1	228	201	47
2	19	18	31
3	15	13	41
4	6	4	19
5	4	7	17
(C) View/Green Area and Trees			
1	191	187	59
2	39	25	46
3	30	19	30
4	5	7	11
5	7	5	9

Table 6-18 Reason for the distinctiveness of the selected spaces (source: the researcher)

From the responses, it was found that the selected public spaces are perceived as unique; this was due to the high number of responses within the ‘strongly agree’ (1) category. The exceptions to this were Saed Zaghloul and Abu El-Abbas, which related to their large size where the majority selected ‘somewhat agree’ (2) for both as shown in Figure 6-39.

Additionally, Figure 6-40 shows that the three public spaces are easy to remember due to their strong relationship with Alexandria’s cosmopolitan history; this was observed for El-Mansheya square, for which ‘strongly agree’ (1) was selected by 86%. This same category (1) was selected for Saed Zaghloul by 80%, and for Abu El-Abbas by 72%. However, the reason for selecting ‘strongly agree’ (1) for El-Mansheya (at 78%) related more to its political history and events; this was selected less for Saed Zaghloul at 61%. In contrast, Abu El-Abbas has no any political connection to its remembrance, as the majority of participants selected 3, 4 and 5, which meant they did not agree (25%), disagreed (17%) or strongly disagreed (27%). When considering the relationship to religious buildings, Abu El-Abbas was ranked highest at 90%; this was due to the presence of Abu El-Abbas and El-Abasary mosques, as shown in Table 6-16 and Figure 6-40.

As mentioned before, the three public spaces were found to be distinct, and when the participants were asked for their reasons, the majority selected strongly agree (1) for their architectural style, hard-landscaping (statues/fountains) and soft-landscaping as shown in Table 6-17 and Figure 6-41. Thus, El-Mansheya was ranked the most at 82%, 84% and 70% followed by Saed Zaghloul at 62%, 83% and 77%, whilst Abu El-Abbas was ranked the least at 46%, 30% and 38%.

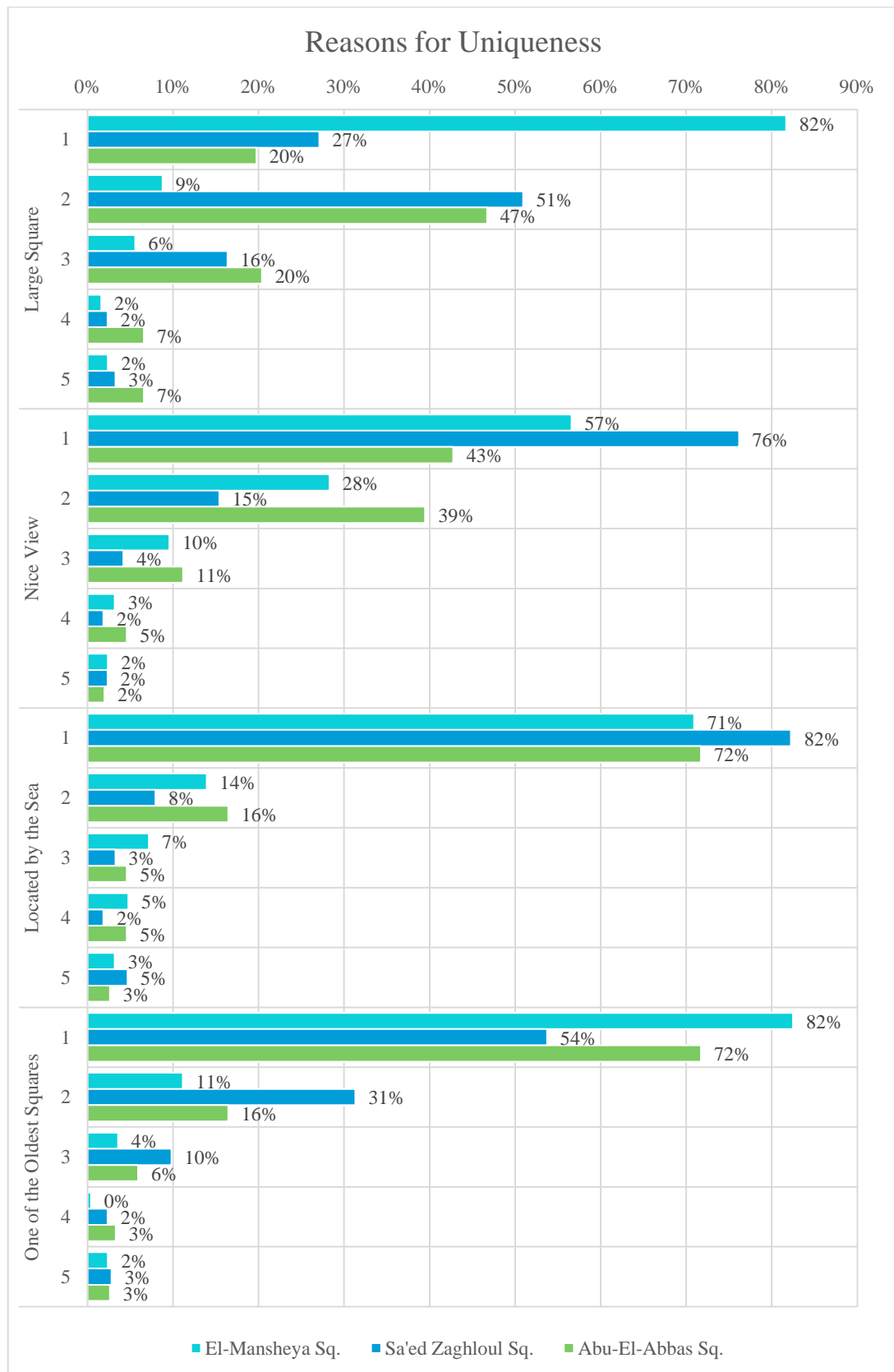


Figure 6-39 Chart shows the percentage of users' responses for the uniqueness and reasons (source: the researcher)

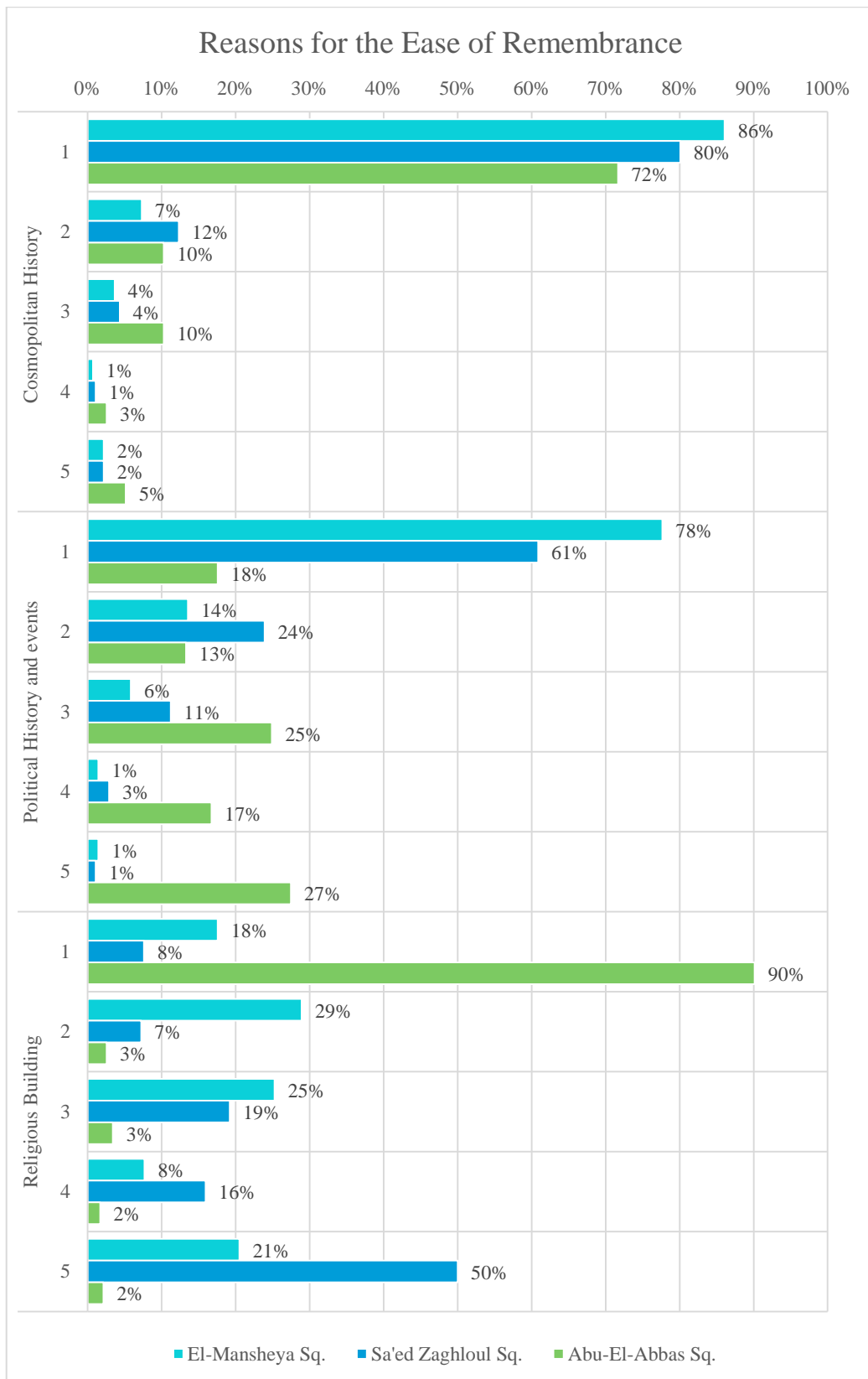


Figure 6-40 Chart shows the percentage of users' responses for the ease of remembrance and reasons (source: the researcher)

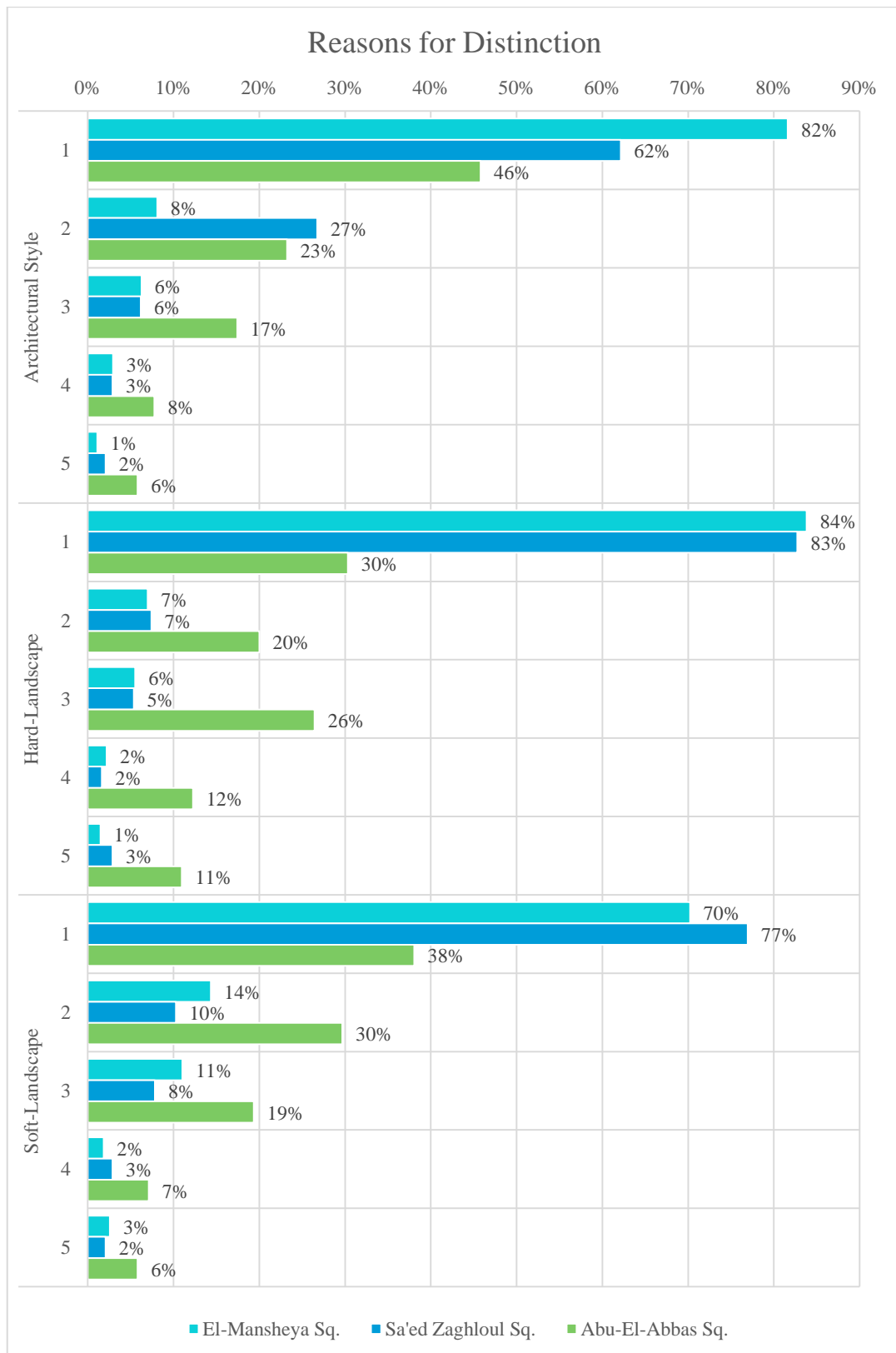


Figure 6-41 Chart shows the percentage of users' responses for the degree of distinction plus reasons (source: the researcher)

6.3.4 Social Aspects

This section is composed of three main questions and their subs questions; it explores how residents perceive activities in the selected public spaces. Firstly, the participants were required to answer Yes/No to Q24, namely “do they consider that the square supports activities?”. If the users’ response was ‘Yes’, it was followed with sub-questions to rate the kind of activities. This asked for the following responses: 1: Strongly agree, 2: Somewhat agree, 3: Neither agree nor disagree, 4: Somewhat disagree, 5: Strongly disagree. The second question (Q25) asked for Yes/No responses as to whether the space was socially active. Again, if the answer was yes it led to a question asking for reasons for their choice, which were given in the form of Yes/No/Don’t know responses.

Table 6-19 illustrates the number of participants categorised by age group. It found that, at 86%, Saed Zaghloul square was the most selected for supporting activities. This was followed by El-Mansheya at 79%, then El-Khaldin and Abu El-Abbas with 67% each. In Furthermore, social activeness appears to be in the same order at 92% (Saed Zaghloul), 88% (El-Mansheya), then El-Khaldin at 75% and finally Abu El-Abbas at 74%.

Age	El-Mansheya		Saed Zaghloul		El-Khaldin		Abu El-Abbas	
(Q24) Supporting Activities	Yes	No	Yes	No	Yes	No	Yes	No
19-25	32	8	34	6	31	9	26	14
26-35	83	30	95	18	74	39	75	38
36-45	61	12	61	12	47	26	45	28
46-55	31	2	30	3	25	8	22	11
55+	21	8	27	2	15	14	24	5
Total %	79%	21%	86%	14%	67%	33%	67%	33%
(Q25) Socially active								
19-25	35	5	35	5	29	11	27	13
26-35	100	13	105	8	89	24	87	26
36-45	68	5	69	4	55	18	48	25
46-55	26	7	30	3	29	4	22	11
55+	24	5	27	2	15	14	28	1
Total %	88%	12%	92%	8%	75%	25%	74%	26%

Table 6-19 Users’ selections regarding the social aspect of the selected spaces by age group (source: the researcher)

Table 6-20 presents the rate of activities supported in each square as necessary activities; this includes shopping, going to work, administrative purposes or studies. It reveals that ‘strongly agree’ (1) was selected by 89% for El-Mansheya, followed by Saed Zaghloul at 77%, while El-Khaldin was selected by 50% in the ‘somewhat agree’ (2) category. For the optional activities, namely relaxation and recreational purposes, it was found that the participants ‘strongly agreed’ with this for Saed Zaghloul and El-Khaldin at 81% and 80%.

This was followed by El-Mansheya at 61%, while Abu El-Abbas was selected by 46% under the somewhat agree (2) category.

Finally, under social activities was meeting friends and children playing. Thus, 73% of participants ‘strongly agreed’ (1) that Saed Zaghloul met this criteria, followed by El Khaldin 65%, then El-Mansheya with only 50%. Moreover, the frequency for Abu El-Abbas lies in the ‘somewhat agree’ (2) response at 51% as shown in Figure 5-73

(24) Supporting Activities				
Score	El-Mansheya	Saed Zaghloul	El-Khaldin	Abu El-Abbas
Necessary Activities				
1	203	191	23	13
2	13	35	96	60
3	3	6	44	75
4	2	6	15	25
5	7	9	14	19
Optional Activities				
1	140	200	153	52
2	55	21	29	88
3	12	17	6	33
4	11	6	2	12
5	10	3	2	7
Social Activities				
1	114	180	124	53
2	70	29	49	97
3	19	19	12	27
4	12	10	4	5
5	13	9	3	10

Table 6-20 The users’ selection regarding the supporting activities within the spaces (source: the researcher)

The second question (Q25) about social activities for the four public spaces are as shown in Table 6-19. Table 6-21 illustrates the number of users who selected ‘Yes’; it shows that El-Khaldin is associated with political activities by less of than the half (49%) of the respondents, religious events with 68%, and cultural activities with 73%. It also illustrates that El-Mansheya and Saed Zaghloul are most connected with political activities at 66% and 50% respectively, and with cultural activities at 64% and 65% respectively. However, Abu El-Abbas is only associated with religious events (at 89%) as illustrated in Figure 6-43.

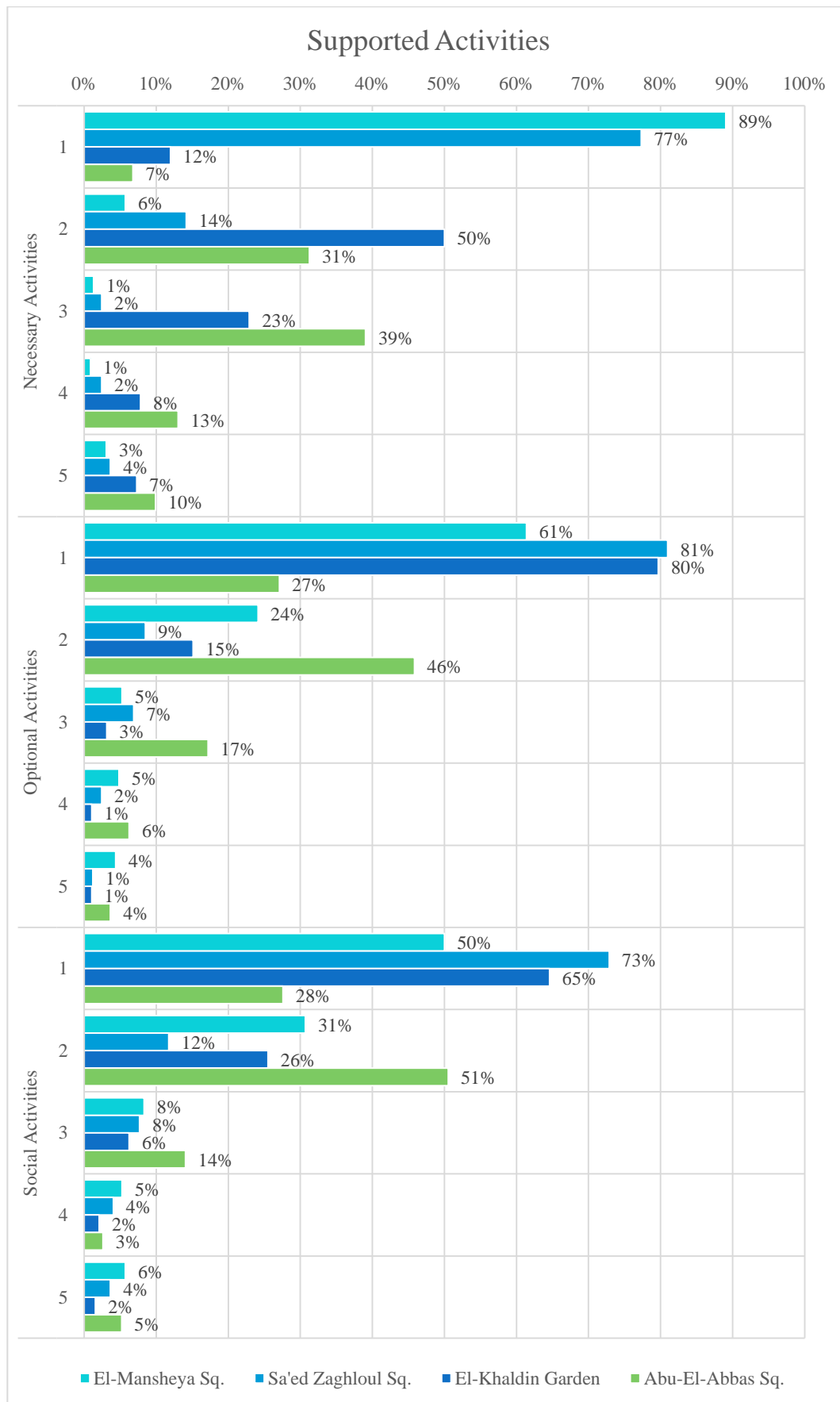


Figure 6-42 Chart shows the users' percentage selection for supported activities (source: the researcher)

(Q25) Socially Active				
Score	El-Mansheya	Saed Zaghloul	El-Khaldin	Abu-El-Abbas
Political Activities				
Yes	167	132	106	7
No	38	78	76	155
Don't Know	48	56	35	50
Religious Activities				
Yes	12	8	147	189
No	202	222	48	9
Don't Know	39	36	22	14
Cultural Activities				
Yes	163	173	159	85
No	42	45	25	88
Don't Know	48	48	33	39

Table 6-21 The users' selection of activities for the selected spaces (source: the researcher)

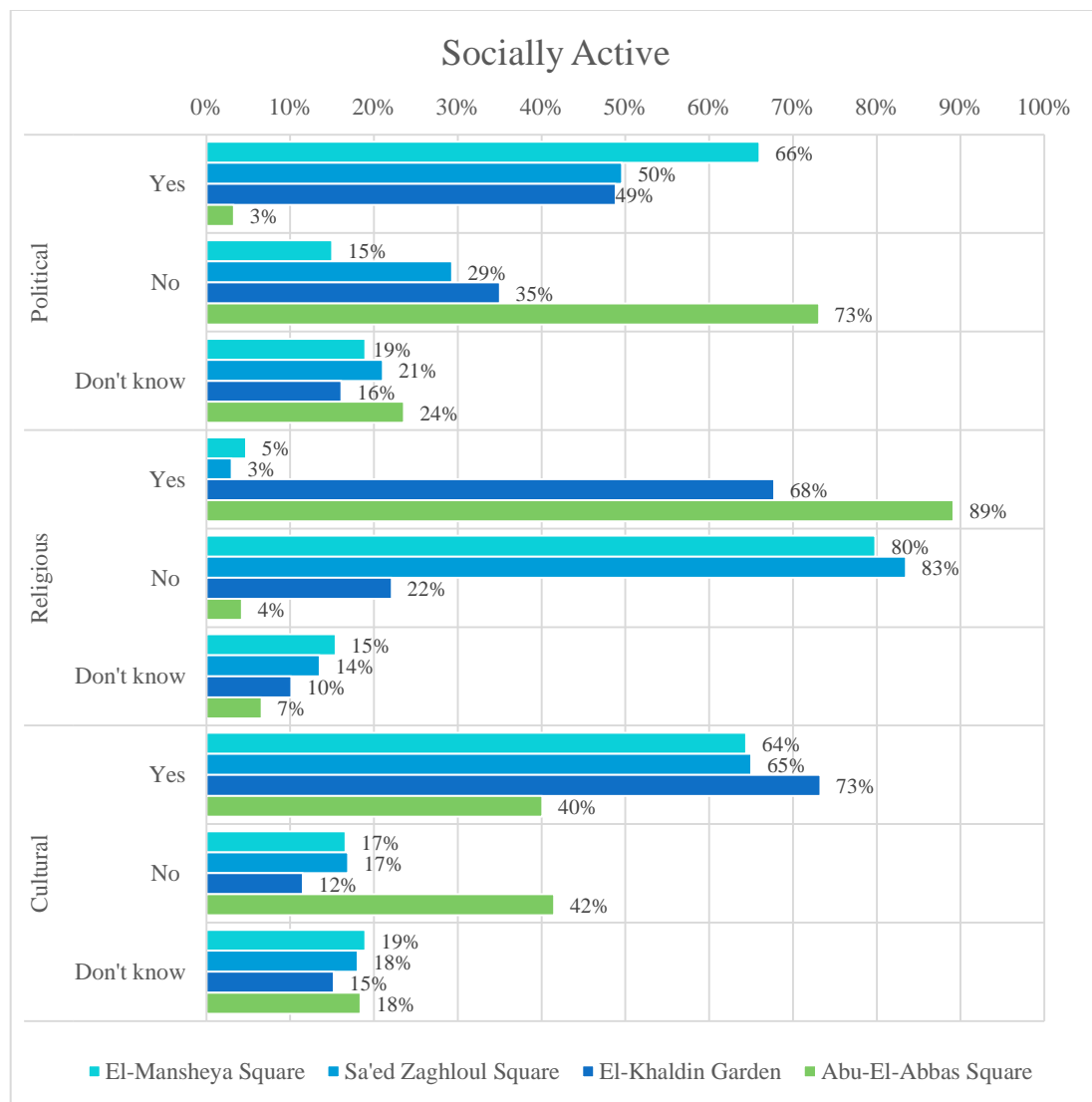


Figure 6-43 Chart shows the percentage of users' responses for social activities for the selected spaces (source: the researcher)

For the final question (Q26), the respondents were asked to answer Yes/No/Don't know to questions on the qualities that characterise the selected public spaces. In Table 6-22 and Figure 6-44, the four spaces were observed as safe, connected to other spaces, pleasant and accessible anytime. However, the percentage fluctuates, as it seems that Saed Zaghloul was most selected in terms of safety at 92%, connection at 93%, pleasant at 85% and accessible any time at 90%. After that El-Mansheya was selected by 85%, 94%, 75% and 88%, respectively. The following responses then fluctuates between El-Khaldin and Abu El-Abbas, which were both observed as being safe at 64% and 71% respectively, and connected to other spaces at 77% and 67% respectively. As for being pleasant and accessible, El-Khaldin was selected by 69% and 62% respectively, whilst Abu El-Abbas was unexpectedly selected by 60% and 76%.

(Q26) Qualities that Characterise the Spaces ...				
Score	El-Mansheya	Saed Zaghloul	El-Khaldin	Abu-El-Abbas
As safe (Day/Night)				
Yes	244	264	184	204
No	20	11	55	42
Don't Know	24	13	49	42
Connected to other spaces				
Yes	272	268	222	194
No	4	5	32	62
Don't Know	12	15	34	32
Pleasant				
Yes	216	244	200	174
No	47	29	47	73
Don't Know	25	15	41	41
Accessible anytime				
Yes	253	260	178	218
No	19	14	77	42
Don't Know	16	14	33	28

Table 6-22 The users' selection of the qualities that characterise the selected spaces (source: the researcher)

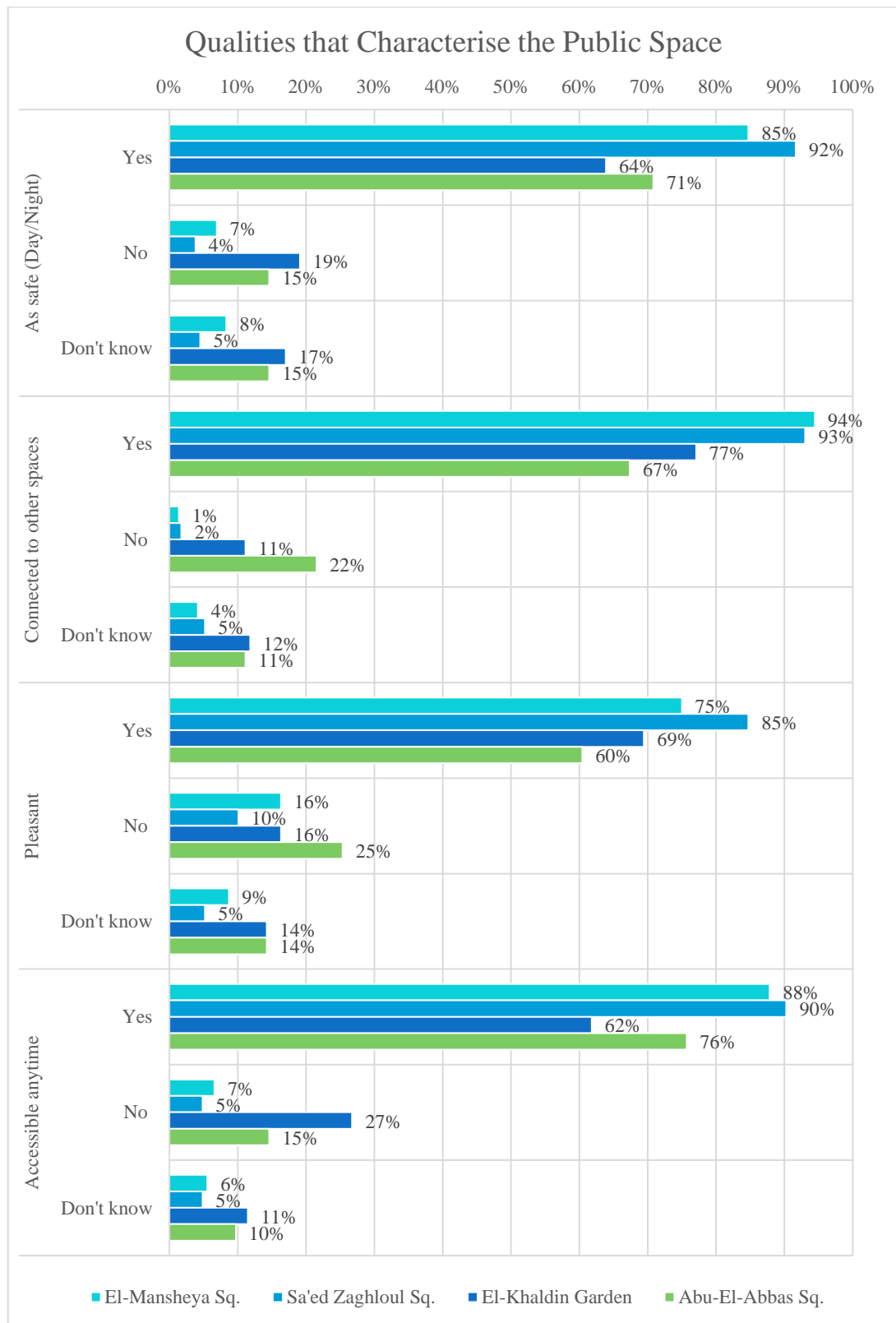


Figure 6-44 Chart shows the percentage of users' responses regarding the characteristics of the selected spaces (source: the researcher)

6.3.5 Perceptual Aspects

This section reveals the knowledge of the participants about the selected spaces. They were requested to answer by ‘Yes/No’ to the following questions; firstly (Q27) whether they know of any building around the space that currently hosts a symbolic function, then (Q28) whether the space is associated with historical events or a notable person. Finally (Q29), they were asked if there are any historic preserved landscape elements in the selected spaces.

Age	El-Mansheya		Saed Zaghloul		El-Khaldin		Abu-El-Abbas	
	Yes	No	Yes	No	Yes	No	Yes	No
(Q27) Buildings host a symbolic function								
19-25	39	1	38	2	37	3	39	1
26-35	108	5	105	8	105	8	111	2
36-45	72	1	72	1	67	6	69	4
46-55	33	0	32	1	30	3	31	2
55+	29	0	29	0	25	4	28	1
Total %	98%	2%	96%	4%	92%	8%	97%	3%
(Q28) Associate with historical event or person								
19-25	36	4	38	2	13	27	32	8
26-35	105	8	109	4	44	69	93	20
36-45	70	3	69	4	25	48	58	15
46-55	31	2	31	2	9	24	23	10
55+	28	1	29	0	16	13	27	2
Total %	94%	6%	96%	4%	37%	63%	81%	19%
(Q29) Preserved historic elements								
19-25	37	3	38	2	26	14	15	25
26-35	105	8	108	5	87	26	60	53
36-45	67	6	68	5	49	24	30	43
46-55	31	2	32	1	27	6	15	18
55+	27	2	28	1	25	4	18	11
Total %	93%	7%	95%	5%	74%	26%	48%	52%

Table 6-23 The users' selection regarding the perceptual aspect for the selected spaces by age group (source: the researcher)

Table 6-23 provides information about the users' replies towards three questions (Q27, Q28 and Q29). For Q27, the four squares scored significantly highly; El-Mansheya was scored the highest at 98%, then Abu El-Abbas at 97%, whilst Saed Zaghloul was slightly less at 96%, and finally El-Khaldin at 92%. For Q28, only three squares were selected as being linked with historical events or notable persons. Firstly was Saed Zaghloul with 96%, secondly was El-Mansheya at 94% and finally, Abu El-Abbas at 81%. Finally, for Q29 only three squares correlated to any historically persevered landscape elements. This was scored as 95% for Saed Zaghloul, 93% for El-Mansheya, then El-Khaldin with 74%.

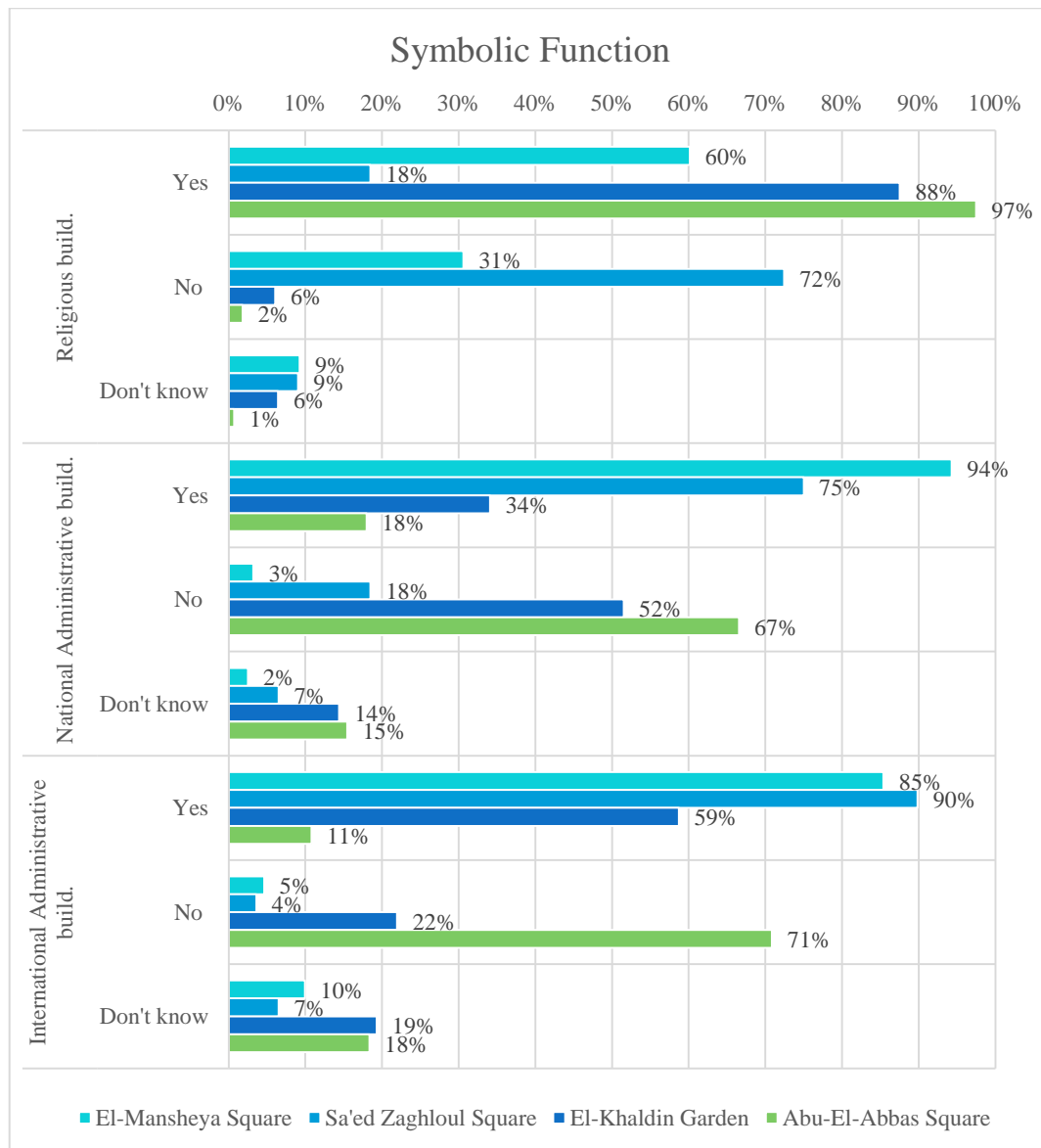


Figure 6-45 Chart shows the percentage of users' responses regarding the symbolic function of buildings within or near the selected spaces (source: the researcher)

(Q27) Symbolic function				
Score	El-Mansheya	Sa'ed Zaghloul	El-Khaldin	Abu-El-Abbas
Religious Building				
Yes	169	51	231	271
No	86	200	16	5
Don't Know	26	25	17	2
National Administrative Building				
Yes	265	207	90	50
No	9	51	136	185
Don't Know	7	18	38	43
International Administrative Building				
Yes	240	248	155	30
No	13	10	58	197
Don't Know	28	18	51	51

Table 6-24 The users' selection regarding the symbolic function of buildings within the selected spaces (source: the researcher)

Figure 6-45 and Table 6-24 illustrate that three spaces have symbolic religious buildings, with Abu El-Abbas scored highest at 97% for its mosque. This was followed by El-Khaldin at 88% for the Qaed Ibrahim mosque, designed by the same Italian architect. Finally, El-Mansheya was recognised for its church at 60%. However, as expected, only two squares were selected as having a national administrative building, namely El-Mansheya at 94%, and Saed Zaghloul at 75%. Finally, El-Mansheya at 85%, Saed Zaghloul at 90% and El-Khaldin at 59% have buildings that host international administrative functions.

Table 6-25 and Figure 6-46 present the three public spaces associated with notable persons or historical events. Surprisingly, only El-Mansheya was selected for historical events at 87%. However, three squares were linked with famous characters, El-Mansheya with 91%, Saed Zaghloul with 86%, and Abu El-Abbas with 63%.

(Q28) Notable Events or Persons			
Score	El-Mansheya	Saed Zaghloul	Abu-El-Abbas
Historical Events			
Yes	236	117	35
No	12	129	151
Don't Know	22	30	47
Person			
Yes	246	237	147
No	4	10	42
Don't Know	10	22	35

Table 6-25 The users' selection regarding the association of notable events or persons with the selected spaces, by age group (source: the researcher)

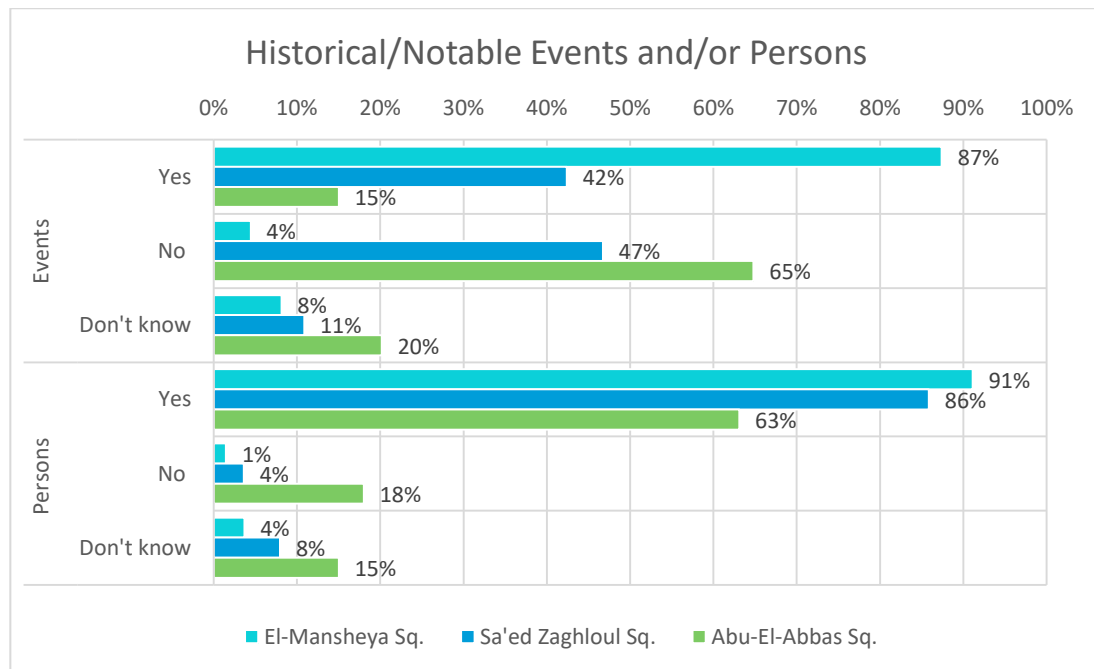


Figure 6-46 Chart shows the percentage of users' responses regarding the association with notable events or persons (source: the researcher)

Table 6-26 and Figure 6-47 illustrate the responses to Q29; they show that El-Khaldin was selected in this category due to preserved historic landscape elements through artwork, including statues at 88% and street furniture at 87%. Furthermore, El-Mansheya and Saed Zaghloul have fountains (at 69% and 60%), artwork (at 95% and 97%), and street furniture (at 81% and 82%).

(Q29) Preserved Historic Elements			
Score	El-Mansheya	Saed Zaghloul	El-Khaldin
Fountain			
Yes	185	165	21
No	53	81	159
Don't Know	29	28	34
Art Work			
Yes	253	266	188
No	7	6	16
Don't Know	7	2	10
Street Furniture			
Yes	217	226	187
No	29	26	12
Don't Know	21	22	15

Table 6-26 The users' selection regarding the preserved historic elements of the selected spaces (source: the researcher)

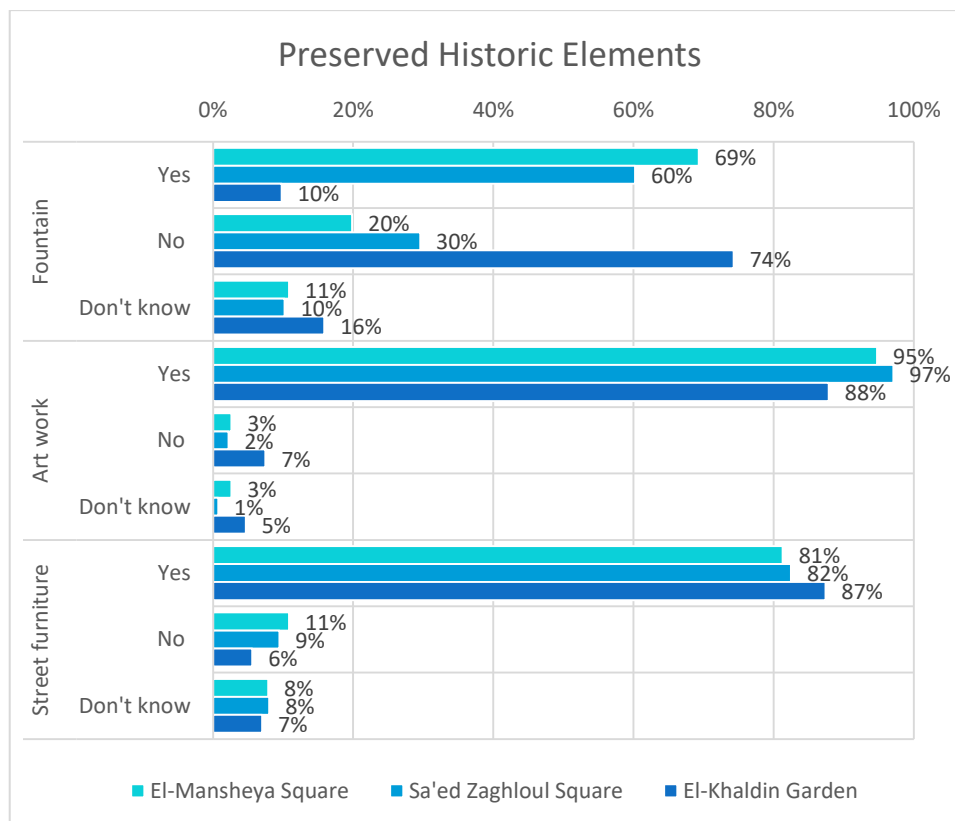


Figure 6-47 Chart shows the percentage of users' responses regarding the preserved historic elements (source: the researcher)

6.4 Conclusion

Chapter 6 along with the previous chapter 5 focused on the quality of the functional, social and perceptual aspects of the case studies, and the impact of the built environment on the way people utilise the spaces. It first drew an understanding about the spatial environment from the application of an assessment mechanism for professionals' and users' perceptions; this was achieved from the experts' point of view through impressionistic and walking tour assessments (Chapter 5). Then it analysed the users' interactions with the case study spaces by using behavioural mapping and observations to explore users' activities in the space. Finally, it analysed the selected spaces from the users' (and primarily Alexandria's residents') points of view by applying the user questionnaire (Chapter 6).

El-Khaldin Garden is within a mixed urban structure with cosmopolitan's era buildings on the waterfront and at the edge of the city centre. As its foundation was an open garden on the same urban level, it was then transformed to an open space elevated on a garage roof that affected its urban features. It was ranked slightly low in the functional and perceptual aspects and in the overall total for the impressionistic assessment. The space is also lacking in the provision of users' facilities, and there is minimal consideration of climate factors in its design, and is poorly maintained which affected users' views. This was also supported by the walking tour assessment that ranked the space slightly low in terms of the social and perceptual factors; this was due to the lack of diverse social activity, the difficulty of users with special needs to access the space, and the lack of night facilities to support the sense of safety. However, users from different age ranges and gender stayed for a reasonable amount of time; they were observed as sitting and enjoying the sea view with the purpose of relaxing and chatting. Such activities mostly occurred in the morning and evening, yet during the weekend evenings the space was generally used by males. From the users' perception, El-Khaldin is generally the least likeable and not commonly visited, yet the purpose of any visit made will be for relaxation, recreation, meeting friends, and for religious participation. It can be described as a simple, familiar and relaxing public space that is in a fairly central location and considered a meeting point or a passing by node. It is freely accessible from all directions, which indicates that participants had not recently visit the space. However, Alexandria's residents do not consider El-Khaldin unique or easily remembered, and do not believe it has any distinct features in terms of its functional aspects. Nevertheless, in the social aspects, the space supports activities that tend to be optional, social and somewhat necessary. It can be perceived as socially active due to its political, religious and cultural

activities. Also, the majority of the participants believe that El Khaldin is safe, connected to other spaces, pleasant and accessible at any time. For the perceptual aspects, the users of El-Khaldin and Alexandria's residents recognised the buildings that host symbolic functions, noting them as religious and international administrative buildings, and that the space preserves historic elements but is not associated with a historical notable event or person.

Saed Zaghloul Square has well-designed features in a busy location on the waterfront of the city centre. It has a mixed urban structure that is surrounded by recreational, administrative and commercial buildings, which makes it an attraction for tourists and residents. It was ranked average in the experts' evaluation in terms of its functional, social and perceptual aspects as responses to some indicators suggested low maintenance and low consideration of the climate in the impressionistic assessment, and a lack of user facilities and poor consideration for those with disabilities in the design were noted from the walking tour assessment. However, users from all ages and both genders used the space for a fair amount time; they sat and enjoyed activities by chatting, gathering, relaxing and eating in the space from morning until evening, but this occurred mostly in the afternoons during the week. Taking a photo with the statue was one of the main activities within the space, which also indicates that individuals may not be frequent users, or they have an attachment to the iconic space. From the users' perceptions, Saed Zaghloul is the most likeable space that best represents the city of Alexandria and that it is visited the most for shopping, relaxation, meeting friends and recreational purposes. It was noted for its positive set of qualities overall, and can be described as a familiar, attractive, iconic and active space that is in a central location which makes it a meeting and passing by node that is sometimes freely accessible from any direction depending on the open entrances. Functionally, the users consider it unique due to its location by the sea and consequently its view and historic background. It is easy to remember due to its relationship to the cosmopolitan and political history with its distinctive architectural style, statue and view. Socially, the space supports all kinds of activities and is considered a socially active space for political and cultural events. The users and residents perceived the space as safe, pleasant, accessible anytime and connected to other spaces. Perceptually, Alexandria's residents recognised the national and international administrative buildings and their symbolic function, and the association of the space with a notable historic person that preserves his identity through an ancient statue, namely the Egyptian leader, Saed Zaghloul.

El-Mansheya Square is two combined squares - Mohamed Ali Square, the oldest European square in Alexandria dating since the 1830s, and Ahmed Orabi Square established 1902-1905 and known as the French Garden - that have both transformed and changed over the years. It is the heart of the city centre within a mixed urban structure and historic European style buildings dating from the 1830s and 1930s. As for the foundation of modern Alexandria, it was designed with highly specified urban features that changed throughout the lifespan. In the impressionistic assessment, both squares were assessed as appropriate in their social, functional and perceptual aspects with only the place management and maintenance category unsupported. In the walking tour assessment, functional, social and perceptual aspects were relatively high in total except for some indicators that were not supported in the social attributes; these included the users' facilities, the consideration of disability in the design and perceptual attributes, as well as the noise level and lack of personal distance. However, users' engagement with the square on weekday mornings was unbalanced as most of the users were passing, except for those engaging with activities for a longer duration, who tended to appear during the afternoons. Meanwhile, during weekends, the space shows the continuity of visitors at different times. From the users' point of view, El-Mansheya is the second most likeable space; with a greater preference for Mohamed Ali Square then Ahmed Orabi, as Mohamed Ali represents the city of Alexandria, and both are visited for different purposes, such as shopping, work, administration and attending events. The space cannot be described as relaxing or clean, but the users perceive it as active, familiar and iconic. The space is in a central location within the mixed urban structure that makes it a destination point and a passing by node; in addition, it is freely accessible from any direction. They also perceived the space as unique for its size and history and as the oldest square in Alexandria; this also makes it memorable for its cosmopolitan and political history that gives it a distinctive European architectural style and statue. The users agreed that the space supports social, optional and necessary activities, and supports social activities when considering political or cultural events. The visitors are familiar with all symbolic functions of the buildings, and the association with notable events and personalities.

Finally, **Abu El-Abbas** is within the old Turkish town fabric on the waterfront with a strong iconic religious building, which makes it an attraction for tourists and residents. It was ranked appropriate in the impressionistic assessment, except for the perceptual attributes for lacking in safety, visual pleasure, and place management. This was also supported by the walking tour assessment, as it was slightly low in the perceptual aspects and lacked the sense

of security at night, with high noise levels and issues with personal distance. Moreover, users' behaviours were affected by its low maintenance, and the lack of user facilities in its design. There is no active engagement within the square as users do not stay long; this is because, beyond the use of surrounding shops and the local funfair, there are limited optional and social activities. Unexpectedly, Alexandria's residents nominated Abu El-Abbas as the third most likeable space, yet not one of them frequently visit the space, which is only frequented for religious participation. They describe the space as active, familiar and simple but also neutral in terms of its attraction, opportunities for relaxation, pleasing image and cleanliness. The users and the residents somewhat agree that it is in a central location, and that sometimes it is a destination or passing by space and somewhat freely accessible. The space is unique for its location by the sea with a harbour view, whilst its history made it easy to be remembered due to its famous mosque and its relationship to Alexandria's history, with its distinct mix of Islamic and European architectural styles. The users approved that the space supports only social and optional activities and it is only socially active for religious events. The participants characterised the space as safe, pleasant, accessible anytime and connected to other spaces. This contrasted with the experts' perception; they understood the space to only have a religious functional symbolic building and only associated with El-Morsi Abu El-Abbas and El-Abbasiri as notable persons.

Overall, the use of case study spaces by Alexandrians and Egyptians is high particularly on weekday afternoons and weekends; meanwhile, use by international foreigners is remarkably low. There is a realistic gap between female and male visitors among Alexandrians and Egyptian users, with female rates slightly lower and balanced with male visitors.

If returning to the theoretical underpinning, it was seen that the characteristics of urban life in urban spaces depends on the physical quality and structure. This introduces a set of values and qualities, which should be measured and used as a guide in developing a successful and efficient urban space. Good quality urban spaces do not only mean a clean and well-maintained physical built environment; they must be designed to host different public activities. For a public space to be successful, it has to be welcoming for necessary, optional and social activities. It has to encourage users to stay engaged longer in the space. Accordingly, users' behaviour reflects the way urban design shape public spaces. However, Saed Zaghloul and El-Mansheya squares are managed relatively appropriately in the application techniques that assessed their physical design. In the impressionistic assessment, El-Khaldin is marginally inappropriate in functional and perceptual attributes, whilst Abu

El-Abbas failed in the perceptual attributes. The walking tour assessment had the same results in the perceptual aspects as El-Khaldin and Abu El-Abbas, in that it is slightly inappropriate; furthermore, the social aspects of El-Khaldin need improvement. The observation showed that the selected spaces are used despite its physical condition, yet Abu El-Abbas is not properly used. Users' reactions show success in some aspects and the need for improvement in other aspects. Respondents perceived the social aspect as successful in all selected public spaces, but the functional morphological aspect was absent in El-Khaldin Garden, and the perceptual aspects needed improvement in EL-Khaldin and Abu El-Abbas squares.

Alexandria's residents declare that the main qualities that are needed to encourage users to visit and use a public space are: a suitable quality for the seating areas and landscaping plus the availability of entertainment and leisure around or near the spaces. The next chapter will combine and synthesise the analysis of findings from the selected case studies in order to arrive at an overview of the efficiency of the transformed public spaces in Alexandria's Eastern Harbour. This will use the knowledge learned from the literature review chapters to provide an overall conclusion and set of guideline recommendations to promote successful and efficient public spaces in Alexandria.

7. Discussion

7.1 Introduction

The current research aims at exploring the factors that determine the transformation of port cities. It studies the physical/morphological and sociocultural attributes of the public space on waterfronts in terms of their facilities and use (people-based approach) and sense of place. It also evaluates, from professional and user perspectives, the degree to which the current physical features of the Eastern Harbour squares set an appropriate context for users' diverse activities, and determines user satisfaction with such spaces.

Findings from the previous two chapters (Ch5 and Ch6) reveal that experts and users do not share the same perception of the selected public spaces, highlighted in the difference between their observations of the selected spaces. Despite the condition of these spaces, they are used frequently for different purposes. This chapter will discuss the findings from the experts' and user perceptions.

7.2 Experts' Perceptions

Chapter 5 revealed a problem in the social and perceptual aspects of the selected public spaces in Alexandria. In this section, the researcher discusses the effectiveness of urban design in order to explore the factors behind this phenomenon. Therefore, the analytical framework established in Chapter 3 is applied to evaluate the achievements, problems, opportunities and challenges associated with successful public open spaces in Alexandria. This section investigates the effectiveness of the planning and design process in promoting satisfaction with the selected squares from the experts' point of view. In order to understand why the public spaces are currently provided in a particular way, the section discusses their transformation from the experts' point of view; this is compared to theory. In addition, the section presents weaknesses in the planning and urban design process when providing successful public spaces in Alexandria from experts' perspectives.

7.2.1 Impressionistic Inventory Findings Discussion

The professional team examined the case studies using an impressionistic inventory. The following analysis discusses the strengths and weaknesses of each space for each key aspect and its criteria, as shown in Table 7-1

Table 7-1 combines the results from three previous tables (5-1, 5-2 and 5-3) from Chapter 5; it represents the total average of the selected spaces and their evaluation in accordance with the functional, social and perceptual categories and overall total.

Impressionistic Assessment		Quality Score				
Category	El-Khaldin	Saed Zaghloul	Mohamed Ali	Ahmed Orabi	Abu El-Abbas	
Functional						
Linkage and Access	2.5	3	3	2.7	2.7	
Diversity and Complexity	3	3.1	3.3	3.1	3.1	
Microclimatic Considerations	1	1.3	2	2.5	1.9	
Total Av Score/Space	2.2	2.5	2.8	2.8	2.6	
Social						
Permeability and Movement	2.3	2.6	2.5	2.8	2.5	
Outline and Design Features	3.1	3.3	3	2.8	3	
Function and Use	2.3	2.7	2.7	2.7	2.6	
Total Av Score/Space	2.6	2.9	2.7	2.8	2.7	
Perceptual						
Safety and Security	2.5	3.2	2.8	2.7	1.8	
Visual Pleasing and Appropriate	2	2.5	2.2	2.3	1.6	
Place Management and Maintenance	1.4	1.9	1.6	1.7	0.9	
Place Identity and Character	3.1	3.7	3.3	3.3	2.6	
Total Av Score/Space	2.2	2.8	2.4	2.5	1.7	
Total score /4	2.3	2.7	2.7	2.7	2.3	

Table 7-1 Impressionistic assessment of the functional, social and perceptual categories and the main aspects for each (source: the researcher)

7.2.1.1 Functional Aspects

Table 7-1 shows that the functional criteria for access and connection to the spaces are appropriate in terms of their good location and accessibility by public transport, car and on foot, as well as the availability of parking areas near the spaces and they're connected to each other. Similarly in terms of diversity and complexity the surrounding buildings of the selected squares are used for a good range of purposes, including administrative, residential, recreational, educational and religious, as shown in Figure 7-1. Plus the appearance of the buildings and their materials are rich; this enhances the spirit of the space and its lifespan. The professional team agreed that there is diversity in both the space usage and users, as all age groups and genders frequented it.



Figure 7-1 The diversity and complexity of El-Khaldin Garden usage in terms of the surrounding buildings, which accommodate administrative, residential and religious activities (source: the researcher,2017)

In contrast, El-Khaldin, Saed Zaghloul and Abu El-Abbas scored inappropriate in their climatic considerations, as mentioned in (section 5.2.1.3, page 170). It is understandable that El-Khaldin scored 25% for this quality, as it has limited options for shade, which is particularly problematic in the summer. This is because it is located over a garage building, which affords little natural shade through branched trees or water features; however, it can be considered in a different manner. Meanwhile, Saed Zaghloul surprisingly was scored at 33% and was thus inappropriate; this is due to the lack of shade near the seating areas and the usage of unbranched trees (palms). Although the space has two fountains on the south side of the square, most the time they are closed. This also affected the score; however, the fountains are employed more as a aural and visual barrier from the surrounding busyness of the city. In comparison, Abu El-Abbas is mostly shaded due to its size and the surrounding buildings, although it only scores 47.5% and is thus inappropriate. Overall, Table 7-1 shows that the professionals' perceptions of the selected spaces' functionality lie between slightly appropriate and appropriate.

7.2.1.2 Social Aspects

In the same table (7-1) the second section shows that permeability and movement are generally appropriate as result of the multi-paths and accessibility from all sides. The main exception to this is El-Khaldin; as mentioned in (section 5.2.2.1, page 173), it only has an entry from the rear due to its elevated platform. Additionally, due to blockages by either vendors or workers responsible for the garden and its cleanliness, one of the step entrances is illegally closed. Furthermore, in Abu El-Abbas no one can use the inner space of the square as shown in Figure 7-2.



Figure 7-2 (A) El-Khaldin Garden forced closed entrance (B) Abu El-Abbas Square's fence (source: the researcher, 2017)

The axes provide direction, and the pedestrian lanes are suitable as the spaces are connected to each other by the corniche road and tram, while the distance between El Khaldin and Abu el-Abbas is approximately 2.2 km in total. Moreover, from El-Khaldin to Saed Zaghloul is only 410m, the distance between Saed Zaghloul and El-Mansheya is 535m, and the longest distance is between El-Mansheya and Abu El-Abbas at 1200m. The spaces are suitable for all ages but not for users with special needs who would experience difficulty in using the spaces, especially El Khaldin due to its elevation up seven steps with no ramps or lifts.

The outline and design features, as agreed by the ten experts, are highly appropriate for the five spaces in unifying their appearance. Each space has its character and a sense of identity from the surrounding architectural buildings and the cosmopolitan imprint. This is due to the proportion between the masses, which are mostly spaces in shade due to appropriate proportions and enclosure. The richness and variety of pattern is neutral in El-Khaldin and Ahmed Orabi due to the new surrounding buildings, which appear plain in comparison with the original existing buildings. Moreover, Abu El-Abbas was scored as inappropriate for the same reason, which also noted the bad condition of the surrounding buildings and the space itself.

Saed Zaghloul, Mohamed Ali, Ahmed Orabi and Abu El-Abbas achieved the absolute meaning value by the experts due to their history and building designs while El-Khaldin as a space has lost its historical value since its transformation in the 1960s from a garden to a space above the garage building. Nevertheless, it has a meaning value; El-Khaldin means 'the immortals' and is noted for its historical statues of famous and notable Alexandrians

which commemorates their contribution for present day Alexandrians. Lastly, users agreed that the human scale was appropriate in helping users feel comfortable within the space.

Overall, the function and use criteria for the spaces were generally scored as appropriate except for El Khaldin, which was slightly appropriate due to the aforementioned reasons (section 5.2.2.3, page 178). The experts agreed that the five spaces acts as destinations for some and transaction areas for others, as illustrated through the various scores presented in Table 5-2 (page 172) ; moreover, El-Mansheya Square was given a perfect score 4/4 for both indicators. The selected spaces were described as very family and ethically friendly and highly rated as tourism destinations. The spaces are used in celebrating events; indeed, Abu El-Abbas was scored at 3.8 by inhabitants and those from rural cities around Alexandria for its accommodation of religious and social events, as shown in Figure 7-3. Moreover, El-Khaldin was noted for its was political use during the 2011 and 2012 Revolutionary period, as shown in Figures 7-4A and 7-4B. These illustrate how the space is used for religious purposes, especially during Ramadan, which involves all the surrounding area around the mosque as well as the streets and other spaces that are used for prayer. Furthermore, the space hosts different activities and users can be found sitting, relaxing, and chatting, whilst small groups play, families have picnics and others eat on the grass, benches or around the fountain. In general, the spaces are marginally inappropriate in terms of the seating comfort, except for Abu El-Abbas, which does not support the group's activities, as previously mentioned in (section 5.2.2.3, page 178). The spaces have access to cafes and restaurants but they lack public toilets, whilst the uncontrolled street vendors sometimes cause an issue as blockage in the spaces. Nevertheless, the 10 experts decided that the sociability of the selected spaces are appropriate overall with scores ranging between 2.6 and 2.9.



Figure 7-3 Religious and social events in Abu El-Abbas



Figure 7-4 El-Khaldin Garden: (A) Political Use (B) Religious use in Ramadan

7.2.1.3 Perceptual Aspects

The third section of Table 7-1 shows the main perceptual criteria, which starts with safety and security; for this, Saed Zaghloul was scored the highest, then El-Mansheya and El-Khaldin. These spaces provide safety for their users in the parking area, in crossing the streets and within the space during the day and night for both elders and women. In comparison, Abu El-Abbas was scored as slightly inappropriate due to the reasons mentioned in (section 5.2.3.1, page 184).

Visual pleasure and place maintenance have a correlation; thus, it is understandable that, if the spaces are not well maintained it affects their attractiveness. This is demonstrated in Table 5-3 (page 184) and discussed in (sections 5.2.3.2 and 5.2.3.3); with the exception of Abu El-Abbas square, the spaces are scored as slightly appropriate in terms of being visually pleasing.

Place management and maintenance is the only criteria in which the five squares were scored below 2. The experts agreed that they are not properly maintained and managed and that this affects other indicators scores under this criterion; for example, in terms of the elegance of El-Khaldin and Abu El-Abbas in the space identity and character and visual pleasure, as previously noted. Therefore, it is clear that the spaces need serious attention in terms of this aspect.

Nevertheless, in general the spaces were perceptually appropriate except Abu El-Abbas square. It is evident that Abu El-Abbas space needs serious action to assure its safety and security, its sense of visual pleasure and appropriateness; moreover, substantial maintenance is needed to meet users' needs around the enclosed space, as previously mentioned under (section 5.2.3).

7.2.2 Impressionistic Inventory Conclusion

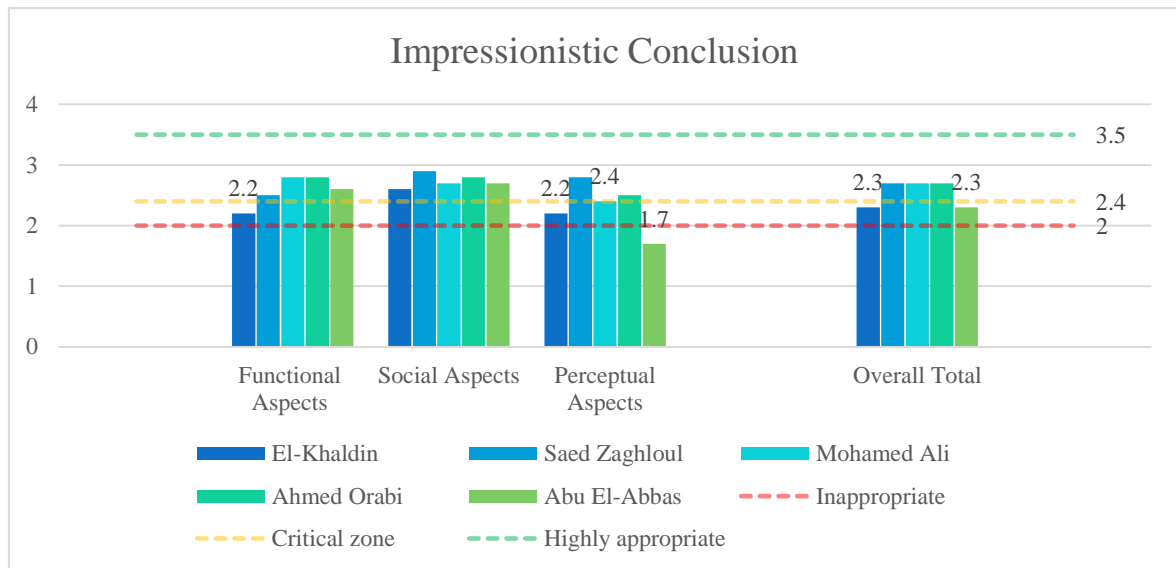


Figure 7-5 Impressionistic assessment: Total conclusion chart
(source: the researcher)

Figure 7-5 and Table 7-1 (page 274) clarify that the overall evaluation of the spaces scored above the threshold; three spaces received relatively average scores at 2.7, which indicates an average degree of appropriateness, yet the other two spaces required more attention due to their scores in the zone below 2.5. El-Khaldin Garden and Abu El-Abbas square were both valued at 2.3 which indicate they are marginally inappropriate for users within the three aspects combined.

Key findings represent the shortcomings of the spaces; however, the total score of the functional aspects in Figure 7-5 illustrate that El-Khaldin garden was the only square measured as slightly inappropriate with a score of 2.2. This indicates that it requires action to make it appropriate due to its critical current situation; furthermore, if it is neglected further, it will fail functionally. Social aspects are the only characteristics in which the selected spaces measured as appropriate. Moreover, the perceptual aspects show that two spaces require modification in order to be appropriate for users, namely Ahmed Orabi at 2.4 and El-Khaldin at 2.2. Nevertheless, Abu El-Abbas at 1.7, it also demands change to enhance the space perceptually.

Based on Table 7-1, the following sections will conclude the main categories of the selected spaces for each aspect.

7.2.2.1 Functional Aspects

Figure 7-6 is adapted from Table 7-1 (page 274) and represents the evaluation of the three categories of the functional aspects for the selected spaces. It is clear that the five selected spaces are appropriate in two categories; linkage and access, and diversity and complexity. These appear to be the highest category for the selected spaces. In comparison, microclimatic considerations are relatively weak compared to the previous two categories.

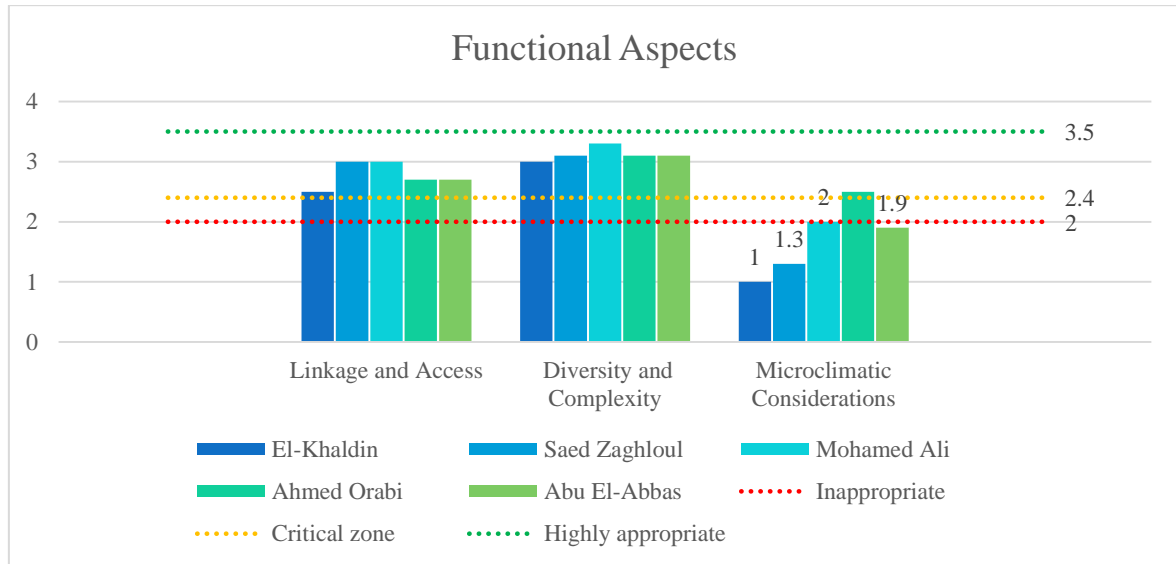


Figure 7-6 Total of the functional aspects for the selected
(source: the researcher)

Although only one selected space was scored as slightly inappropriate overall, the remaining spaces were measured as appropriate. Moreover, some functional attributes received a lower score. The experts scored El-Khaldin Garden at 2.5 for the space linkage and access; this was due to appropriate scores for car access, parking availability around the space, and accessibility by the public transportation (including buses, micro-buses and trams). However, the pedestrian access leading to the space or other locations was slightly inappropriate and the suitability of the pavements to users with special needs was inappropriate due to their poor condition and unsuitable width; moreover, they were sometimes busy or occupied by street vendors. In terms of diversity and complexity, the highest category for El-Khaldin Garden was measured as appropriate with a score of 3; this was because the indicators were evaluated as appropriate. In contrast, for the microclimate considerations, El-Khaldin Garden is extremely inappropriate with the lowest score of 1; this was due to the lack of natural shade or features and the absence of water elements to reduce the heat.

In **Saed Zaghloul** the linkage and access category was measured as suitable with a score of 3; this was because the three indicators were measured highly appropriate, namely car access, public transportation and parking availability. However, the pavement for users with special needs was scored as unsuitable. While the diversity and complexity was valued 3.1 the highest amongst the functional aspects. Although the range of space usage was slightly limited, the diversity and complexity of the surrounding buildings were highly convenient. Finally, the microclimate category was not supported with a score of 1.3 due to the absence of shade features; furthermore, despite the presence of water elements these are not working most of the summertime.

Mohamed Ali Square was also supported in terms of linkage and access with a score of 3, as the same three indicators as the previous squares were deemed highly applicable; however, the pavements within the space are not suitable for wheelchairs or users with special needs. Diversity and complexity again is scored the highest in the functional aspects and among the selected spaces it was the highest for this square with the score of 3.3. This was because all the indicators were acceptable except for the diversity of uses amongst the surrounding buildings, which was measured as highly diverse with a perfect score of 4. In comparison, the climate consideration was valued as slightly inappropriate at 2 as there is a lack of shading features, whilst the fountains are mostly closed and not working throughout the year.

In **Ahmed Orabi Square**, the three categories are measured as appropriate. The linkage and access to the space is scored at 2.7 with two indicators highly applicable, namely public transportation and car access. However, the pedestrian network is marginally inappropriate, and the pavements are not suitable for users with special needs. The second highest supported category was diversity and complexity and rated at 3.1; this was because two indicators were highly appropriate, namely the usage of the surrounding buildings and the diversity of users. Nevertheless, the complexity of colours is slightly inappropriate. Surprisingly, the microclimate consideration valued as appropriate, thus, Ahmed Orabi is the only space among the five that scored 2.5 by providing natural shade and fountains to reduce the summer heat; nevertheless, it did not provide shade features.

Abu El-Abbas Square had one indicator in the appropriate linkage and access category that was highly appropriate with the perfect score of 4. Nonetheless, it has two indicators that failed and were not supported, namely the availability of parking and the suitability of the pavements to special needs users. Moreover, there was a profoundly different score in the

usage of surrounding buildings, which was evaluated as appropriate in the diversity and complexity category. However, it failed in the climatic consideration due to the notable lack of shades features.

7.2.2.2 Social Aspects

Figure 7-7 is adapted from the Table 7-1 (page 274) and represents the evaluation of the three categories for the social aspects of the selected spaces. It is clear that the five selected spaces are appropriate in the outline and design features category as it is the highest category for the selected spaces. However, permeability and movement, and function and use categories appear appropriate except for one space that was valued as slightly inappropriate for both.

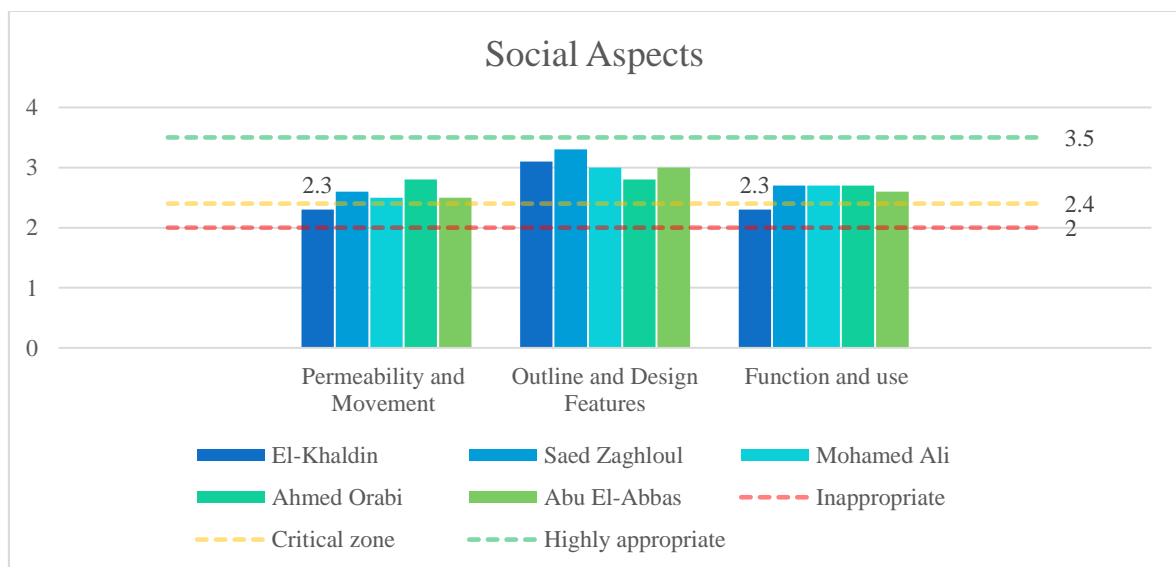


Figure 7-7 Total of the social aspects for the selected spaces
(source: the researcher)

Furthermore, the social aspect was appropriate for the totals of the five selected spaces as mentioned in Table 7-1 and Figure 7-5. Some attributes received a lower total score and this was the same for various indicators in Table 5-2 (page 172). Based on the experts' assessment, **El-Khaldin Garden** was measured as appropriate in the outline and design category with a score of 3.1. This was due to the scores of 'highly appropriate' for three indicators, namely the proportion between the masses and the space, the sense of enclosure, and the human scale. However, the richness of pattern was slightly inapplicable. It is evaluated as marginally inappropriate in two categories with a score of 2.3; firstly, permeability and movement concerned connectivity with other public spaces and was slightly inappropriate. This was not supported by two indicators that related to multiple

entrances and the suitability of the space for users with special needs. Secondly, its function and use was evaluated as slightly inappropriate in four indicators including the transaction area, comfort and variety in choice of seating, and, street vendors, whilst the spaces are not supported by access to cafes, restaurants and public toilets.

In **Saed Zaghloul** three categories are applicable; the highest rate is the second category that relates to the design features at 3.3. This comprised two highly valid indicators, which were the spatial character and sense of identity, and the meaning value. The permeability and movement scored 2.6 as its indicators were scored as appropriate, excepting its slight unsuitability for users with special needs. Moreover, the function and use were scored at 2.7 with two highly appropriate indicators. This is because the space is a destination for users and is family friendly; meanwhile, comfortable seating and the activities of users were valued as slightly inappropriate, and the variety of seating choices to suit individual or group activities was not supported.

Also, **Mohamed Ali Square** was valued as appropriate in all social aspects; surprisingly, the permeability and movement were scored at 2.5 while the majority of the indicators were rated as slightly inappropriate, including the axes directed to a focal point, the suitability of pedestrian lanes widths and the connectivity with other public spaces. However, the space was not supported by the suitability for users with special needs, whilst only the multiple entrances and paths were considered highly appropriate. The second category was the design features, which scored 3, as all indicators were appropriate except for the meaning value, which was highly rated. Moreover, the function and use category contained three indicators that were highly appropriate, including the destination and transaction space for users, plus the family-friendliness. Nevertheless, the accommodation of different activities and the access to public toilets were slightly inapplicable. Moreover, the space was not supported by the variety of seating choices and the hyper-growth of street vendors.

A similar situation arose for **Ahmed Orabi Square**, for which the social attribute group total was rated as appropriate, with two categories valued at 2.8. Thus, the permeability and movement group had two indicators scored as highly applicable, namely the axial direction and the suitability for all group ranges; however, it also contained two indicators that were in the critical zone, which were the slight disconnection to other spaces and its marginal unsuitability for users with special needs. Moreover, the design features and outline group held valuable meaning, although the appearance is slightly uncoordinated with the surroundings and the pattern elements. Finally, the function and use of Ahmed Orabi was

valued at 2.7 although four indicators were highly applicable. This is because the space is a destination and transaction area for users, and is family and ethically friendly. The space was considered slightly unfavourable in terms of its use for social/political/religious events, and was evaluated as inappropriate for its accessibility to public toilets and the hyper-growth of street vendors.

Finally, **Abu El-Abbas Square** scored 2.5 for its permeability and movement category. The space itself cannot be entered, which explains the inappropriate rating for this indicator; furthermore, it is unsuitable for the users with special needs as the pavement widths are slightly unsuitable. However, the space is highly appropriate for its connectivity with other public spaces and is suitable for all user ages. When considering the outline and design features, this scored 3. More than the half of the indicators were highly applicable, namely the special character and sense of identity, the proportion between the masses and space, the containment of special meaning, and the relationship of human scale to the space. However, the appearance is slightly uncoordinated. Additionally, the space was not supported by the richness and variety of pattern elements. Lastly, the function and use category scored 2.6; this is a result of the highly appropriate indicators, which included: being a destination for users and tourism, being used to celebrate social and religious events, and its accessibility to cafes and restaurants. In contrast, the highly inappropriate indicators included comfortable seating and a variety of choice, access to public toilets, and the unauthorised hyper-growth of street vendors.

7.2.2.3 Perceptual Aspects

Figure 7-8 is adapted from Table 7-1 (page 274) and represents the evaluation of four categories for the perceptual aspects of the selected spaces. It is clear that the five selected spaces are appropriate in the place identity and character category for which the rates are the highest amongst the selected spaces. In terms of safety and security, four spaces were rated as appropriate, except for Abu El-Abbas square, which was not supported by safety and security overall. However, visually pleasing and appropriateness is supported in only one space, and three spaces are in the critical zone, whilst Abu El-Abbas again is not supported. Finally, the five selected spaces are not supported by place management and maintenance, for which the spaces are valued inappropriate.

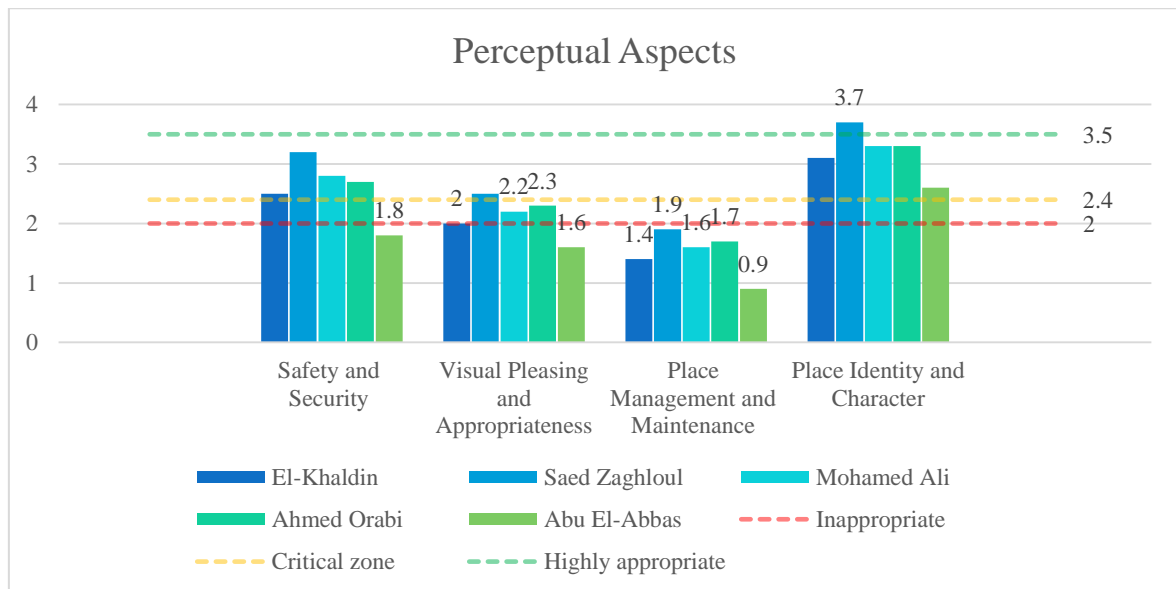


Figure 7-8 Total of the perceptual aspects for the selected spaces
(source: the researcher)

It is clear that the perceptual aspect is the lowest for the five selected spaces. This results from the scoring that value only two spaces as appropriate, whilst two others are critical zone (slightly inappropriate) and one space fails in the aspect, as mentioned in Table 7-1 and Figure 7-5. Some attributes received a lower total score which was the same for various indicators (shown in Table 5-3).

Based on the experts' assessment, the overall perceptual attribute for **El-Khaldin Garden** was valued as slightly inappropriate. The space was scored as appropriate in two categories; firstly, in terms of safety and security with a score of 2.5 (whis was due to the presence of safety in four indicators including the parking, pedestrian crossing, visibility of the space during daytime and the presence of the females in the space). However, the safety of elders and access for users with special needs were slightly inappropriate; in addition, the space was not supported by lighting and was not visible at night. Moreover, the place identity and character was scored at 3.1; two indicators were highly appropriate as it is a part of a historical area and has architectural character; however, on the other hand, the space is not supported by its appearances as it does not present as elegant. It is scored as marginally inappropriate in the visually pleasing and appropriateness category with a score of 2; this was because only two indicators were considered appropriate, namely the attractiveness of surrounding buildings and the use of the seafront. Furthermore, three indicator values were slightly inappropriate including the layout and paving pattern attractiveness, and the arrangement of the seating areas. Furthermore, it was not supported by three indicators,

which related to urban furniture, lighting features and public art displays. In addition, with a score of 1.4, the space is not supported by place management and maintenance; moreover, the cleanliness indicator was marginally inappropriate as the space is not supported by the rest of indicators including soft and hard landscaping, lighting features, the maintenance of urban furniture, and the placement of waste disposal bins.

Saed Zaghloul is the only space valued as highly appropriate in the place identity and character category with a score of 3.7; it had a high score in two indicators related to the historical area and architectural character, plus it appears elegant. Additionally, the space valued two categories as applicable; firstly its security and the safety (scoring 3.2) with two highly safe indicators, namely the parking and the use of the space by females. Meanwhile, the rest of the indicators are valued as safe. Furthermore, the visually pleasing and appropriateness categories were scored at 2.5, although three indicators do not support the space: the attractiveness of the urban furniture, the lighting features and the paving pattern. Only the public art display was valued as highly appropriate and it had the highest score among the selected spaces whilst the rest of the indicators were measured as appropriate. Finally, again the space failed in the place management and maintenance category scoring 1.9 in total; its clean appearance was valued as appropriate and the maintenance of lighting features was measured as slightly inappropriate. Nevertheless, the rest of the category was assessed as inappropriate, including the soft and hard landscape, its urban furniture and the waste disposal locations.

Also, for **Mohamed Ali Square** the perceptual attributes were measured as slightly inappropriate. This was valued as appropriate in two categories, starting with the safety and security group with a rate of 2.8. This resulted from the safety of the majority of indicators excepting two; the space appears exceptionally safe for women, yet it is slightly unsafe for pedestrians crossing. Additionally, the place identity and character were rated at 3.3; this comprised two indicators scored as highly appropriate, namely the historical area and the architectural character. Nevertheless, the space was considered marginally inappropriate in terms of its elegance. The visual pleasing and appropriateness category was measured as slightly inapplicable with a score of 2.2; this comprised only one indicator that was considered extremely attractive (the surrounding buildings). In comparison, the attractiveness of the urban furniture, lighting features and paving pattern did not support the space, whilst the design use of the space and the seat arrangement for varying views were slightly inappropriate. The last category included a score of 1.6 and related to place

management and maintenance; this was influenced by the consideration that the space was not supported by the maintenance of the soft and hard landscape, light features, the cleanliness of the space, and the location of the waste disposals. The urban furniture was the only indicator that was slightly well-maintained.

Similarly, for **Ahmed Orabi Square** the perceptual attributes total evaluation was rated as appropriate, with two categories valued as appropriate as Mohamed Ali square. Thus, the safety and security group was scored at 2.7; it comprised one indicator that was highly appropriate, namely women safely using the space, and one indicator that was slightly unsafe, namely visibility in the daytime. The remaining indicators were considered appropriate. Additionally, the place identity and character group score of 3.3; two indicators were highly appropriate, including the space as part of a historic area, and its architectural character. The space was marginally unattractive in the visually pleasing and appropriateness category with a score of 2.3; this resulted from the fact that half of the indicators were valued as slightly inappropriate including the attractiveness of the urban furniture, the paving pattern, its surrounding buildings and the use of the view. Moreover, the space was not supported by the attractiveness of the lighting features. The place management and maintenance category failed with a score of 1.7, as only two indicators were slightly well-maintained, namely the hard landscaping and the urban furniture, while the rest of the indicators were not supported.

Finally, **Abu El-Abbas Square** is the only space that failed the perceptual aspects in total with a score of 1.7. The place identity and character category is the only group that was measured as appropriate with a score of 2.6; this was due to its evaluation as being a part of a historical area, and having architectural character. Nevertheless, the space is not considered elegant. Moreover, the space was not supported by all the other categories; two were valued as inappropriate whilst management and maintenance were valued as highly inappropriate. Firstly, the security and safety category score was 1.8, and the space is safe for use by women; moreover its parking area, pedestrian crossings, visibility by day and night and use by elders and people with special needs are considered safe. The evaluation for visual pleasure and appropriateness is 1.6; however, only two indicators were measured as attractive, including the design layout, and the surrounding buildings' use of the natural view. The space was not supported by the rest of indicators, namely the attractiveness of the urban furniture, the lighting features, paving pattern and art display, and the arrangement of the seats for views. The last category is the place management and maintenance which was

scored at 0.9. This was because the space is not maintained in the majority of indicators, including the hard landscape, lighting features, urban furniture plus the lack of cleanness and the placement of waste disposal bins in the space.

7.2.3 The Walking Tour Assessment

Figure 7-9 is adapted from Tables 5-4, 5-5 and 5-6; it represents the total average of the selected spaces and the evaluation of the functional, social and perceptual aspects alongside the overall total. The following conclusion presents the strengths and weaknesses of each space.

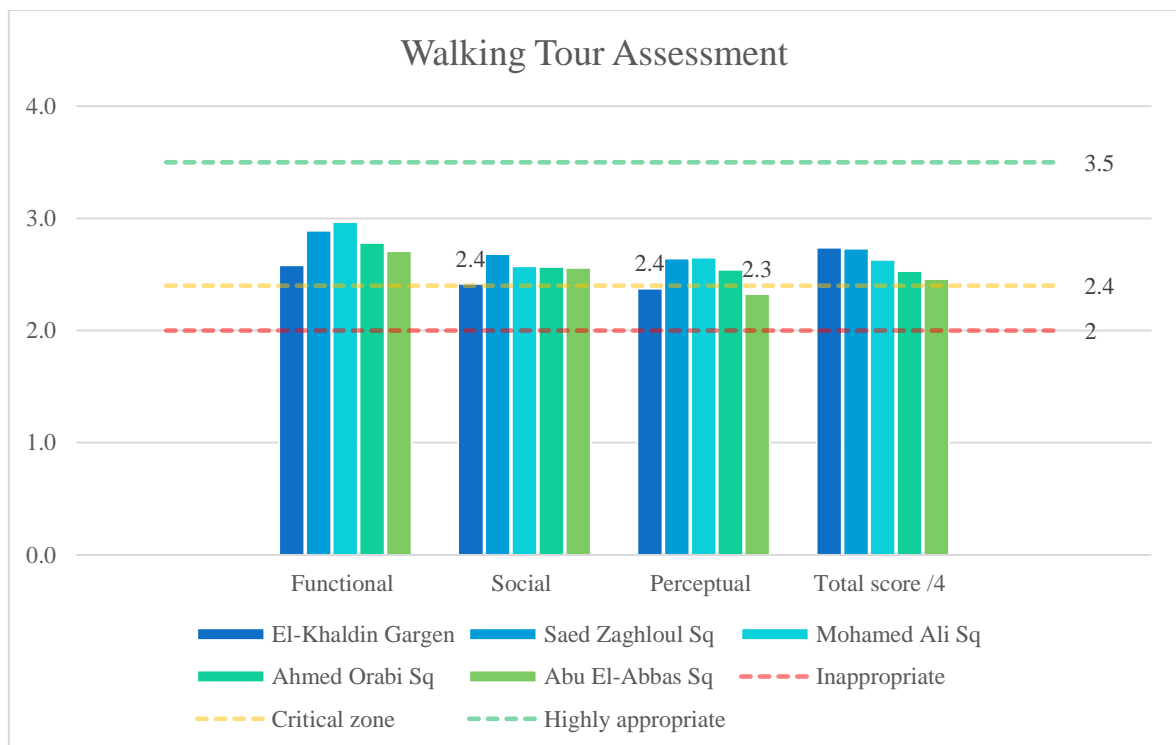


Figure 7-9 The walking tour assessment total conclusion chart
(source: the researcher)

Most of the three attributes received relatively average scores, which indicates an average degree of appropriateness. Key findings represent the shortcomings; however, this can be highlighted in the total score for the social and perceptual aspects, which is lower in El-Khaldin at 2.4, whilst the total score for the perceptual aspects in Abu El-Abbas was 2.3, which indicates a degree of inappropriateness as illustrated in Tables 5-5 and 5-6.

7.2.3.1 Functional Aspects

Figure 7-10 is adapted from Table 5-4 (page 195); it represents the evaluation of the twelve indicators for the functional aspects of the selected spaces. It is clear that the five selected

spaces are highly appropriate and appropriate in five indicators; namely, the accessibility, and the iconic features that appear the highest indicators for the selected spaces, including clear edges, which are crucial for the context and building harmony. However, from the uses, landscaping and environmental-friendliness are relatively weak compared to the rest of the set, and were scored between slightly inappropriate and inappropriate. The following conclusion presents the weaknesses of each space.

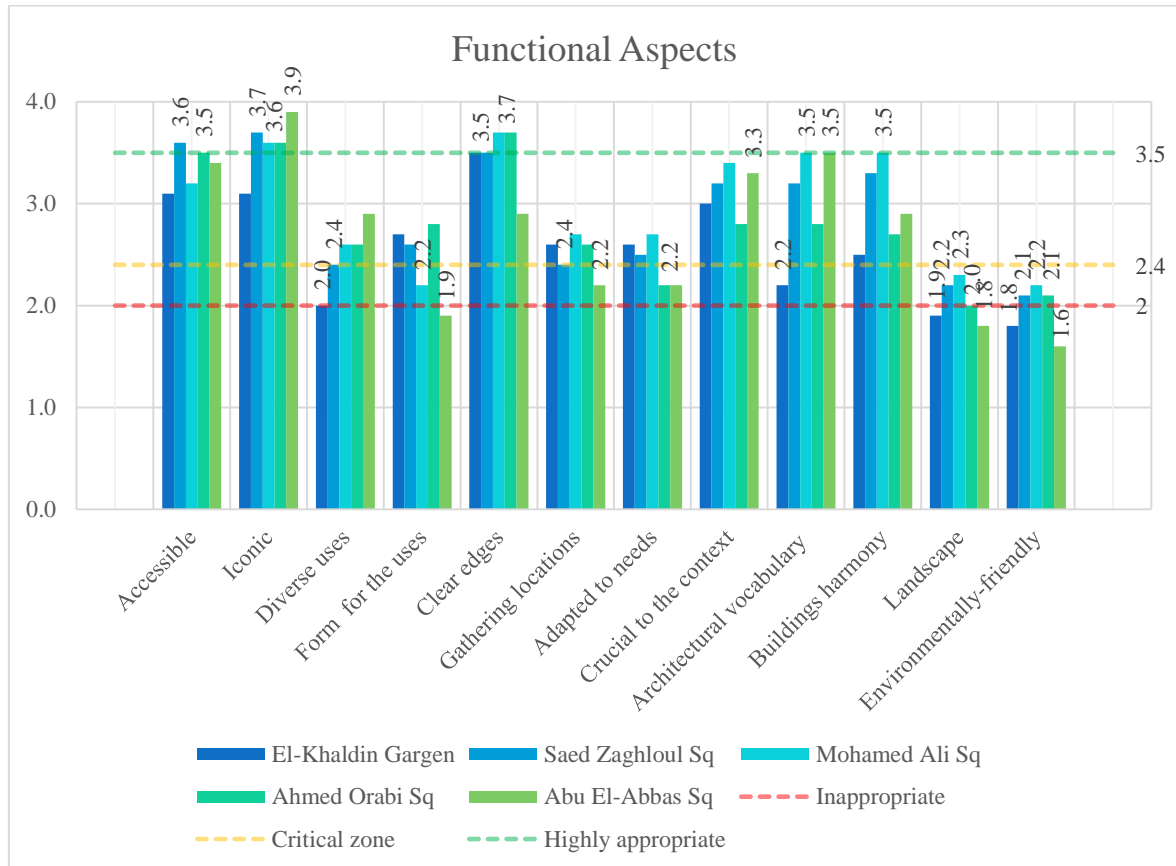


Figure 7-10 The functional aspects set of the walking tour assessment chart (source: the researcher)

Despite the fact that the five selected spaces received appropriate scores overall, some functional attributes received lower than the critical zone. In **El-Khaldin Garden**, the space covers diverse activities but scored 2 because of the lack of space for walking activities, which includes only sitting and relaxing but rarely eating. Moreover, the landscape feature qualities were scored at 1.9 resulting in the need for furniture maintenance, whilst its condition, better location for sea views, and environmental responsiveness scored 1.8. This is because the space lacks both sufficient outdoor seating and shade, which could potentially make it more appealing for use by more groups. Moreover, the architectural vocabulary scored 2.2 as the space is surrounded by two iconic buildings, namely the El-Quaed Ibrahim

mosque and the WHO building. Nonetheless, the other buildings around the area have lost their character due to overwhelm of buildings codes and unauthorised changes and heights.

In **Saed Zaghloul**, the diverse uses and multiple gathering locations seem slightly inappropriate as the space has limited areas for gathering, and the fountains and statue area also have a limited rough pavement leading to and within the space; this does not offer a feeling of comfort when walking. This is the same for the quality of the landscape features and the environmental reaction, which received marginally unsuitable scoring 2.2 and 2.1 respectively. This was due to the arrangement and orientation of the seat perpendicular to the sea view plus there is no shade in the square.

In **Mohamed Ali Square**, the form is slightly unsuitable at 2.2 for existing uses, as is the quality of the landscape features at 2.3 and the environmental responsiveness at 2.2. This is due to the shape of the square that is linear and its size that means that users cannot easily see the other side of the space. Furthermore, the quality of the furniture in the space is not well designed for the needs of people who want to sit with a view of the statue. Currently, the Mohamed Ali space is perceived as more of a roundabout than a public space; it is full of visitors everyday but does not consider children's needs or allow for a play area in the space. Although the space is fully shaded from surrounding buildings, the design does not consider rainy days that occur mainly in the winter season; accommodating this would mean that people could use the space more often throughout the year; this is especially important as the square is always used for administrative purposes.

In **Ahmed Orabi Square**, adaptation to users' needs 2.2 and its environmental responsiveness 2.1 is fairly inappropriate as the space does not have a pavement around it. This forces people to walk through the path with no accessibility, and only certain crossing areas enables user mobility within the traffic area which is not safe. There are no other options, although the government has put fences on the edges of the space to prevent the non-authorized booths from appearing; this does not consider users' needs as the space does not provide proper shades from the summer sun or winter rain and there no buffering areas to prevent or limit the noise level. The square's landscape quality features are inappropriate 2 due to the maintenance of cleanliness in the green space, the fountains, the quality of the seating area and the light features, which all need attention, replacement and responses.

Abu El-Abbas Square gathering locations and modifications scored 2.2, and is, to some degree, inappropriate due to the lack of any public service within or on the edge of the space, and the furniture is of an inferior quality and condition to be used and very limited. This

explain its score 1.8; in addition, the space is environmentally non-responsive due to the cleanliness of the space and the care plus maintenance, which resulted in the lowest score of the set 1.6/4.

7.2.3.2 Social Aspects

Figure 7-11 is adapted from the Table 5-5 (page 201), and represents an evaluation of the twelve indicators of the social aspects for the selected spaces. It is clear that the five selected spaces are highly appropriate and appropriate in two indicators; the accessibility by transportation is the highest indicator for the selected spaces, and accessibility from the urban context. However, diverse social activities, furniture serving users and activities, and accessibility for users with special needs are relatively weak compared to the rest of the set; these were measured between slightly inappropriate and inappropriate. The following conclusion presents the weaknesses of each space in the social aspects.

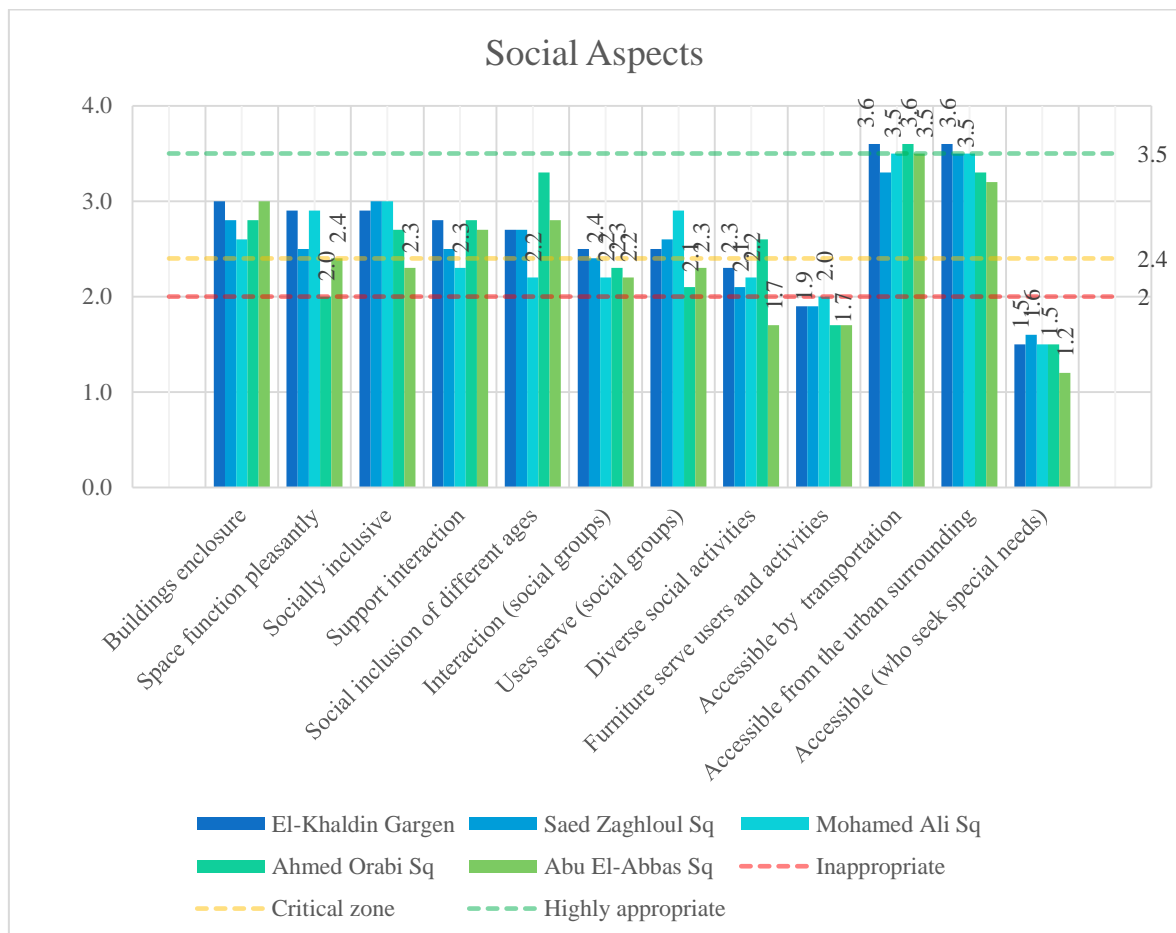


Figure 7-11 The social aspects set of the walking tour assessment chart (Source: the researcher)

On the other hand, social attributes were lower than the functional attributes resulting in a low score for **El-Khaldin Garden** 2.4. This was slightly inappropriate in the overall total,

as the space is reasonably unpleasantly functional 2.4 with the surrounding context due to its poor condition and location over a garage that is not at the same (ground) level of its surrounding. This difference sometimes gives the sense of disconnection from the urban fabric, as the space is marginally socially inclusive 2.3 due to the absence of a particular category; the space is mainly used by university students and users from the surrounding area. Also, the design of the space does not encourage interaction between the visitors 2.2, while the seating is arranged back to back with a green space in the middle and the gathering space, as a stage or small theatre, is in a deplorable condition and used as a trash area serving specific social groups 2.3. The garden does not host diverse social activities as there is no space for walking; therefore, people mostly visit the space to meet up, chat and enjoy the view with a degree of privacy from the surrounding streets. In addition, its furniture does not serve all users due to its limited design and variety that does not consider all ages and uses; both were scored inappropriate at 1.7. El-Khaldin is one of the spaces that is difficult to access by users with special needs, especially if they are wheelchair users as previously mentioned in section 6.3.2. The space does not provide designs or solutions that would make the space accessible and thus, its scores are the lowest in the set 1.2/4.

In **Saed Zaghloul** the overall score is appropriate, yet some indicators, such as hosting diverse social activities were, to some extent, unsuitable 2.3. This is due to the limitation in the uses of the space, either as a meeting spot for friends and people to gather for a break from work, studies or hectic life; however, there is no occasional use of the space. The furniture does not serve several users and activities, as the arrangement and orientation scored 1.9, and the accessibility for those with special needs is poor 1.5, which thus prevents users from reaching the statue area and the central axis of the square as entrances are limited to the waterfront side.

In **El-Mansheya square**, which combines Mohamed Ali and Ahmed Orabi squares. These have the same level of inappropriateness across the four attributes; the interaction between different social groups is limited 2.4 and 2.2, as are the activities hosted 2.1 and 2.2, and the furniture of the space serves only certain activities 1.9 and 2, moreover it is not comfortable for users with special needs 1.6 and 1.5 due to the rough surface and the condition of the pavements and paths in the square. Ahmed Orabi has two extra marginally unsuitable features, namely that the space does not encourage interaction in general 2.3 nor interaction between different ages 2.2 due to its limitations in use to administration and transportation.

The overall social features of **Abu El-Abbas square** were considered appropriate despite the fact that only the edges of the space are used; this explains its score as unpleasantly functional with the surrounding context 2. The reason for this is because people need to use the space so non-authorised spreading starts to grow around the area to meet people's needs. The space design does not serve and encourage general user interaction 2.3 and 2.1 since the garden itself has become a semiprivate area as the company that maintains the square and its landscape prevent users from accessing the garden as per its original use. There is no furniture to serve the space 1.7, yet people in the area try to adapt to its condition and, as previously mentioned, the accessibility is challenging for users with special needs to access without help.

7.2.3.3 Perceptual Aspects

Figure 7-12 is adapted from Table 5-6 (page 207) and represents the evaluation of the twelve indicators of the perceptual aspects for the selected spaces. It is clear that the majority of the perceptual aspects scored relatively low in the selected spaces; in particular, this includes the sense of safety at night, the reflection of the signs of different ethnics, the spatial experience, noise level and the personal space and privacy. The five selected spaces are highly appropriate and appropriate in two indicators; its memorable architectural character and the reflection of Alexandria's identity. The following conclusion presents the weaknesses of each space in the perceptual aspects.

The total score for **El-Khaldin Garden** is slightly inappropriate 2.4 due to the lack of sense of safety, especially amongst female use at night. This is due to poor visibility and light distribution, or absence and the space's architectural surrounding that slightly reflects Alexandria's identity due to the overriding the regulation and law of the building codes in the surroundings which affects the image of the city. The space does not reflect different cultures; even though there was information written in English, French, Greek and Arabic on marble, its condition is not readable; thus, the spatial experience is fascinating only for the sea view, although the physical quality of the space dominates any feeling of satisfaction although the space has so much potential to be fascinating. The noise level is unacceptable due to the traffic on the corniche side and the location of the tramline with no buffering design. Also, the personal distance is fairly inappropriate, but the design does not encourage any interaction due to the orientation of the furniture. Moreover, the human experience and attachment to the space are limited to the regular or frequent users of the space.

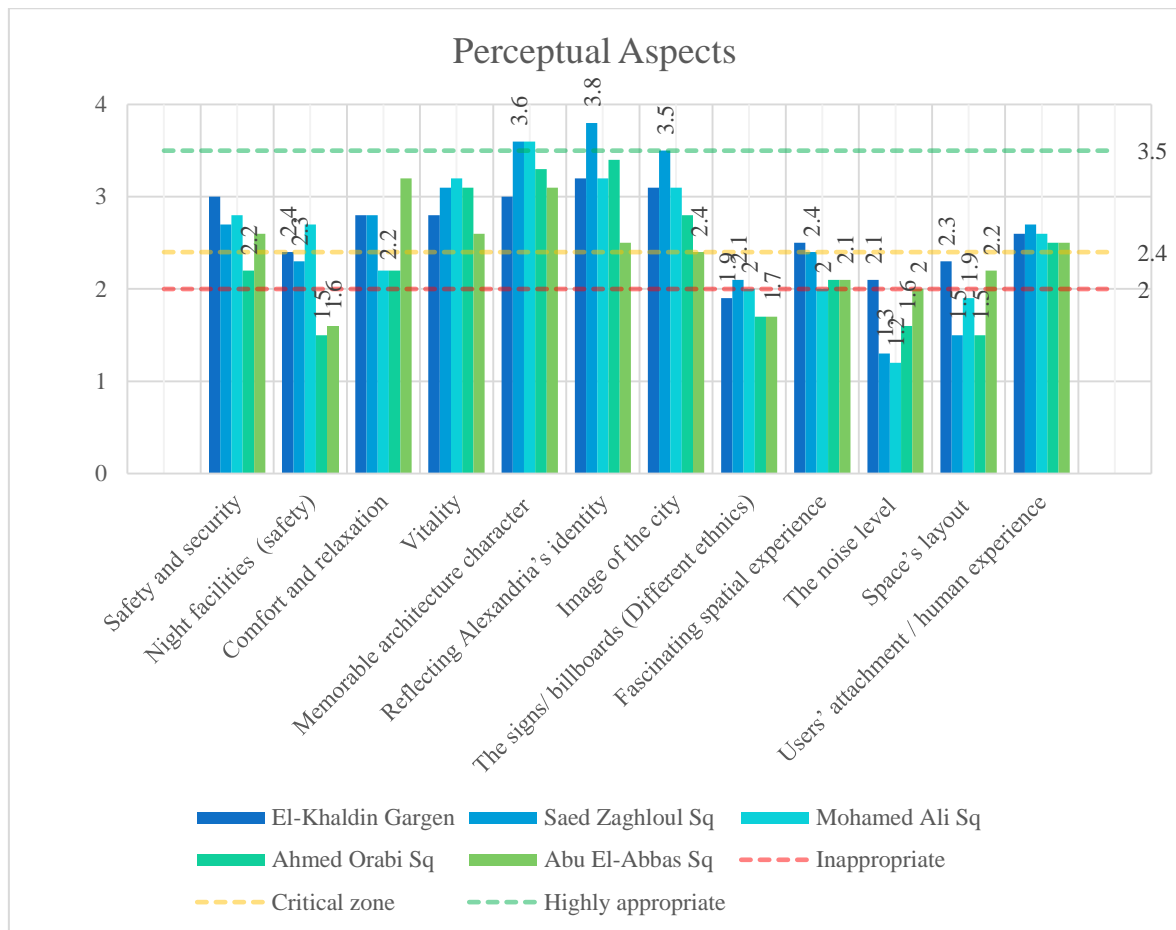


Figure 7-12 The perceptual aspects set of the walking tour assessment chart (source: the researcher)

In **Saed Zaghloul square**, the sense of safety at night 2.4, plus the spatial experience 2.5 are slightly inappropriate due to the noise level 2.1 in rush hour, and the distance in the layout of the lights and furniture 2.3. The space would have more potential with some changes, through which it could become more fascinating. The surroundings of the space have English billboards for hotels, café shops or banks but the space itself has no sign that refers to different cultures, such as the information in the space or the bus stop signs; this is why the experts scored it 1.9/4.

In **El-Mansheya Square**, the total score for Mohamed Ali space was the highest in the perceptual set at 2.7 and was scored as appropriate; meanwhile, Ahmed Orabi space scored 2.5 and was marginally inappropriate from the experts' point of view. Mohamed Ali does not support the sense of safety at night time due its linear shape, its size, and the distribution of lights within the space, which is insufficient to support the sense of security. In addition, most of the lighting features need more maintenance and the government has replaced it with two tall light columns on each edge of the square, which influenced the score of 2.3. Meanwhile, Ahmed Orabi received 2.2 as it was not comfortable and relaxing due to the

traffic and the hustle around the area that did not help the feeling of relaxation from the transportation hub. The signs in El-Mansheya are in different languages (namely English and French) from the old stores, but Mohamed Ali was scored at 2.1 and thus marginally inappropriate whilst Ahmed Orabi was inappropriate at 2 due to its quality and size. In addition, it contains just private shops, not many street names, and directions only written in English rather than the traditional French, Greek, Italian and English as well as Arabic. The spatial experience is different in Mohamed Ali and not that appropriate at 2.4; this is due to the bad condition and need for the restoration of its historical buildings; nevertheless, it still has the spirit of past glories but the use of the space and the traffic lowers the fascination. In comparison, Ahmed Orabi received a lower score at 2 as many buildings around the space have been overridden regulations, such as the Majestic Hotel that changes the spirit of the space. Moreover, the hustle, and the high volume of cars and people decrease the spatial experience of the El-Mansheya. The space is inappropriate in the noise level, as 1.3 and 1.2 were received; this is attributable to the noise from cars, buses using horns, and the sound of trams passing, as well as street vendors calling to catch the attention of visitors. Furthermore, the layout of the space furniture does not give much privacy as the benches are designed in squares shapes, and people are sat both back to back and too close; thus, it is difficult to hold a private conversation.

For **Abu El-Abbas** the total perceptual factors are the lowest in appropriateness at 2.3. The space does not support the sense of safety at night (at 1.5) due to limited light facilities alongside the presence of panhandlers and street vendors. This is combined with a lack of security and CCTV, which is especially important at nighttime. The sense of comfort and relaxation is fairly inappropriate due to the condition of the area and the quality of the space. However, the location has so much more potential due to its fascinating view and history; thus, with some care and restoration the square could be tourist attraction. The space lacked billboards that reflected different ethnicities which explain its score 1.7 for diversity; whilst the spatial experience is somewhat inappropriate and cannot be described as fascinating 2.1 due to the condition of the surroundings and space and the lack of facilities, the noise level and the layout that reflects personal distance is unsuitable at 1.6 and 1.5. Moreover, there is significant noise from trams, cars and street vendors plus the local funfair. The space has a personal value for older generations of Alexandrians, but it may not hold as great an attachment to the new generation due to the quality of the space. This is not very encouraging, as it suggests that, nowadays, only young fine art and architectural students are

likely to develop an attachment to Abu El-Abbas due to their field trips to draw the landscape of the area.

7.3 User Perceptions

The vitality of the case study spaces was reported in the previous chapter , which evaluated the urban design and the observation of users' interactions with the spaces. At this stage, it is essential to determine what those for whom the spaces are designed for think about the spaces' functional, social and perceptual aspects. As mentioned in Chapter 4, a questionnaire was designed to explore users' reactions, and 288 were returned complete. A random sample was applied in order to consult users were from all locations, including Alexandria; this enabled the collection of data from those who do and do not use these spaces. This approach also aimed to determine the issues that prevent potential users from using and enjoying the spaces analysed. Data was directly entered from the questionnaire into an SPSS database and Excel tables for analysis. After entering all questionnaire responses into the database, the data was cleansed to identify inconsistencies and outliers. Producing frequency figures for each question and then examining the outliers enabled this. Then, cross-tabulations were used to identify nonsensical responses.to questionnaire.

Public space is a product of planning and design. This section concerns the product's quality from a user level where there is no clear division between the two terms planning and design. Therefore, planning and design were addressed as one overlapping subject. The section starts by evaluating the socio-demographic nature of the users, their evaluation of the contribution of case study spaces to the city including the visual preferences, and social, functional and perceptual aspects. Then it assesses the active engagement of users in the spaces by evaluating their activities. It finally investigates the unmet needs of current and potential users.

7.3.1 Users' Reactions

The current research aims to explore the factors that determine the transformation of port cities. It tries to understand the physical/morphological and sociocultural attributes of public spaces on the waterfront in terms of their facilities and use (people-based approach) and sense of place. It also aims to evaluate, from both professional and user perspectives, the degree to which the current physical features of the Eastern Harbour squares provide an appropriate context for users' diverse activities.

Thus, this research quantitatively analyses the data gathered from the questionnaire that was distributed to people in Alexandria who agreed to respond. The city of Alexandria was used as a case study and represents an example of a port city, where five main squares were specified for the current analysis; Saed Zaghloul Square, El-Khaldin Garden, Abu-El-Abbas Square, Mohamed Ali Square, and Ahmed Orabi Square. As both Mohamed Ali Square and Ahmed Orabi Square lie within El-Mansheya in Alexandria city, they are sometimes referred to as one place.

7.3.1.1 Visual Preference Discussion

In response to Q5, it was found that Saed Zaghloul square was the most likeable with the highest frequency at 136; meanwhile, El-Khaldin Garden was the least likeable with the lowest frequency of 140 as shown in Table 6-6 and Figure 6-30 (page 239). This result was mostly expected due to the findings from the previous investigation tools.

However, in the selection breakdown by age group there was a difference in order noticed first in the 19-25 age group, and then 55+ age group, as shown in Table 7-2. The 19-25 age group selected Saed Zaghloul as the most likeable place at 63%; this was followed by El-Khaldin at 38%. The reason of their selection (especially for El-Khaldin) can be explained by their usage during weekdays as it lies close to the University of Alexandria's Faculty of Medicine and Pharmacy and would thus be frequented by students. In terms of the age group 55+, they rated Abu El-Abbas in the third place at 28%; this could be influenced by their memory of the urban space and its connection with religious events, which is clarified and confirmed in Q9.

Age	Order	El-Khaldin	Saed Zaghloul	Mohamed Ali	Ahmed Orabi	Abu El-Abbas
19-25	1	7	25	2	1	5
	2	15	8	12	5	0
	3	5	4	14	8	9
	4	4	2	7	21	6
	5	9	1	5	5	20
Grand Total		40	40	40	40	40
55+	1	1	12	9	0	7
	2	1	1	13	11	3
	3	1	10	4	6	8
	4	3	6	2	10	8
	5	23	0	1	2	3
Grand Total		29	29	29	29	29

Table 7-2 Spaces that participants in 19-25 and 55+ age groups liked the most
(source: the researcher)

Figure 7-13 and Figure 7-14 illustrate the trend line of the 19-25 and 55+ age groups, and the public spaces whose totals changed the order. Based on the participants' responses (displayed in Table 6-7), it was found that Saed Zaghloul Square was thought to represent the city of Alexandria followed by Abu-El-Abbas Square and Mohamed Ali Square with frequencies of 253, 210 and 210 respectively.

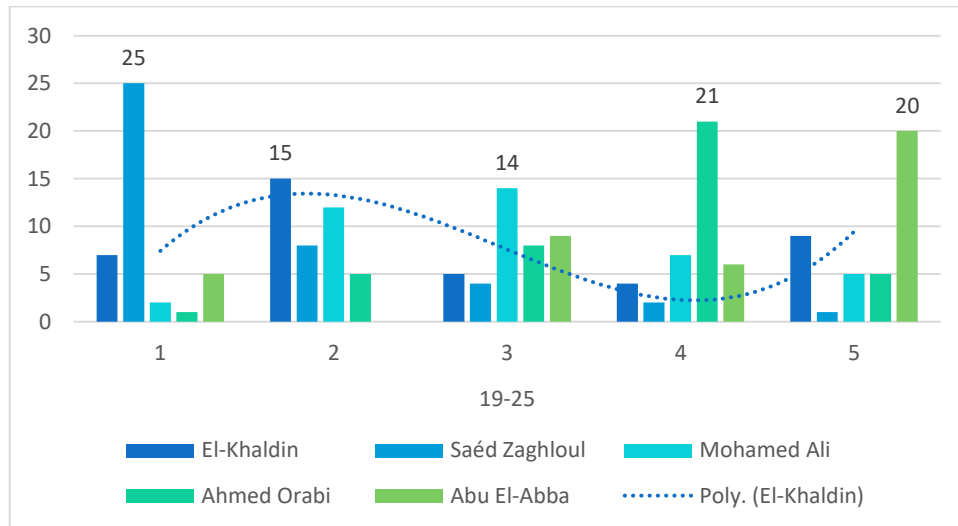


Figure 7-13 Graph showing the order of the spaces according to the 19-25 age group (source: the researcher)

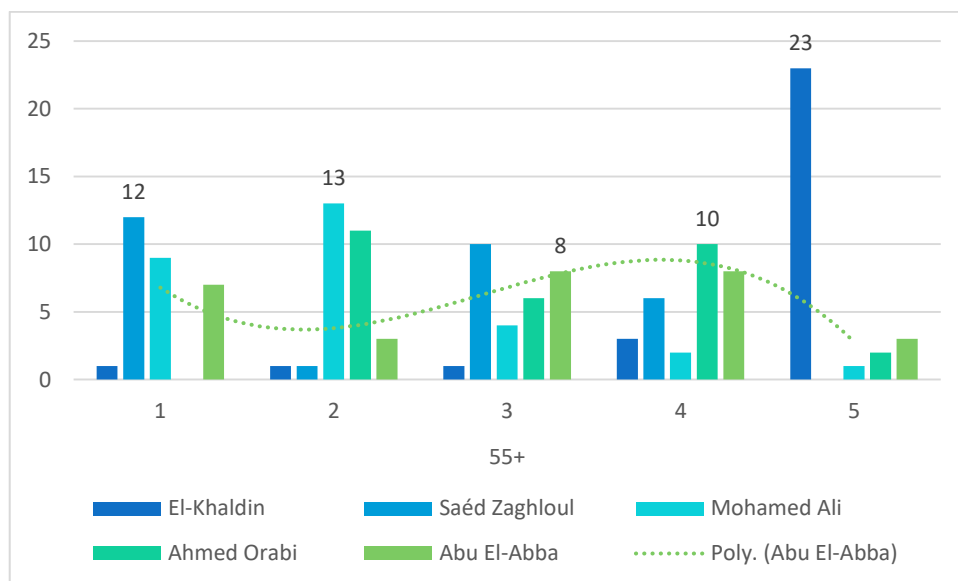


Figure 7-14 Graph showing the order of the spaces according to the 55+ age group (source: the researcher)

Furthermore, Saed Zaghloul Square was given the highest frequency of 267 followed by Mohamed Ali square and Ahmed Orabi Square with frequencies of 235 and 181 respectively (as shown in Table 6-8). Moreover, by asking participants to select the three spaces that they pass by the most, it was found that Saed Zaghloul Square has the highest frequency at 270,

then Mohamed Ali Square with a frequency of 225; whilst the lowest frequency was for Ahmed Orabi Square at 187.

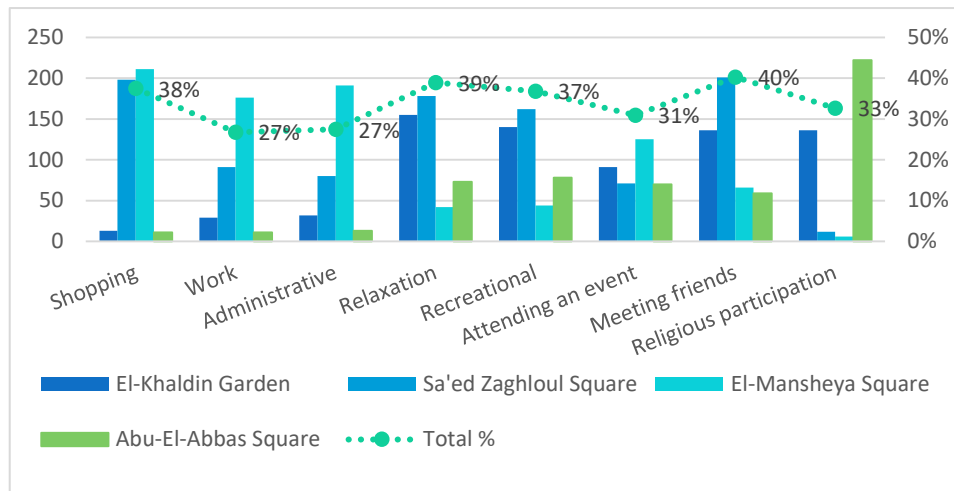


Figure 7-15 Applicable purposes/reasons for visiting each square (source: the researcher)

Figure 7-15 illustrates the different purposes of the visits to each square and clarifies that Abu El-Abbas and El-Khaldin are similar in their fluctuating trends; both are rarely visited for shopping, work and administrative purposes, whilst the numbers start to steadily increase for Abu El-Abbas in terms of relaxation, recreation, attending events and social purposes. However, this significantly increases for El-Khaldin and remained level in terms of religious reasons, while Abu El-Abbas increased significantly. Also, the graph illustrates a contrast between the previous two squares; thus, Saed Zaghloul and El-Mansheya squares are highly visited for commercial reasons and rarely frequented for religious purposes. It also illustrates that residents of Alexandria mainly use the squares and public spaces to meet friends (40%), relax (39%), shop (38%) and for recreation (37%). Overall, it clearly shows participant perceptions of the main function for each square supported by the number of nominations. Therefore, El-Mansheya is understood as mainly used for necessary activities, while Saed Zaghloul and El-Khaldin are perceived as used for social and optional activities and Abu El-Abbas for optional events.

Age	Purposes for the visit	El-Khaldin	Saed Zaghloul	El-Mansheya	Abu El-Abbas
19-25	Shopping	2	30	29	1
	Work	3	15	23	0
	Administrative	4	9	28	2
	Relaxation	27	26	5	9
	Recreational	22	25	6	12
	Attending an event	18	14	17	9
	Meeting friends	25	31	11	8
	Religious participation	25	2	1	29
Grand Total (19-25)		40	40	40	40

Table 7-3 Applicable purposes/reasons for visiting each square for the 19-25 age group (source: the researcher)

Table 7-3 presents the purposes that underpin the reason for visiting El-Khaldin Garden amongst the 19-25 age group. This places the space as the second most preferable or likeable space for this age group (Q5) after Saed Zaghloul. Figure 7-16 illustrates the percentage of users from the 19-25 age group; it is clear that the majority (68%) use the space for relaxation (55%), recreation (63%), for meeting friends and for religious participation. In terms of the 55+ age group, Figure 7-17 shows that 86% visit Abu El-Abbas square, which places it third most likeable after Mohamed Ali square (for religious participation).

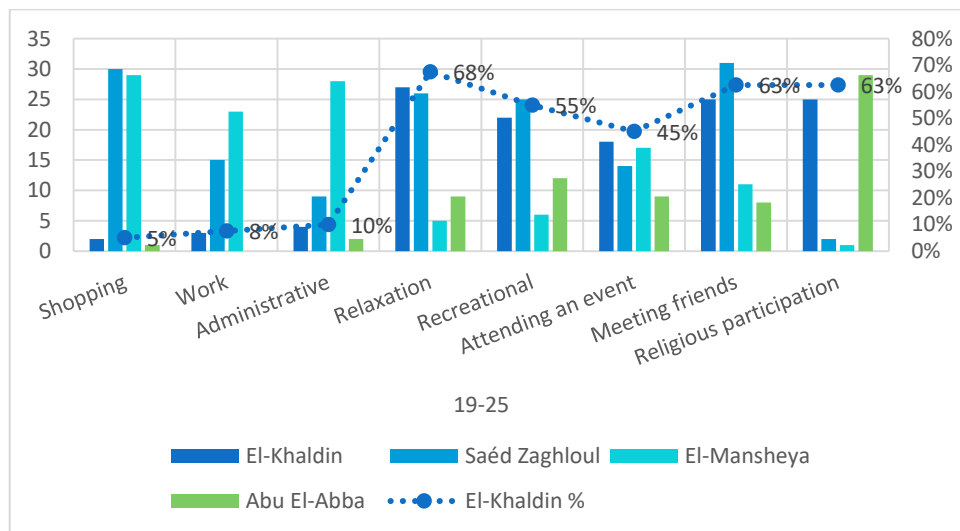


Figure 7-16 Chart showing applicable purposes/reasons for visiting each square for the 19-25 age group (source: the researcher)

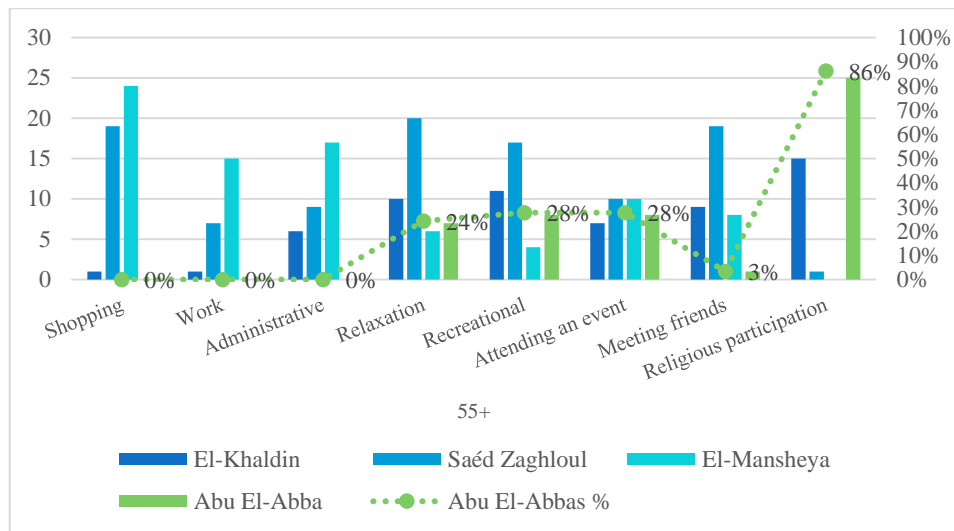


Figure 7-17 Chart showing applicable purposes/reasons for visiting each square for 55+ age group (source: the researcher)

Moreover, by asking participants to select the three spaces they pass by the most, it was found that Saeed Zaghloul Square has the highest frequency at 270, then Mohamed Ali Square at 225, whilst the lowest frequency was for Ahmed Orabi Square at 187. However, Table 6-10 and Figure 7-18 show that the 19-25 age group place El-Khaldin in the top three squares visited and the reasons mentioned were nearby the University and library, and the access to transportation routes.

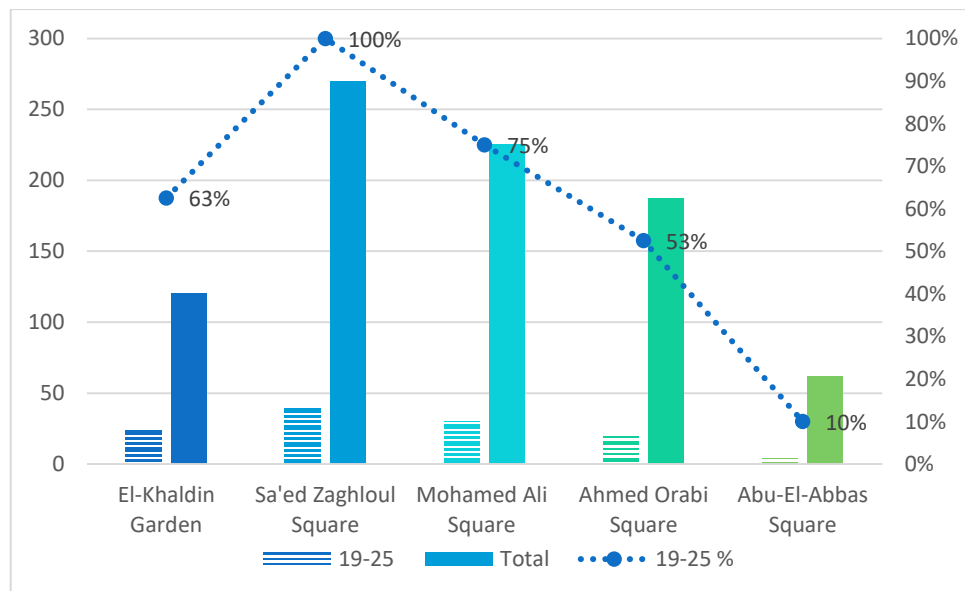


Figure 7-18 Chart shows spaces the 19-25 aged participants passed the most, with percentages (source: the researcher)

7.3.1.2 Functional Discussion of Findings

It was found that the contextual function of El-Mansheya and Saed Zaghloul were rated the highest and the participants are confident that both spaces are in central location, are a destination or passing by node, and freely accessible (Figure 7-19). In comparing Figure 7-19 and Figure 7-20, which combines strongly agree and somewhat agree, it seems the participants are not certain about El-Khaldin and Abu El-Abbas. This is evidenced in the first graph; both show a dotted line as they are under the 50%. The main exception to this is the free accessibility of El-Khaldin, which was 52%, whilst the second increased to over 60%.

That might be caused by El-Mansheya and Saed Zaghloul squares, which are the most known and busiest squares in Alexandria in general. For Abu El-Abbas square, it can be considered that participants selected 'freely accessible' based on the surrounding area of the space rather than the inner garden, which is not allowed to be used.

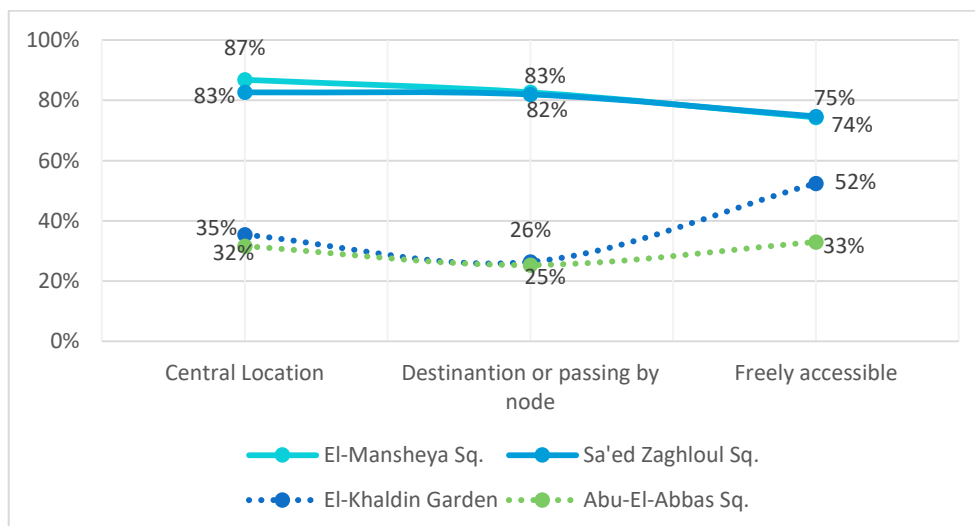


Figure 7-19 Chart shows the contextual function aspects of the spaces percentage (source: the researcher)

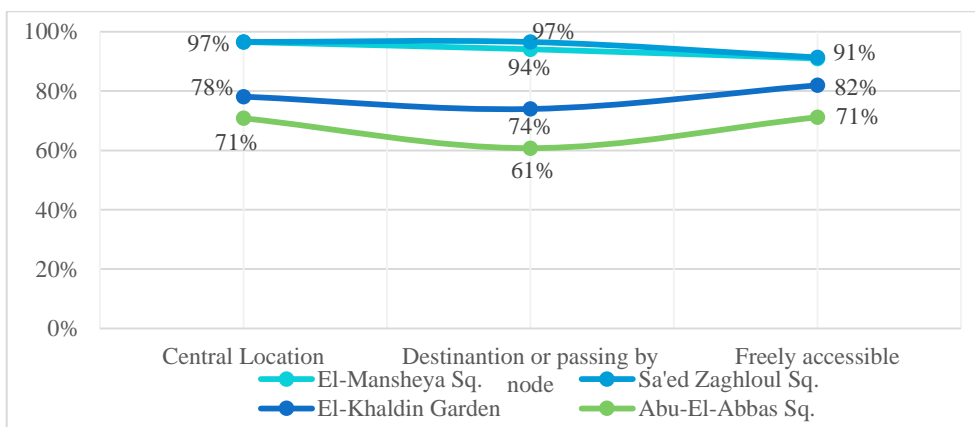


Figure 7-20 Chart shows the contextual function aspects of the spaces combined strongly agree and somewhat agree percentage (source: the researcher)

For the morphological function, Figure 7-21 shows that respondents agreed that El-Mansheya and Saed Zaghloul are unique in size, view, location and timespan. However, it also illustrates how people perceive each space, and it is clear that El-Mansheya's uniqueness strongly relates to its large size. Although it is divided into two squares, Mohamed Ali and Ahmed Orabi, each square is larger than the three others. Moreover, the strong agreement (82%) on the history and lifespan of Mohamed Ali square are influenced by the fact that it was the first modern European square in the city, dating from the 1830s. The uniqueness of Saed Zaghloul square was influenced by its view and location on the waterfront. Moreover, the uniqueness of Abu El-Abbas is justified by its location by the sea and the history of the mosque within the square.

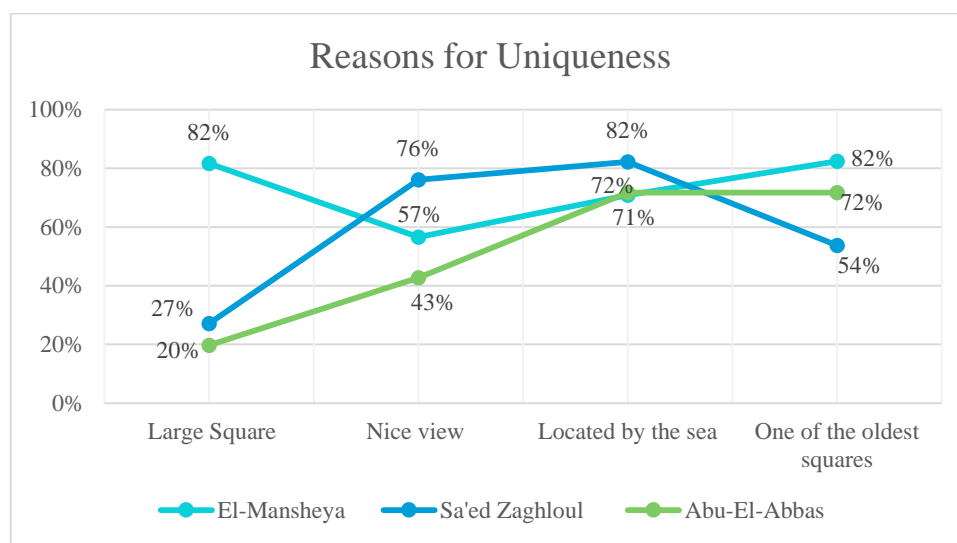


Figure 7-21 Chart shows the morphological function aspects of the space's uniqueness, by percentage (source: the researcher)

When considering the remembrance factor, the analysis of El-Mansheya square relates to its cosmopolitan and political history; this is the same for Saed Zaghloul and Abu El Abbas, which are remembered due to the mosque and cosmopolitan history. Indeed, this was the reason of the rebuilding of the mosque by an Italian architect. Reasons for this distinction reveals that the participants rated El-Mansheya and Saed Zaghloul squares while Abu El-Abbas was passed by for only 54%. Abu El-Abbas scores along the dotted line because it did not pass 50% (Figure 7-22); however, if the strongly agree (1) outcome is added to somewhat agree (2), it comprises 69% for its architectural style, 50% for the hard-landscaping, and 68% for the soft-landscaping.

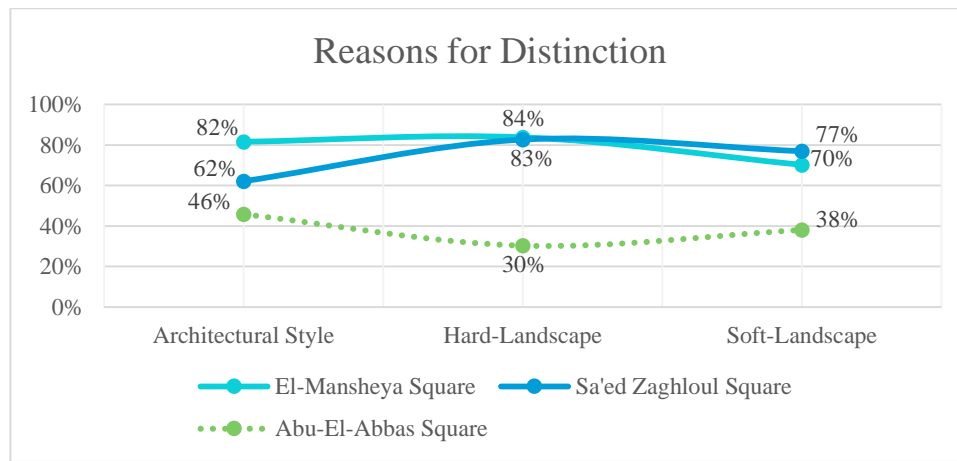


Figure 7-22 Chart shows the morphological function aspects of the space, by percentage (source: the researcher)

7.3.1.3 Social Discussion of Findings

It was found that, from the users' perspectives, all the selected spaces support activities, and this was also expected from the observations, although a slight difference was noted when combining the strongly agree with the somewhat agree data, as shown in Figure 7-23. It is clear that the necessary activities are supported in El-Mansheya and Saed Zaghloul squares at 95% and 91% respectively, and in El-Khaldin garden at 62%. The user perspectives agreed that Abu El-Abbas square is not used for necessary activities. Moreover, optional activities are supported in the four spaces, although mainly in El-Khaldin at 95%. This was not expected as it was the least likeable space and the least visited for different purposes. In comparison, Saed Zaghloul and El-Mansheya were calculated at 89% and 86% respectively, and Abu El-Abbas at 73%. Finally, the social activities were supported in the selected space, and the scores were for El-Khaldin 90%, Saed Zaghloul 85%, El-Mansheya 81% and Abu El-Abbas 78%.

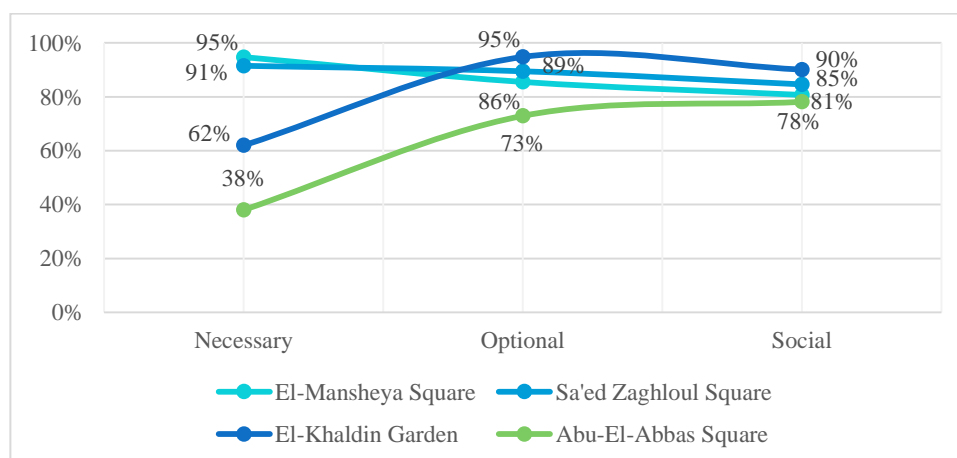


Figure 7-23 Chart shows the supported activities of the spaces, combining the strongly agree and somewhat agree percentages (source: the researcher)

7.3.1.4 Perceptual Discussion of the Findings

For this section, the results were unexpected, especially for Q28 and Q29. El-Khaldin was not associated with historical events or famous characters, although it accommodates a mosque named and designed as a memorial of Ibrahim Pasha; furthermore, the public space was correlated with the Egyptian Revolution of January 2011, which is a notable historical event. When this question was broken down for Saed Zaghloul, it was unpredicted that 47% (the majority) selected 'no' to a connection with events, while the royal wedding was associated with it when was known as El-Ramlh square. The most unexpected answers were for Q29, when El-Khaldin was selected for its preserved historic landscape elements. However, there is nothing left or preserved from the original square when it was changed in the 1970s; this was when the whole square was elevated on a garage building. Nevertheless, all group ages selected 'yes' to this question.

7.3.2 Empirical Study and Findings

This research uses the quantitative analysis of the questionnaire distributed to people in Alexandria who agreed to respond to the questionnaire by hand and online. The city of Alexandria is used as a case study and an example of a port city, where five main squares were specified for the analysis; Saed Zaghloul Square, El-Khaldin Garden, Abu-El-Abbas Square, Mohamed Ali Square, and Ahmed Orabi Square. Furthermore, Mohamed Ali Square, and Ahmed Orabi Square lie in El-Mansheya within Alexandria city, and sometimes they are referred to as one place in this research. SPSS (version 24) has been used in the analysis, where a correlation and regression analysis have been conducted to evaluate the impact of user perceptions on their satisfaction with these public spaces.

7.3.2.1 Data Testing using Validity and Reliability

Table 7-4 shows the results for the validity and reliability of the satisfaction variable, which was conducted to test for the overall satisfaction of users regarding each of the spaces under study in the city of Alexandria. It could be observed that all research variables are within the cut-off values for KMO (0.500), AVE (50%), FL (0.4) and Cronbach's Alpha (0.7).

The following section discusses the relationship between the overall satisfaction and perception of users regarding each space. The analysis is conducted using correlation and regression analysis.

Variables	KMO	AVE	Cronbach's Alpha
Satisfaction- Mohamed Ali Square	0.767	56.95%	0.748
Satisfaction- Ahmed Orabi Square	0.787	61.06%	0.787
Satisfaction- Saeed Zaghloul Square	0.822	57.09%	0.847
Satisfaction- El-Khaldin Garden	0.891	58.04%	0.896
Satisfaction- Abu El-Abbas Square	0.801	54.70%	0.822

Table 7-4 Validity and reliability testing

7.3.2.2 Testing the Relationship between Users' Perception and Satisfaction

Table 7-5 shows the correlation matrix for the relationship between user perceptions and their overall satisfaction with El-Mansheya Square. It was found that there is a significant positive relationship between user perceptions towards the following: central location, meeting point, freely accessible, unique, easily remembered, distinct features, supporting activities, symbolic function, historic notable, preserved landscape elements and overall satisfaction regarding El-Mansheya Square, as the correlation coefficients are greater than zero ($r > 0$), and the P-values are less than 0.05.

		1	2	3	4	5	6	7	8	9	10	11	12
Satisfaction El- Manshya	R	1											
	P-value												
	N	288											
Central location	R	.234**	1										
	P-value	0											
	N	288	288										
Meeting point or passing by node	R	.263**	.662**	1									
	P-value	0	0										
	N	288	288	288									
Freely accessible to pedestrians	R	.271**	.518**	.526**	1								
	P-value	0	0	0									
	N	288	288	288	288								
Unique	R	.264**	.482**	.419**	.360**	1							
	P-value	0	0	0	0								
	N	288	288	288	288	288							
Easily remembered	R	.202**	.289**	.282**	.254**	.470**	1						
	P-value	0.001	0	0	0	0							
	N	288	288	288	288	288	288						
Distinct features	R	.177**	.352**	.437**	.256**	.496**	.625**	1					
	P-value	0.003	0	0	0	0	0						
	N	288	288	288	288	288	288	288					
Supporting activities- El Mansheya	R	.151**	.305**	.341**	.221**	.416**	.342**	.398**	1				
	P-value	0.01	0	0	0	0	0	0					
	N	288	288	288	288	288	288	288	288				
Socially active	R	0.036	.146*	.140*	.118*	.238**	.248**	.235**	.437**	1			
	P-value	0.538	0.013	0.018	0.046	0	0	0	0				
	N	288	288	288	288	288	288	288	288	288			
Symbolic function	R	0.113	.514**	.349**	.352**	.276**	.267**	.159**	.252**	0.079	1		
	P-value	0.054	0	0	0	0	0	0.007	0	0.18			
	N	288	288	288	288	288	288	288	288	288	288		
Historic notable event(s) or person(s)	R	.191**	.300**	.262**	.228**	.415**	.391**	.313**	.327**	0.08	.332**	1	
	P-value	0.001	0	0	0	0	0	0	0	0.178	0		
	N	288	288	288	288	288	288	288	288	288	288	288	
Preserved landscape elements	R	.183**	.378**	.341**	.298**	.451**	.415**	.457**	.317**	.264**	.216**	.534**	1
	P-value	0.002	0	0	0	0	0	0	0	0	0	0	
	N	288	288	288	288	288	288	288	288	288	288	288	288

Table 7-5 Correlation matrix between users perception and satisfaction of El-Mansheya Square

Nevertheless, there is an insignificant relationship between user perceptions and socially active and overall satisfaction for El-Mansheya Square, as the corresponding P-value is greater than 0.05.

Table 7-6 shows the regression analysis for the effect of user perceptions on overall satisfaction in El-Mansheya Square. It was found that there is a significant positive effect for user perceptions towards freely accessible when considering other features with the overall satisfaction for El-Mansheya Square. This is because the regression coefficients are greater than zero ($B > 0$), and the P-value is less than 0.05. On the other hand, there is an insignificant effect for users' perception when considering other features on overall satisfaction regarding El-Mansheya Square. This is because the corresponding P-value is greater than 0.05.

Model El-Mansheya Sq.		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.263	0.365		3.458	0.001
	Central location	0.029	0.107	0.023	0.267	0.79
	Meeting point or passing by node	0.119	0.085	0.116	1.407	0.16
	Freely accessible to pedestrians	0.125	0.057	0.152	2.168	0.031
	Unique	0.268	0.166	0.122	1.618	0.107
	Easily remembered	0.305	0.257	0.092	1.186	0.237
	Distinct features	-0.153	0.262	-0.048	-0.584	0.56
	Supporting activities	0.048	0.128	0.027	0.377	0.707
	Socially active	-0.123	0.146	-0.054	-0.843	0.4
	Symbolic function	-0.323	0.33	-0.068	-0.977	0.329
	Historic notable event(s) or person(s)	0.19	0.221	0.062	0.861	0.39
	Preserved landscape elements	0.016	0.212	0.006	0.077	0.939

Table 7-6 Regression analysis for the effect of users perception on satisfaction of El-Mansheya Square

Table 7.7 shows the correlation matrix for the relationship between user perceptions and the overall satisfaction for Saed Zaghloul Square. A significant positive relationship was found between user perceptions towards the following: central location, meeting point, freely accessible, easily remembered, supporting activities, historic notable, preserved landscape elements and overall satisfaction for Saad Zaghloul Square, as the correlation coefficients are greater than zero ($r > 0$), and the P-values are less than 0.05. However, there is an insignificant relationship between user perceptions towards the following: unique, distinct

features, socially active, symbolic function and overall satisfaction regarding Saad Zaghloul Square, as the corresponding P-value is greater than 0.05.

		1	2	3	4	5	6	7	8	9	10	11	12
Satisfaction	R	1											
Saied Zaghloul Sq.	P-value												
	N	288											
Central location	R	.255**	1										
	P-value	0											
	N	288	288										
Meeting point or passing by node	R	.246**	.544**	1									
	P-value	0	0										
	N	288	288	288									
Freely accessible to pedestrians	R	.280**	.353**	.396**	1								
	P-value	0	0	0									
	N	288	288	288	288								
Unique	R	-0.045	.236**	.188**	0.069	1							
	P-value	0.443	0	0.001	0.245								
	N	288	288	288	288	288							
Easily remembered	R	.258**	.415**	.408**	.484**	.235**	1						
	P-value	0	0	0	0	0							
	N	288	288	288	288	288	288						
Distinct features	R	-0.046	.137*	.162**	0.045	.425**	.293**	1					
	P-value	0.44	0.02	0.006	0.451	0	0						
	N	288	288	288	288	288	288	288					
Supporting activities-El Mansheya	R	.218**	.354**	.316**	.221**	.170**	.263**	.126*	1				
	P-value	0	0	0	0	0.004	0	0.033					
	N	288	288	288	288	288	288	288	288				
Socially active	R	0.11	.260**	.168**	.144*	.130*	.202**	0.056	.444**	1			
	P-value	0.063	0	0.004	0.015	0.027	0.001	0.341	0				
	N	288	288	288	288	288	288	288	288	288			
Symbolic function	R	0.09	.228**	.148*	.212**	0.036	.217**	0.054	0.114	0.071	1		
	P-value	0.129	0	0.012	0	0.538	0	0.363	0.053	0.231			
	N	288	288	288	288	288	288	288	288	288	288		
Historic notable event(s) or person(s)	R	.146*	.166**	.234**	0.108	0.076	.217**	0.054	0.114	.202**	0.043	1	
	P-value	0.013	0.005	0	0.067	0.197	0	0.363	0.053	0.001	0.462		
	N	288	288	288	288	288	288	288	288	288	288	288	
Preserved landscape elements	R	.245**	.402**	.393**	.221**	.163**	.276**	0.081	.231**	.239**	0.114	.357**	1
	P-value	0	0	0	0	0.006	0	0.173	0	0	0.052	0	
	N	288	288	288	288	288	288	288	288	288	288	288	288

Table 7-7 Correlation matrix between user perceptions and satisfaction for Saed Zaghloul Square

Table 7-8 shows the regression analysis for the effect of user perceptions on overall satisfaction for Saad Zaghloul Square. It was found that there is a significant positive effect for user perceptions towards ‘freely accessible’ in the presence of other features for overall satisfaction regarding Saad Zaghloul Square. This is because the regression coefficients are greater than zero ($B > 0$), and the P-value is less than 0.05. On the other hand, there is an insignificant effect for user perceptions towards other features for overall satisfaction regarding Saad Zaghloul Square, as the corresponding P-value is greater than 0.05.

Model Saed Zaghloul Sq.		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.412	0.311		1.324	0.187
	Central location	0.091	0.08	0.082	1.143	0.254
	Meeting point or passing by node	0.042	0.073	0.041	0.576	0.565
	Freely accessible to pedestrians	0.099	0.049	0.133	2.007	0.046
	Unique	-0.165	0.089	-0.116	-1.857	0.064
	Easily remembered	0.395	0.219	0.127	1.806	0.072
	Distinct features	-0.142	0.107	-0.083	-1.326	0.186
	Supporting activities	0.228	0.115	0.128	1.971	0.05
	Socially active	-0.088	0.147	-0.037	-0.595	0.552
	Symbolic function	-0.031	0.178	-0.01	-0.173	0.862
	Historic notable event(s) or person(s)	0.136	0.187	0.044	0.73	0.466
	Preserved landscape elements	0.351	0.187	0.122	1.873	0.062

Table 7-8 Regression analysis for the effect of user perceptions on satisfaction with Saed Zaghloul Square

Table 7-9 shows the correlation matrix for the relationship between user perceptions and overall satisfaction for El-Khaldin Zaghloul Square. It was found that there is a significant positive relationship between user perceptions towards: central location, meeting point, freely accessible, supporting activities, socially active, and preserved landscape elements and overall satisfaction, as the correlation coefficients are greater than zero ($r > 0$), and the P-values are less than 0.05. On the other hand, there is an insignificant relationship between user perceptions towards unique, easily remembered, distinct features, symbolic function, historic notable and overall satisfaction for El-Khaldin Square, as the corresponding P-value is greater than 0.05.

Table 7-10 shows the regression analysis for the effect of user perceptions on overall satisfaction in El-Khaldin Square. It was found that there is a significant positive effect for user perceptions towards supporting activities and preserved landscape elements in the presence of other features on overall satisfaction regarding El-Khaldin Square. This is because the regression coefficients are greater than zero ($B > 0$), and the P-value is less than 0.05. On the other hand, there is an insignificant effect on user perceptions towards other features on overall satisfaction regarding El-Khaldin Square, as the corresponding P-value is greater than 0.05.

		1	2	3	4	5	6	7	8	9	10	11	12
Satisfaction El-Khaldin Sq.	R	1											
	P-value												
	N	288											
Central location	R	.247**	1										
	P-value	0											
	N	288	288										
Meeting point or passing by node	R	.274**	.541**	1									
	P-value	0	0										
	N	288	288	288									
Freely accessible to pedestrians	R	.287**	.302**	.408**	1								
	P-value	0	0	0									
	N	288	288	288	288								
Unique	R	0.016	.181**	.218**	0.067	1							
	P-value	0.782	0.002	0	0.258								
	N	288	288	288	288	288							
Easily remembered	R	0.089	.267**	.313**	.143*	.488**	1						
	P-value	0.132	0	0	0.015	0							
	N	288	288	288	288	288	288						
Distinct features	R	-0.025	.191**	.220**	-0.028	.549**	.523**	1					
	P-value	0.675	0.001	0	0.632	0	0						
	N	288	288	288	288	288	288	288					
Supporting activities- El Mansheya	R	.405**	.192**	.264**	.276**	-0.011	-0.01	-0.099	1				
	P-value	0	0.001	0	0	0.847	0.867	0.093					
	N	288	288	288	288	288	288	288	288				
Socially active	R	.363**	.294**	.379**	.309**	-0.014	0.074	-0.044	.535**	1			
	P-value	0	0	0	0	0.814	0.208	0.455	0				
	N	288	288	288	288	288	288	288	288	288			
Symbolic function	R	0.097	.187**	.306**	.196**	-0.063	0.059	-0.082	.240**	.323**	1		
	P-value	0.1	0.001	0	0.001	0.283	0.317	0.163	0	0			
	N	288	288	288	288	288	288	288	288	288	288		
Historic notable event(s) or person(s)	R	-.122*	0.078	0.059	-0.097	.218**	.289**	.316**	-0.066	-0.06	0.102	1	
	P-value	0.039	0.185	0.317	0.1	0	0	0	0.264	0.307	0.085		
	N	288	288	288	288	288	288	288	288	288	288	288	
Preserved landscape elements	R	.373**	.219**	.288**	.309**	-0.093	0.078	-0.094	.343**	.364**	.283**	-0.041	1
	P-value	0	0	0	0	0.116	0.187	0.11	0	0	0	0.486	
	N	288	288	288	288	288	288	288	288	288	288	288	288

Table 7-9 Correlation matrix between users perception and satisfaction of El-Khaldin Garden

Model El-Khaldin Garden		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.412	0.311		1.324	0.187
	Central location	0.091	0.08	0.082	1.143	0.254
	Meeting point or passing by node	0.042	0.073	0.041	0.576	0.565
	Freely accessible to pedestrians	0.099	0.049	0.133	2.007	0.046
	Unique	-0.165	0.089	-0.116	-1.857	0.064
	Easily remembered	0.395	0.219	0.127	1.806	0.072
	Distinct features	-0.142	0.107	-0.083	-1.326	0.186
	Supporting activities	0.228	0.115	0.128	1.971	0.05
	Socially active	-0.088	0.147	-0.037	-0.595	0.552
	Symbolic function	-0.031	0.178	-0.01	-0.173	0.862
	Historic notable event(s) or person(s)	0.136	0.187	0.044	0.73	0.466
	Preserved landscape elements	0.351	0.187	0.122	1.873	0.062

Table 7-10 Regression analysis for the effect of user perceptions on satisfaction for El-Khaldin Garden

Table 7-11 shows the correlation matrix for the relationship between user perceptions and overall satisfaction for Abu El-Abbas Square. It was found that there is a significant positive relationship between user perceptions towards freely accessible, supporting activities, and symbolic function, and overall satisfaction for Abu El-Abbas Square, as the correlation coefficients are greater than zero ($r > 0$), and the P-values are less than 0.05. However, there is an insignificant relationship between user perceptions towards central location, meeting point, unique, easily remembered, distinct features, socially active, historic notable and preserved landscape elements and overall satisfaction regarding Abu El-Abbas Square, as the corresponding P-value is greater than 0.05.

		1	2	3	4	5	6	7	8	9	10	11	12
Satisfaction Abu El-Abbas Sq.	R	1											
	P-value												
	N	288											
Central location	R	0.066	1										
	P-value	0.262											
	N	288	288										
Meeting point or passing by node	R	-0.036	.503**	1									
	P-value	0.538	0										
	N	288	288	288									
Freely accessible to pedestrians	R	.154**	.280**	.313**	1								
	P-value	0.009	0	0									
	N	288	288	288	288								
Unique	R	-0.027	.376**	.253**	.148*	1							
	P-value	0.649	0	0	0.012								
	N	288	288	288	288	288							
Easily remembered	R	0.112	.346**	.169**	.164**	.354**	1						
	P-value	0.057	0	0.004	0.005	0							
	N	288	288	288	288	288	288						
Distinct features	R	-.211**	.386**	.233**	0.04	.435**	.294**	1					
	P-value	0	0	0	0.495	0	0						
	N	288	288	288	288	288	288	288					
Supporting activities- El Mansheya	R	.378**	-0.074	0.033	0.091	-.138*	0.012	-.271**	1				
	P-value	0	0.208	0.582	0.122	0.019	0.833	0					
	N	288	288	288	288	288	288	288	288				
Socially active	R	0.015	.268**	.170**	.217**	.175**	.210**	.236**	-0.072	1			
	P-value	0.796	0	0.004	0	0.003	0	0	0.22				
	N	288	288	288	288	288	288	288	288	288			
Symbolic function	R	.149*	.221**	.233**	.210**	0.087	0.101	0.053	0.107	0.102	1		
	P-value	0.011	0	0	0	0.143	0.088	0.374	0.069	0.085			
	N	288	288	288	288	288	288	288	288	288	288		
Historic notable event(s) or person(s)	R	0.056	.130*	0.11	0.09	.160**	.191**	.117*	0.012	0.09	.294**	1	
	P-value	0.347	0.027	0.061	0.13	0.007	0.001	0.047	0.833	0.128	0		
	N	288	288	288	288	288	288	288	288	288	288	288	
Preserved landscape elements	R	0.105	.128*	.152**	.222**	.211**	.218**	.150*	0.015	.117*	0.106	.148*	1
	P-value	0.075	0.03	0.01	0	0	0	0.011	0.803	0.047	0.073	0.012	
	N	288	288	288	288	288	288	288	288	288	288	288	288

Table 7-11 Correlation matrix between user perceptions and satisfaction for Abu El-Abbas Square

Table 7-12 shows the regression analysis for the effect of user perceptions on overall satisfaction for Abu El-Abbas Square. It was found that there is a significant positive effect for user perceptions on distinct features, in the presence of other features, for overall satisfaction regarding Abu El-Abbas Square. This is because the regression coefficients are greater than zero ($B > 0$), and the P-value is less than 0.05. On the other hand, there is an

insignificant effect for user perceptions towards other features on overall satisfaction for Abu El-Abbas Square, as the corresponding P-value is greater than 0.05.

Model Abu El-Abbas Sq.		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.063	0.245		4.339	0
	Central location	0.083	0.044	0.136	1.896	0.059
	Meeting point or passing by node	-0.083	0.039	-0.141	-2.127	0.034
	Freely accessible to pedestrians	0.062	0.036	0.106	1.737	0.084
	Unique	-0.024	0.082	-0.02	-0.299	0.765
	Easily remembered	0.193	0.099	0.122	1.942	0.053
	Distinct features	-0.382	0.082	-0.305	-4.669	0
	Supporting activities	0.26	0.089	0.197	2.938	0.004
	Socially active	-0.133	0.095	-0.094	-1.407	0.16
	Symbolic function	0.365	0.205	0.107	1.782	0.076
	Historic notable event(s) or person(s)	0.002	0.094	0.001	0.018	0.986
	Preserved landscape elements	0.092	0.073	0.074	1.249	0.213

Table 7-12 Regression analysis for the effect of user perceptions on satisfaction for Abu El-Abbas Square

7.3.2.3 Comparing Differences in User Perceptions and Satisfaction According to the Different Demographics Groups

This section discusses the effect of the personal profiles of users on their satisfaction with the different squares of Alexandria. Table 7-13 shows the mean differences in satisfaction for each square according to different gender groups. It was found that there is an insignificant difference in overall satisfaction for all case study squares according to gender, as all the corresponding P-values are greater than 0.05.

Research Variables	Gender	N	Mean	P-value
Satisfaction of Mohamed Ali Sq.	Female	139	1.8561	0.154
	Male	149	1.7315	
Satisfaction of Ahmed Orabi Sq.	Female	139	1.777	0.281
	Male	149	1.6846	
Satisfaction of Saed Zaghloul Sq.	Female	139	1.4173	0.637
	Male	149	1.3826	
Satisfaction of El-Khaldin Garden	Female	139	1.5755	0.983
	Male	149	1.5772	
Satisfaction of Abu El-Abbas Sq.	Female	139	1.554	0.254
	Male	149	1.4698	
Satisfaction of El-Mansheya Sq.	Female	139	1.9424	0.338
	Male	149	1.8591	

Table 7-13 Comparing the means of satisfaction according to gender

Table 7-14 shows the mean differences in satisfaction for each square in Alexandria according to the different age groups. It was found that there is an insignificant difference in overall satisfaction regarding all squares in Alexandria according to age, as all the corresponding P-values are greater than 0.05.

Research Variables	Age groups	N	Mean	Std. Deviation	P-value
Satisfaction of Mohamed Ali Sq.	19-25	40	2	0.75107	0.186
	26-35	113	1.823	0.71001	
	36-45	73	1.7534	0.77783	
	46-55	33	1.6061	0.70442	
	55+	29	1.6897	0.7608	
	Total	288	1.7917	0.7408	
Satisfaction of Ahmed Orabi Sq.	19-25	40	1.75	0.80861	0.602
	26-35	113	1.7965	0.7216	
	36-45	73	1.6849	0.70468	
	46-55	33	1.5758	0.70844	
	55+	29	1.7241	0.70186	
	Total	288	1.7292	0.72505	
Satisfaction of Saed Zaghloul Sq.	19-25	40	1.325	0.57233	0.733
	26-35	113	1.4071	0.60706	
	36-45	73	1.411	0.61994	
	46-55	33	1.3333	0.6455	
	55+	29	1.5172	0.73779	
	Total	288	1.3993	0.62212	
Satisfaction of El-Khaldin Garden	19-25	40	1.55	0.63851	0.259
	26-35	113	1.5221	0.69562	
	36-45	73	1.6027	0.66122	
	46-55	33	1.5152	0.56575	
	55+	29	1.8276	0.71058	
	Total	288	1.5764	0.66866	
Satisfaction of Abu El-Abbas Sq.	19-25	40	1.575	0.63599	0.068
	26-35	113	1.5398	0.62729	
	36-45	73	1.5616	0.57702	
	46-55	33	1.2121	0.5453	
	55+	29	1.5172	0.73779	
	Total	288	1.5104	0.62461	
Satisfaction of El-Mansheya Sq.	19-25	40	2.05	0.71432	0.19
	26-35	113	1.9292	0.70352	
	36-45	73	1.9041	0.78465	
	46-55	33	1.6364	0.74239	
	55+	29	1.8621	0.74278	
	Total	288	1.8993	0.73745	

Table 7-14 Comparing the means of satisfaction according to age

Table 7-15 shows the mean differences in satisfaction for each square in Alexandria according to the different city of origin groups. It was found that there is only a significant difference in overall satisfaction for Ahmed Orabi Square according to the city of origin. This is because the corresponding P-values is less than 0.05. By observing the mean values, it was found that the higher means are amongst people outside Alexandria, while the lowest

means are found amongst those based in Alexandria (Mean = 1.6917) and the rural areas around the city (Mean = 1.5000). However, other squares show an insignificant difference in overall satisfaction according to the city of origin, as all corresponding P-values are greater than 0.05.

Research Variables	City of Origin	N	Mean	Std. Deviation	P-value
Satisfaction of Mohamed Ali Sq.	Alexandria	253	1.7708	0.73653	0.356
	Cairo	14	1.7857	0.89258	
	Rural areas around Alex	6	1.8333	0.75277	
	Rural areas around Cairo	1	2	.	
	Others	7	2.4286	0.7868	
	Foreigner	7	1.8571	0.37796	
	Total	288	1.7917	0.7408	
Satisfaction of Ahmed Orabi Sq.	Alexandria	253	1.6917	0.69566	0.042
	Cairo	14	2	0.96077	
	Rural areas around Alex.	6	1.5	0.83666	
	Rural areas around Cairo	1	3	.	
	Others	7	2.2857	0.75593	
	Foreigner	7	2	0.8165	
	Total	288	1.7292	0.72505	
Satisfaction of Saed Zaghloul Sq.	Alexandria	253	1.3715	0.60117	0.051
	Cairo	14	1.5	0.75955	
	Rural areas around Alexandria	6	1.1667	0.40825	
	Rural areas around Cairo	1	2	.	
	Others	7	2	0.8165	
	Foreigner	7	1.7143	0.75593	
	Total	288	1.3993	0.62212	
Satisfaction of El-Khaldin Garden	Alexandria	253	1.5771	0.66591	0.214
	Cairo	14	1.5	0.75955	
	Rural areas around Alex	6	1.3333	0.5164	
	Rural areas around Cairo	1	1	.	
	Others	7	2.1429	0.69007	
	Foreigner	7	1.4286	0.53452	
	Total	288	1.5764	0.66866	
Satisfaction of Abu El-Abbas Sq.	Alexandria	253	1.5099	0.62114	0.665
	Cairo	14	1.6429	0.74495	
	Rural areas around Alex	6	1.1667	0.40825	
	Rural areas around Cairo	1	1	.	
	Others	7	1.5714	0.53452	
	Foreigner	7	1.5714	0.7868	
	Total	288	1.5104	0.62461	
Satisfaction of El-Mansheya Sq.	Alexandria	253	1.8735	0.72362	0.222
	Cairo	14	1.9286	0.91687	
	Rural areas around Alex	6	1.8333	0.75277	
	Rural areas around Cairo	1	3	.	
	Others	7	2.4286	0.7868	
	Foreigner	7	2.1429	0.69007	
	Total	288	1.8993	0.73745	

Table 7-15 Comparing the means of satisfaction according to the city of origin

Research Variables	Employment Status	N	Mean	Std. Deviation	P-value
Satisfaction of Mohamed Ali Sq.	Student	26	1.8846	0.76561	0.479
	Employed (Public/Government)	54	1.6667	0.7004	
	Employed (Private)	118	1.8644	0.7501	
	Self-employed	46	1.7391	0.77272	
	Un-employed	26	1.8462	0.78446	
	Retired	18	1.6111	0.60768	
	Total	288	1.7917	0.7408	
Satisfaction of Ahmed Orabi Sq.	Student	26	1.6154	0.75243	0.693
	Employed (Public/Government)	54	1.7222	0.76273	
	Employed (Private)	118	1.7881	0.71434	
	Self-employed	46	1.6087	0.64904	
	Un-employed	26	1.7308	0.82741	
	Retired	18	1.8333	0.70711	
	Total	288	1.7292	0.72505	
Satisfaction of Saed Zaghloul Sq.	Student	26	1.1538	0.36795	0.236
	Employed (Public/Government)	54	1.3889	0.59611	
	Employed (Private)	118	1.4576	0.63575	
	Self-employed	46	1.3913	0.68242	
	Un-employed	26	1.3077	0.61769	
	Retired	18	1.5556	0.70479	
	Total	288	1.3993	0.62212	
Satisfaction of El-Khaldin Garden	Student	26	1.3462	0.48516	0.085
	Employed (Public/Government)	54	1.5741	0.63251	
	Employed (Private)	118	1.6017	0.68112	
	Self-employed	46	1.6304	0.77053	
	Un-employed	26	1.3846	0.6373	
	Retired	18	1.8889	0.58298	
	Total	288	1.5764	0.66866	
Satisfaction of Abu El-Abbas Sq.	Student	26	1.4615	0.64689	0.803
	Employed (Public/Government)	54	1.463	0.60541	
	Employed (Private)	118	1.5593	0.60683	
	Self-employed	46	1.4348	0.54374	
	Un-employed	26	1.5	0.76158	
	Retired	18	1.6111	0.77754	
	Total	288	1.5104	0.62461	
Satisfaction of El-Mansheya Sq.	Student	26	1.8846	0.71144	0.764
	Employed (Public/Government)	54	1.8333	0.77093	
	Employed (Private)	118	1.9746	0.73336	
	Self-employed	46	1.8043	0.71863	
	Un-employed	26	1.9231	0.79614	
	Retired	18	1.8333	0.70711	
	Total	288	1.8993	0.73745	

Table 7-16 Comparing the means of satisfaction according to participants' employment status

Table 7-16 shows the mean differences in satisfaction for each case study square according to the participants' employment status groups. It was found that there is an insignificant

difference in overall satisfaction regarding all squares according to employment status, as all the corresponding P-values are greater than 0.05.

7.3.2.3.1 Conclusion

After applying several methods of analysis to evaluate different user perceptions regarding Alexandria's squares; it was found that user perceptions are represented in the following: central location, meeting point, freely accessible, unique, easily remembered, distinct features, supporting activities, symbolic function, historic notable, and preserved landscape elements. There is a significant effect for different user perceptions on their overall satisfaction according to the area studied, but all areas were consistent in the effect of freely accessible, supporting activities and symbolic function. In addition, it was found that the satisfaction of users is not affected by their personal profile, which means that it is mainly affected by their own perception, rather than their profiles.

7.4 Summary of the Findings

The quality of the selected spaces is evaluated according to the set of principles for successful public spaces developed in Chapters 3 and 4 (review Figures 4-5, 4-50, 4-51 and 4-52). The four selected squares could not be considered as high quality spaces, although there were positive qualities within each. The four spaces appeared to have a serious problem in the provision and quality of the public facilities, such as the public toilets and suitable seating places, which are clean and organised. Other problems, such as safety and poor maintenance, emerged as basic problems, which could not be dealt with at the open space level from the experts' perspectives. Residents and users considered the four spaces have a high potential usage, as they perceive that the qualities of the spaces make it possible for them to interact with each other. Consequently, this is driven by place attachment.

7.4.1 El-Khaldin Garden

El-Khaldin Garden, which has been designated as a garden since the 1930s, is located by the sea in a central location. The space was redesigned and built to solve a parking problem in the 1970s. It has a garden on the higher level of the street that provides a panoramic view of the Eastern Harbour. It is surrounded by high to medium density, mixed-use areas, and the main land uses are residential, commercial and educational. Experts consider the space successful; this is due to its panoramic view, diversity and complexity, and its place identity and character. On the other hand, the average scores from the experts show extreme

dissatisfaction with the garden, as it has poor physical qualities, such as insufficient lighting. This is confirmed by the low presence of female users observed in the evening. Also, they measured the space as unsafe and inaccessible for users with special needs, as well as having inappropriate public facilities, which need immediate maintenance alongside climate considerations.

The space is measured as fairly well-used, even though it is poorly connected to its surroundings. Thus, as Gehl (2013) argues, the low number of people present does not attract other people to use the space. Overall, the space could not be considered as high quality in terms of its functional, social and perceptual aspects, although there were positive qualities.

The main activity observed was sitting: users sat in small groups or in couples on the northern side facing the sea, this area was associated with chatting, eating and drinking. The second activity was standing: users (mainly females watching their children playing) were noted around the platform that was used as a slide by children.

According to the questionnaire survey findings, the garden is perceived by residents as an highly unimportant space that does not represent the city of Alexandria, and that people do not visit. This is mainly due to its poor quality and the lack of facilities. However, those who visited did so for relaxation, recreation, to meet friends or for religious participation. The number of people observed using the space confirm this finding, although it is considered reasonable according to its size. Nonetheless, it seems that the space has a significant potential due the findings for residents' reactions that support its positive description alongside its functional, social and perceptual aspects. This means that the space offers the possibility of interaction, as Gibson (2014) argued that people identify opportunities for action in a location or setting by perceiving the affordances of such qualities within the location or environment. However, the space needs improvement in its morphological aspects.

7.4.2 Saed Zaghloul Square

The square is located in a strategic location by the sea adjacent to Ramleh tram station; it is part of the hotel quarter and the hub of modern Alexandria. It faces the waterfront and Eastern Harbour and, since the 1920s, has functioned as a garden. The iconic statue of Saed Zaghloul was installed in the centre of the garden in 1936, which transformed the space to a square. It is surrounded by several important and historical buildings, which were established in the 1920s and display Venetian influences. The square is surrounded by high-density,

mixed-use areas, and the main land uses are: commercial, residential recreational, administrative and educational. It is an accessible space for users, as it provides the entrance to the city centre.

The experts considered Saed Zaghloul Square a successful space, due to its historical importance, central location, strong identity and the presence of the sea. An additional reason is its lighting, which makes the square safer to use. However, most professionals declared that the space has a serious problem due to the amount and quality of public amenities and there needs to be a consideration of its micro climate. Saed Zaghloul is considered well-used, from the experts' perspective as it was rated of medium-high quality in terms of its functional, social and perceptual aspects, although there were absolute high qualities in several indicators.

The main activity observed was sitting: users were noted sitting in small groups or couples around the fountains or near the statue. Families were sitting on the lawn watching their children playing; moreover, sitting was mostly accompanied by eating and drinking. The second activity was walking: users were mainly walking along the pathways of the square. Users were also observed standing at the edges, near the fence around the space and at the centre next to the statue; they were either viewing the panoramic view of the sea or taking photographing near the statue.

As reported by the user reactions survey, most residents perceived it as one of the most important and likeable spaces in the city. This is, again due to its central location, historical importance and the presence of the iconic statue and sea, all of which give the square a unique meaning and identity that represents the city of Alexandria. Furthermore, it was the most visited space for different purposes, including shopping, relaxation, recreation, and to meet friends. This finding is confirmed by the numbers of people observed using and visiting the space throughout the week, from morning until evening. The users appear to confirm place attachment to Saed Zaghloul square by positively reacting to its affordance of all aspects.

7.4.3 El-Mansheya Square

El-Mansheya square is at the heart of the city centre of Alexandria, and composed of two spaces, namely Mohamed Ali Square and Ahmed Orabi Square. It is the oldest square in Alexandria and was the first of European design, as well as the largest and most noticeable urban space. It was designed by an Italian planner and constructed between 1820 and 1855

with the intention that it would become the economic centre of the city. In 1872, the iconic statue of Mohamed Ali Pacha was installed in the square, and between 1902 and 1909 a new strip, now known as Ahmed Orabi square, was added to the space. This stretched at a right angle from the Eastern Harbour Corniche; moreover, between 1934 and 1938 the iconic Unknown Soldier Monument was constructed and installed in the space. Today, high-density, mixed-use areas surround the square, and the main land uses are commercial, financial, administrative and residential. It is a highly accessible space for users and the heart of the city centre.

El-Mansheya open space is considered by professionals to be a successful place due to its historical importance and its central location. This enables and encourages linkage and access, diversity and complex movements, as well as function and outline. Furthermore, the place has a distinct character and identity and all three aspects (functional social and perceptual) were considered appropriate. In contrast, research revealed extreme dissatisfaction with the quality of the space, highlighting that it had poor physical qualities as well as inappropriate public facilities, which were in need of immediate maintenance in order to meet users' needs. Overall, the space was deemed well-used by the team of professionals with medium to high quality aspects, and highly appropriate qualities amongst many indicators; nevertheless, the space also had medium to low qualities.

The most frequent activity observed was walking: users and visitors walked along the paths in the square of Mohamed Ali and around El-Mansheya space along the long path adjacent to Ahmed Orabi on the left side and cutting through Mohamed Ali; meanwhile, others walked through the square along the paths of Mohamed Ali and Ahmed Orabi to find an appropriate place to sit. The dominant static activity in El-Mansheya square was sitting. Users were mainly sitting on the available seating or grass (a minority), chatting with each other, relaxing or waiting for someone. It was noted that a number of people were standing in groups adjacent to the square greeting and chatting, and thus using the space as a meeting point.

According to users' reactions from the questionnaire survey findings, El-Mansheya Square is perceived as one of the most likeable and important spaces in Alexandria, whilst Mohamed Ali square represents the city and the space is regularly visited for many different purposes, such as shopping, administration, work, and meeting friends. This range is influenced by its central location and historical importance, which gives the space a unique character. The number of individuals observed using and passing by the space, particularly in the morning

and afternoon, support the findings. The users' reactions to the space indicated residents' needs and the qualities they expected from El-Mansheya. The respondents reported that the most important quality they missed related to comfort and relaxation, which echoed those cited by Carr et al. (1992) and Lang (1994a); these were discussed in sections 3.1.2 and 3.4.1 in Chapter 3. Moreover, all respondents highlighted the need for a clean environment, as this is notably missing. The residents of Alexandria appear to demonstrate place attachment to El-Mansheya square, in positively reacting to its functional, social and perceptual affordances.

7.4.4 Abu El-Abbas Square

Abu El-Abbas square, which is located on the waterfront of the old Turkish town, includes three of the city's oldest mosques overlooking the Eastern Harbour. The space was designed as a project in the 1920s and accomplished before the 1930s. The Islamic architectural style dominates and a mixture of building types and uses prevail, including religious, residential, recreational, such as coffee shops and restaurants. Nevertheless, all types of user, including families, couples and individuals, currently use the outer limit of the square, as the inner space cannot be accessed.

The space is considered by the experts to be successful due to its panoramic view, outline, and, diversity and complexity. However, the experts agreed that Abu El-Abbas could not be considered successful in the perceptual aspects because of its lack of safety and security; moreover, minimal maintenance that has lead to the poor quality of existing physical facilities, such as lighting, and seating. Overall, the space is valued as 'not well-used' by the team of professionals, and is thus of medium to low quality in most aspects. However, there were highly appropriate qualities amongst many of the indicators; these related to the iconic nature and the history of the space, although there were also extremely low qualities evident.

The most frequent users visit the space with children for the local funfair; mostly couples or female groups stand next to the playing area in order to watch the children playing. Users were observed sitting on the cornice side to enjoy the most famous scenery of Alexandria's harbour view with its fishing boats and the citadel from one side and the Mosque from the other. Eating and chatting over the platform usually accompanied such activity. During the afternoon, people gathered and sat at the tables and chairs provided by the coffee and ice creams shops; these were oriented to the square. Another frequently observed activity is walking: the walking flow around the square is usually low except for Fridays throughout

whole year when people pass by the external axis of the square and from all directions to pray in Abu El-Abbas Mosque.

The square is perceived by residents as an unlikeable and unimportant space to visit except for religious purposes; this is mainly because of the lack of public facilities. The low numbers of people observed using the space for sitting confirm this finding; nevertheless, the space represents the city's image. The users' reactions to the space confirmed residents' needs and the qualities they expected of the square. The respondents highlighted that the quality that needs improvement, and this specifically concerned attractiveness, opportunities for relaxation and comfort, a pleasing appearance and cleanliness. This echoed the statement by Kaplan et al. (1989) that leisure and attractiveness can be considered affordances as they reflect an assessment of the setting and its compatibility with human needs and purposes, which influences human activity. Abu El-Abbas seemed to have significant potential due residents' reactions, which supported its functional, social and perceptual aspects, meaning that, with improvement, the space would offer the possibility of interaction and use.

7.5 Conclusion

This chapter has synthesised and discussed the key findings from the functional, social perceptual aspects of the selected public spaces, at two levels, namely expert and user perspectives. It first discusses the assessment of aspects of the selected spaces in accordance with the qualities for successful public spaces from professionals' views; these are developed from Chapter 3. Then, the users' reactions and perceptions of the selected public spaces were evaluated and discussed, and the findings for each space were summarised. Finally, a list of recommendations/suggestions will be provided in the conclusion chapter to improve the quality of transformed public spaces in Alexandria. One of the more important findings to emerge from the assessment mechanism to evaluate transformed public spaces in Alexandria is that there is a need for a participatory process. This would need to include designers, experts, users and residents who would influence the designs to ensure that the final delivery of new, and the development of existing spaces, meet users' expectations. As the findings from an evaluation of these spaces reveal that they could not be considered high-quality or highly successful, their aspects should be enhanced. The recommendations are offered at two levels; at the city level, in which they are ordered in terms of ease of achievement, and at the public space level, where they are categorised according to the functional, social and perceptual aspects of public spaces. The dominant recommendation at the city level is the

provision of transformation, redesign, implementation and maintenance to ensure the delivery of the final product satisfies residents' needs and expectations. Thus, the essential recommendations for improvement at the public space level mainly aims to ensure the provision of good quality public amenities which meet residents' needs in the square and public spaces. The identified recommendations could provide a basis for improving the quality of existing and new public spaces in Alexandria and transformed port cities. The next chapter will present the final conclusions, reflections and recommendations.

8. Conclusion

8.1 Introduction

The overall aim of the research was to develop an assessment mechanism to evaluate transformed public spaces in port cities. Furthermore, it investigated the use of transformed public spaces in Alexandria's Eastern Harbour in Egypt with the intention of improving the quality of life in the city. This could be achieved by improving the quality of its transformed spaces, and providing more opportunities for people to engage in these spaces.

This chapter presents the conclusions from this research; it does so by firstly, reviewing the research outcomes and secondly, by discussing the way in which the research objectives have been achieved before considering the appropriateness of the methodology for the tasks undertaken. Finally some limitations are noted alongside opportunities for further research. This chapter synthesizes the analysis of findings from the case studies in order to arrive at an overview of successful public spaces in Alexandria's Eastern Harbour. Using knowledge gained from Western and a general understanding of successful public spaces, a comprehensive analytical framework was created to measure and assess the empirical work. This chapter discusses the research objectives and questions based on the primary and secondary data. The secondary data were gathered from a literature and document review, whilst the primary data emerged from the case study fieldwork, which included an urban design audit, an urban design inventory, a visual assessment, observations, behaviour mapping and a questionnaire. Based on the findings, answers to the research questions outlined in this chapter, providing a basis for the overall conclusions

8.2 Key Findings

This section discusses the key findings of the research that correspond to the objectives and questions established in Chapter 1 (see Table 1.1, Page 12).

Objective. 1: To identify the physical, socio-cultural, socio-economic, political and administrative aspects of the transformation of port cities.

The first objective and related question formed the initial stage of the research, which was addressed by the literature review in Chapter 2. The literature provided essential knowledge about port cities and their transformations. The review investigated the water and city relationship, the Mediterranean Basin, and the evolution of the Ottoman Empire's port cities.

Q.1 What are the factors that determine the transformation of port cities in general?

As urbanity and water attracts overlapping communities of users, this causes complexity; this is further complicated by shifts and changes at the waterfront which transform the shape of cities. Urban waterfronts are now used by humans for recreation and enjoyment. A combination of transformation and continuity persist throughout social, economic and political changes, which has influenced the city and affected the quality of its social and morphological boundary. Furthermore, it has emphasised the port city's identity. Additionally, the literature established three characteristics, which are reflected in the urban spaces and waterfronts of port cities. These are; **perceptual** (a sense of place), **social** (diversity and complexity) and **functional** (accessibility). These were investigated, previous theories frameworks reviewed, and approaches to key issues for public spaces in port cities determined. Moreover, it provided an overview of the qualities of a public space under the following key concerns: functional, social, and perceptual. Indeed, Chapter 3 examined the people-based approach under these three characteristics.

Moreover, in 19th Century, Eastern Mediterranean port cities grew through a strong European influence; this was a period when the modernising efforts of the Ottoman state were at their peak, which brought changes in the following areas:

- Administration and politics
- Socio-economics
- The spatial organisation of the cities
- The lifestyles of urban inhabitants

The transformation of the socio-economic structure of the Ottoman Empire in the 19th Century resulted in significant changes to the physical urban structure of the port city. The changes occurred with demands from the new classes for new institutions and urban spaces. This understanding was informed by similar contexts, through identifying issues from sample port cities. From this process, it was possible to develop a further understanding about Alexandria as a port city, which was also discussed in Chapter 2.

Objective 2: To explore the nature/type/influences of the growth of transformation in Alexandria.

Chapter 2 also examined Alexandria and its context as a port city and in doing so, reviewed both the product and the process of its growth. It provided a general overview of the context of Alexandria and examined the urban development and transformation of the city, including

its urban life and public spaces, in order to understand the changes in their nature and function. The chapter also provided an overview of the population growth, and the governance process of the provision and management of public spaces in the city. This was conducted in four phases in order to understand the various actors and rules controlling this process.

Q.2 What are the factors that determine the transformation of Alexandria as a port city?

The overview of urban development covered three historical periods, which contributed to the formation of the urban character of Alexandria and its public spaces. These periods were called the flourishing, the fall and the modern city; furthermore, the resultant impact on its urban population was examined for all three periods. The research then focused on the transformation of the city, its urban life and the public spaces of the modern city from 1805-1993; this was divided in four phases. Alexandria began to revive again in the first half of the 19th Century during the Mohamed Ali era; thus, a positive urban environment began to take shape following several development projects. For this reason, immigrants flocked to the city, which expanded to the north and the south-east in the first half of the 19th Century. In the second half of the 19th Century, the city continued to grow and extend to the east, west, and south. At this stage, the key factor in the urban expansion was the transport networks, especially the railways lines. In the first half of the 20th Century, the city continued to extend to the south of Al-Mahmoudia canal. The built-up area extended more to the west and east, although the latter was the most prominent direction. In the second half of the 20th Century, urban growth took four directions; to the east, south-east, west, and south-west. The side effects of this urban growth began to appear in some parts, such as informal housing on cultivated land to the south-east. The built-up area increased about 78 times in the 20th Century, as the city expanded horizontally rather than vertically. Moreover, at the city level, Alexandria began to experience continuous population growth from the middle of the 19th Century, throughout Mohamed Ali's era, until the end of 20th Century. Its population increased ten times in about 100 years, from 315,844 in 1897 to 4.9 million in 2016.

The city of Alexandria has experienced many morphological changes in its urban transformation. Because of its historical background, its richness, historical meaning and importance are associated with its built form. Different types of urban tissue still exist, providing a particular morphology with a variety of physical forms and spatial structures. Together they highlight the role of the city centre as a meeting point and the urban core of

one of the most cosmopolitan cities in the Middle East. This morphological study exposes many material aspects of the particular culture of Alexandria. Additionally, it identifies the physical characteristics of the built form and studies the changed fabric, which provides indicators of the urban quality of its built environment and the quality changes to its appearance.

Objective 3: To identify the attributes that affect users of waterfront public spaces, and to develop a framework for the assessment

The third objective and its related question informed the second phase of the research, which was achieved by reviewing the literature. It was conducted to gather essential knowledge about the topic and to define the research approach. The review investigated the different understandings and definitions of successful public space on the waterfront and in general. In order to understand the concepts underpinning successful urban spaces, an evaluation framework was developed by examining concepts and qualities discussed in the literature that enable the provision of successful public spaces. These were considered under the following key concerns: functional, social, and perceptual. This objective was addressed in Chapter 3.

Q.3 What are the physical/morphological and socio-cultural attributes of public spaces on waterfronts regarding their facilities, uses (people-based approach) and sense of place?

Chapter 3 reviewed literature on: the concept and definitions of public space and its importance; the qualities of public space within a people-based approach; and the way to improve these qualities. The reviewed literature reveals that the concept of public space has multi-functional aspects, and that they are made up of physical, functional, social and perceptual measurements. These measurements are perceived as connected entities that allow an understanding of the physical and spatial characteristics of public spaces and their impact on people's perceptions of and behaviours in these spaces. The literature suggested a set of principles and qualities that should be considered when providing successful, good quality public spaces. It was found that improving the quality of public spaces requires a comprehensive analysis of these spaces; therefore, the literature review concluded with the development of a strategy to allow for the consideration of a wide range of influences that affect the qualities of public spaces.

Objective 4: To develop a theoretical and methodological framework for assessing public spaces in transformed port cities.

This objective involved the review of a multitude of indicators that affect users' reactions to public spaces. These are usually driven by the concept of attachment affordance, which provides a method to evaluate the qualities of spaces. The concept of environmental affordance helped to provide an understanding of the impact of urban design dimensions on urban attachment. The objective informed the development of a theoretical framework to evaluate and examine different types of urban space in order to determine how much the characteristics and qualities of such spaces afford or support attachment from users' perceptions. These aspects were also categorised under the three aforementioned factors: functional, social and perceptual.

Q.4 What are the factors that should be considered in assessing transformed urban public spaces?

The literature suggests a set of values and qualities that should be measured and used as a guide in developing successful and efficient urban spaces. From this, the researcher adopted a set of indicators for use as a guide for this study. Furthermore, according to the literature, enhancing the quality and efficiency of urban spaces requires their comprehensive analysis. This requires the consideration of their physical composition and social activities when evaluating their quality, and provides recommendations for improvement.

Therefore, in order to reach a comprehensive understanding of the usability, efficiency and perception of urban spaces, the assessment mechanism for professional and user perceptions represents an analytical framework, which was based on tools identified from earlier studies that engaged with the field of environmental psychology. This analytical framework studied the provision of urban spaces, and was discussed within the research methodology strategy presented in Chapter 4.

In order to achieve research objectives 2 and 3, the meaning of open urban space is reviewed in relation to key concepts, such as the public realm and place, and alongside its importance to individuals and societies. The theoretical exploration considered the key physical, functional, perceptual and social indicators in the collection and analysis of the data.

Chapter 3 provided an exploration of the prominent sources of literature and research in relation to the social life of public spaces on urban waterfronts. An exploration of the social life of public spaces demands an understanding of the relationship between the public space

as a setting and the people as users. Some significant research on the subject of urban public spaces was presented to explore the key features of successful public spaces from a people-based perspective. This considered specific locations as waterfront public spaces; although such spaces may share similar key qualities with public spaces in other locations, those on waterfronts tend to possess unique elements to this type of space.

The following were found to be social concepts, which have evident impact in promoting successful public spaces: public place identity, place justice, public space inclusiveness, interethnic interaction, user oriented spaces, life-space-building order, bottom up approaches, meeting other people, active engagement, public art, edge attraction and subspace, personal space, safety, provisions for children and young people, and gender considerations. The function, social and perceptual dimensions examine mechanisms that promote the long term functions of a space and boost its contribution, such as place-making, place-keeping, mixed-use, networking or the integration of transportation and space quality, food and drink provision, and the existence of vendors. The environmental/physical dimension is concerned with concepts that deal with the overall appearance and comfort of the space and the way that the physical environment influences use through factors such as walkability, microclimate, enclosure but no boundaries, soft edges, visual complexity, accessibility, urban form, landscape, human dimension, size and shape and water features.

Objective 5: To test the assessment mechanism on four selected spaces on the Eastern Harbour Crescent seafront of Alexandria, in order to evaluate the quality of the public spaces, and how responsive these spaces are for different users, and to understand the processes which generate and manage them

Chapter 6 presented the selected case studies of Alexandria's Eastern Harbour square. The Chapter provided data analysis from the score sheets, and examined professionals' perceptions of the selected public spaces by using various criteria to form an impressionistic assessment. The professionals' perceptions were further examined by analysing data from the walking tour assessment sheets; this layer of evaluation included an investigation of the functional, social and perceptual aspects of such spaces. The chapter also reviewed users' behaviours in the case study squares by analysing the data gathered from the observations and behavioural mapping surveys. Finally, the chapter discussed residents' perceptions of the selected public spaces by analysing data from the close-ended questionnaire.

Q.5 To what degree do the current Eastern Harbour squares (in terms of their physical features) set an appropriate context for users' diverse activities, from a professional perspective?

The findings of the professional assessment indicated residents' needs and the qualities they expected from Alexandria's transformed public spaces. The experts' evaluation stated that the most important quality related to perceptual aspects, such as safety and security, a visually pleasant appearance, and place management and maintenance. The other important qualities they expected related to comfort and relaxation. Safety and security needs in public spaces relate to personal safety, health and wellbeing needs and security from threats and social problems. Furthermore, the need for comfort relate to both psychological and physical comfort. The sense of psychological comfort, for instance enjoying fresh air and a quiet atmosphere, is a precondition for people to relax.

The need for a clean, well-maintained environment in a public space was essential to all experts; they reported that users need to enjoy pleasant spaces with a high standard of cleanliness, and in a comfortable environment. The lack of, or existence of poor quality, public facilities, such as hygienic public toilets, a variety of suitable seating places, sufficient lighting and safety, were raised as issues and high priority requirements for residents using public spaces. The poor maintenance of selected public spaces was also an important concern with regard to safety and comfort needs. For example, the lighting system in El-Khaldin Garden and the noise level in the selected spaces did not meet professionals' expectations. Moreover, the expert team addressed their concerns about climatic considerations, for instance the need for convenient seating places, which are shaded from the sun in summer. The need to consider the aesthetics and landscape values in the selected public spaces was also indicated by the experts; they stated that the presence of such values would provide attractive spaces that are visually appealing and enhance the spatial experience. Finally, most of the experts expressed concern for the linkage and access plus the permeability and suitability of movement for users with special needs. They linked feeling unsafe and independence in public spaces to antisocial behaviour; moreover, they revealed that this issue is one of the reasons that affect the function and social aspects of spaces used regularly by certain visitors.

Q.6 To what degree do the current Eastern Harbour squares, in terms of their physical features, set an appropriate context for users' diverse activities and their satisfaction?

The findings from the users' reaction questionnaire indicated residents' needs and the quality they expected to afford satisfaction and attachment to the transformed public spaces. The residents' responses stated that El-Khaldin Garden is perceived as a highly unimportant and the least likeable space, indicating that it does not represent the city of Alexandria, and that people do not visit frequently. This is mainly due to its poor quality and lack of facilities. However, the users who visit and were consulted within the space stated that they used it for relaxation, recreation, to meet friends or for religious purposes. The number of people observed using the space confirms this finding, although it is considered reasonable according to its size. Nonetheless, it seems that the space has significant potential due residents' reactions that support its positive description alongside its functional, social and perceptual characteristics. This means that the space offers the possibility for interactions; indeed, Gibson (2014) argued that people identify opportunities for action in a location by perceiving the affordances of such characteristics within the space. However, El-Khaldin Garden needs improvement in its morphological aspects.

On the other hand, as reported by the user reactions survey, most residents perceived Saed Zaghloul Square as one of the most important and likeable spaces in the city. This is, again due to its central location, historical importance and the presence of the iconic statue and sea, all of which give the square the unique meaning and identity that reflects the city of Alexandria. Furthermore, it was the most visited space for different purposes, including shopping, relaxation, recreation, and to meet friends. This finding is confirmed by the numbers of people observed using and visiting the space throughout the week, from morning until evening. The users appear to confirm place attachment to Saed Zaghloul square by positively reacting to all its positive characteristics.

El-Mansheya Square is perceived as one of the most likeable and important spaces in Alexandria, whilst Mohamed Ali square represents the city, and the space is regularly visited for many different purposes, such as shopping, administration, work, and meeting friends. This range is influenced by its central location and historical importance, which gives the space a unique character. The number of individuals observed using and passing by the space, particularly in the morning and afternoon, support these findings. The users' reactions to the space indicated residents' needs and the qualities they expected from El-Mansheya. The respondents reported that the most important quality they missed related to comfort and

relaxation, which echoed those cited by Carr et al. (1992) and Lang (1994a), (discussed in sections 3.1.2 and 3.4.1 in Chapter 3). Moreover, all respondents highlighted the need for a clean environment, as this is notably missing. The residents of Alexandria appear to demonstrate place attachment to El-Mansheya square, by positively reacting to its functional, social and perceptual affordances.

The square is perceived by residents as a generally unlikeable and unimportant space to visit except for religious purposes; this is mainly because of the lack of public facilities. The low numbers of people observed using the space for sitting confirm this finding; nevertheless, the space represents the city's image. Users' reactions to the space confirmed residents' needs and the qualities they expected of the square. The respondents highlighted that the quality of the space needs improvement, specifically concerning its attractiveness, opportunities for relaxation and comfort, appearance and cleanliness. This echoed the statement by Kaplan et al. (1989) that leisure and attractiveness can be considered affordances as they reflect an assessment of the setting and its compatibility with human needs and purposes, which influences human activity. Abu El-Abbas seemed to have significant potential due residents' reactions, which supported its functional, social and perceptual aspects. This suggests that, with improvement, the space would offer a greater possibility of interaction and use.

Alexandria's residents and the users of the selected transformed public spaces indicate that the main qualities needed to encourage users to visit and use a space are: suitable quality seating areas and landscaping, plus the availability of entertainment and leisure around or near the spaces

Objective 6: To draw lessons from the Alexandria case study and recommend guiding principles to enhance and improve the existing and future development of public spaces in Alexandria and transformed port cities.

From the evaluation of the Alexandrian context there are several key lessons to be drawn as the basis for recommendations to enhance the existing and future development of public open spaces in transformed port cities.

Q.7 What improvements can be made to the planning and urban design systems in Alexandria to achieve appropriate transformed public space?

Analysis across the empirical work leads to some key recommendations. The research addressed people-based planning principles and design concepts, the implementation of

which would help to ensure successful and efficient transformed public spaces in Alexandria. Primarily, the planning system has to be structured around authorities at different hierarchy levels, thus allowing for the formulation of policies to promote transformed public spaces at an appropriate level. The planning system must introduce a strategy that guides the provision and quality of transformed public spaces. Extra attention has to be given to the socio-economic value in providing public space. Authorities have to involve the community and other stakeholders by publishing plans and strategies that implement such policies. To achieve sufficient public participation, this has to be undertaken in two directions: first, authorities have to involve the community in the planning decision-making process, and second, the community have to be educated to represent their rights and volunteer views about their built environment. Policies developed at a high level must be shared with the lower, local level through the design concepts implemented in developments in the provision of successful public spaces. There is an urgent need for a development plan within a comprehensive and flexible planning system that defines key objectives and strategies. Modern design concepts found to be relevant in improving the quality of public spaces in Alexandria include the facilities, and the use and meaning of public spaces. This includes the place attachment, space identity and spatial meaning. In addition, enhancing active engagement by providing family friendly areas, user-oriented spaces, leisure facilities, food and drink provision and activities for women, children and elderly people would enhance satisfaction and spatial efficiency. Thus, place management and maintenance is essential to ensure long term sufficiency. Good quality facilities, such as toilets, coffee shops, stalls, playground, shops, and vendors, are essential to improve social activities in any public space.

Q7. What improvement tools can contribute to the better assessment of transformed public spaces in port cities? (Recommendation for extra tools)

Land Use Survey:

Land use can be considered one of the key elements of settlements (Carmona et al., 2003). Conzen (1960) argues that the introduction of new uses within settlements often leads to the renovation and creation of new buildings, plot merges and sometimes to changes to the street pattern. Land use surveys provide a clear picture about the built up area and open space in any city; they offer information about the various land uses, their intensity and relationships.

Urban Form Survey:

Urban form elements - streets, street blocks, plots and buildings - are the main components of all cities. These combine in specific ways to create diverse types of urban tissue that offer cities their unique character. These different types of urban tissues can also be found within the same city. Urban form can be considered the physical characteristics that structure the built-up areas; this includes the shape, size, density and configuration of settlements (RTPI, 2015).

Space Syntax:

Space syntax is a method developed by Hillier and Hanson (1984); it is “a set of techniques for [the] representation, qualification and interpretation of spatial configuration in building and settlements” (Hillier, et al., 1987, p.363). Space syntax methodology aims to analyse plans to reveal the cultural norms behind their morphology; therefore, it deals with spaces as social products rather than just physical entities.

Semi-Structured Interview:

Semi structured interviews with policy makers and community representatives can provide a tool to improve and understand the effectiveness of the transformed port city planning system in promoting successful transformed public spaces

8.3 Reflections

The focus of the research was guided by the researcher’s initial observation of the use of public spaces on Alexandria’s waterfront. This motivated the researcher to investigate and explore this phenomenon. The residents in Alexandria were observed using some open spaces; some were more frequently visited than others. The research findings have revealed that the studied public spaces could not be considered high quality, which goes some way to explaining the initial observations.

Successful, good quality and well-used public spaces are seen to be an essential requirement in any city around the world and provide opportunities for a healthy life-style for its people. Public open spaces play a significant role in providing social activities, spaces for interaction and in representing cultural values, which, in turn, help to produce a space that is full of social life and meaning. The complex nature of public open spaces and the interlinked relationships among their various qualities, namely the physical, social, perceptual, and

functional qualities, demonstrate the value of a comprehensive approach, comprising both the spatial and social patterns and their correlations, when evaluating and creating such spaces.

Based on a review of relevant literature, this research used a 'people-based approach'. It formed a strategic approach that comprehensively underpinned the examination of the quality of public spaces in Alexandria's Eastern Harbour. The adopted approach proved to be a highly practical strategy, which could be used in future research on public spaces in transformed port cities. The findings from the social study provided more data than the spatial study; therefore, it might be argued that further information about the physical structure of the city would have been beneficial.

The findings reveal that the physical quality of public spaces is an important aspect for their use; for example, in El-Khaldin Garden, although it was a highly accessible space it was not well used, mainly because of its poor physical quality. The case study method was adopted to gain a complete insight into the complex nature of public spaces in Alexandria and to explore its functional, social and perceptual aspects. The main research question about the physical features of Alexandria's Eastern Harbour squares identified that they offer an appropriate context for the range of users' activities. Furthermore, the contribution of these squares to users' satisfaction with the settings was investigated. This was achieved through an in-depth analysis of the selected case study public spaces within their wider context. The five selected case studies were known as squares, as the researcher's initial observations revealed that people also use open spaces, such as roundabouts and street pavements, as squares.

8.4 Contribution of the research

The observations of social interactions and how users react in urban open spaces were underpinned by a review of theory in relation to the social life of public spaces on urban waterfronts. In addition, literature on social interaction, environmental psychology and the morphology of urban public spaces was examined. To explore the social life of public spaces means to understand the relationship between the public space as a setting and people as users. Significant research on urban public spaces was first presented to explore the key features of successful spaces from the perspective of a people-based approach. This considers specific locations as waterfront public spaces; although such places may share similar key qualities with public spaces in other locations, those on waterfronts tend to

possess unique elements to this type of place. The level of detail in the data collected was significant in comparison with previous studies on the scale of squares from experts' and users' perceptions.

Addressing three design aspects (social, functional and perceptual) can be considered during the design process of transformed public spaces. This provides the opportunity to understand how each aspect can affect both the social interaction and the use of transformed public spaces. The research's main contributions to existing knowledge are:

1. Understanding patterns of social interaction among users in transformed public spaces in Alexandria

This entailed mapping the existing patterns of activities and social interactions within the transformed public spaces of four selected urban spaces on the waterfront of Alexandria. This study creates a detailed picture of if and how the public spaces of the transformed city facilitate social interaction among the residents of Alexandria as well as the individual activities of users. The high-resolution photography of the current situation can contribute to a better understanding of the current needs of users as well as a post occupancy evaluation of these spaces in term of their social sustainability.

2. Testing the existing assumptions regarding the impact of design on social interaction in transformed urban spaces in Alexandria.

This involved testing, from experts' perceptions, the existing assumptions regarding the relationship between the three design quality aspects of successful public spaces and the social interactions among residents and users in the context of transformed public spaces in Alexandria's Eastern Harbour. This research contributes empirical evidence to inform the design of future sustainable transformed urban public spaces in Alexandria that considers users' perceptions and needs.

3. Testing the existing expectations regarding the impact of design on users' and Alexandria's residents' reactions to transformed public spaces.

This entailed testing the existing expectations regarding the relationship between the social, functional and perceptual qualities and users' reactions to transformed public spaces on the waterfront of Alexandria. It determines whether they offer space attachment and satisfaction from users' perspectives. This research contributes

empirical evidence to inform the design and transformation of future public spaces in Alexandria and transformed port cities

4. Uncovering the different roles of design attributes in the port city, urban space and waterfront

This study has tested the existing hypothesis concerning the impact of physical attributes on social interactions, the waterfront and the people-based approaches of successful public spaces. The findings reveal significant differences between the role of physical attributes in the three main aspects (social, functional and perceptual), from experts' and users' perceptions. This suggests the need for more research on this scope.

In addition to the aforementioned main contributions, other contributions to existing knowledge include the following:

- The offers a contribution to international literature and knowledge on the planning and urban design practice of public spaces in transformed port cities. With its focus on Alexandria's Eastern Harbour spaces (squares), it brings fresh evidence and new insights to this issue. The experiences summarized from Alexandria offers contributions to the planning and urban design theories for other developing Mediterranean countries and transformed port cities.
- This research has developed and demonstrated an analytical framework that could be utilized as a straightforward analytical structure by future researchers undertaking similar projects. The study also developed practical policy recommendations, which could influence future planning and urban design practices in Alexandria and other transformed Mediterranean port cities. Thus, the framework could add to theory by enabling the development of successful international public spaces through urban design and planning processes.
- This study offers a valuable understanding of the provision and characteristics of efficient successful public spaces in Alexandria, specifically squares on the waterfront. The research revealed innovative findings regarding the impact of planning and urban design on the creation of successful public spaces in this socio-cultural context. It provides empirical data on the conditions and usage of open public spaces in Alexandria, as well as on the planning and urban design processes of such spaces. These have not hitherto been collected and analysed.

- The study identifies the different typologies of transformation of port cities and their public spaces, specifically in the Ottoman Empire and Alexandria. This offered a review of the historical evolution of the Ottoman Empire's port cities and Alexandria. Furthermore, it identified the existing typologies of Alexandria's urban spaces based on the structure and function of these spaces. This research adds a further understanding of transformation typologies in Alexandria specifically and port cities in general.
- The study has developed new measures and indicators by using existing indicators and measures. These specifically measure users' reactions to public spaces as well as the attachment affordance to transformed public spaces. Some of the measures widely used in research about collective memories were adjusted in order to be suitable for use with attachment affordance and the reaction to transformed public spaces. This set of indicators can be especially useful to other researchers investigating transformed and regeneration urban public spaces.

8.5 Recommendations for Improvement

The previous chapter presented an evaluation of the quality of the case study public spaces on the Eastern Harbour waterfront in Alexandria. According to criteria from the literature review, the findings from the quality evaluation reveal that none of the selected spaces could be considered high-quality successful places. Therefore, the quality of these spaces should be enhanced. However, there are also positive qualities, which must be maintained. The main finding from the examination of the transformed public spaces did not appear to be satisfactory from experts' expectations, yet users' reactions suggest that some spaces enable attachment affordance and their expectations are slightly satisfied. The assessment mechanism leads to some key recommendations.

8.5.1 Public Space Level

This set of recommendation is volunteered to enhance the social and spatial qualities of transformed squares in Alexandria, and to ensure physical and psychological comfort in these public spaces. The recommendations discussed in the literature review are categorized according to the functional, social, and perceptual aspects of public spaces;

8.5.1.1 Functional Aspects

- Ensure the provision of high-quality public amenities, which are essential for all users, such as public toilets, suitable seating places, and spaces which are clean.
- Provide public spaces within cohesive and accessible spaces on the waterfront and areas in the urban fabric that are walkable, easy to access and move around in.
- New public spaces should attempt to create as much mixed use as possible in the immediate surroundings, and for existing spaces, when the opportunity arises, to introduce uses which support the activity.
- Consider the requirements of users with special needs in public spaces.

8.5.1.2 Social Aspects

- Ensure the provision of recreational and leisure activities in spaces, which enhance social interaction (Gehl, 2010).
- Provide inclusive spaces, which are welcoming and free to all users, and encourage engagement in public life (Carmona et al., 2008)
- Ensure the establishment of well-used public spaces

8.5.1.3 Perceptual Aspects

- Enhance the identity and image of the spaces, which would help to create distinctive places with a distinguishable character (Lynch, 1960).
- Take advantage of the natural environment to achieve attractive and visually pleasing spaces.
- Ensure the local cultural values and historical elements within the spaces and their surroundings are respected.
- Enhance safety and security in the public spaces.

8.5.2 City Level

A set of recommendations is suggested to enhance the process of redesign or regeneration of public spaces, and to improve the quality of transformed public spaces in Alexandria

8.5.2.1 Transformation and redesign implementation and maintenance

- Ensure the transformation process is based on comprehensive analysis.
- Ensure regular and high-quality maintenance.
- Enhance public participation in the process to ensure residents' engagement in the design and maintenance of these spaces.

8.6 Policy and guideline recommendations

Based on the findings of this research, the researcher has developed a set of recommendations that are directed to planning authorities. These aim to enhance the sufficiency of transformed public spaces in Alexandria. There is a serious requirement to restructure and reorganise the planning system into a clear hierarchy where all government agencies with relevant responsibility collaborate to produce better planning and urban design. The planning policy of public spaces has to be set at the national level in Alexandria and Egypt so as to 'Ensure public spaces are successful places where different groups of community in individual and in group can meet, enjoy, play and festive', (Gehl, 2007-2010; Madanipour 2010a; Shaftoe, 2008; Whyte, 1980-1999). From this national planning policy, a strategy for public spaces should to be provided to promote cross departmental and partnership working and maximise the potential for success in existing and new public spaces.

Therefore, the strategy for public spaces should;

- Provide guidelines for the provision of public spaces including types, conditions, management plans and proportion per capita in developments.
- Provide design guidelines and codes for open public spaces, which correspond to the social, environmental and economic needs.
- Increase awareness of the importance of public spaces among professionals.
- Involve stakeholders and the community within the providing system.
- Increase public awareness of the needs of users in public spaces and their roles in the providing system.

8.7 Methodological limitations and directions for further research

A number of qualifications need to be noted regarding the present study. Public open spaces are perceived and experienced differently by different groups based on their gender, age, and cultural backgrounds. However, the lack of previous empirical studies on public spaces in Alexandria represents an important limitation. Since some techniques in this research were based on a perceptual approach, there are limits to the results due to their basis in subjectivity. This was overcome by undertaking the perceptual analysis of the physical product by a team of ten professionals; nevertheless, this then gives the professional perspective. Although these tools are designed for professionals, they could be useful for

future research. Thus, the tools could be adapted and used with non-professionals to illustrate people's evaluations in comparison to those of professionals.

The process of collecting primary data was influenced by a number of challenges. The field trip time limitation was an issue that caused an overlap of tasks. Furthermore, a major methodological constraint was the implementation of the questionnaire. The researcher had to randomly select some participants (users of the squares) and due to communication problems, the researcher had to read to them the questionnaire as a structured interview. This was particularly the case in El-Mansheya Square. As mentioned earlier, most of the users in this square were not residents, and in many cases they could not read or write in Arabic or English. This affected the results from the questionnaire, as the perceptions of a large group of users were not captured.

The current research was not specifically designed to evaluate factors related to the perception of people who are not using these spaces, i.e. to find out why they do not use such places. However, the current study has specifically examined users of the selected spaces, and Alexandria's residents in general. Therefore, it is essential to continue with further research to examine the wider society's perception of these spaces. Nonetheless, this research is still a valuable contribution to a better understanding of the current context of public spaces in Alexandria's waterfront.

As well as responding to the research questions, this study raises new queries for further research concerning successful public open spaces, and the practice of planning and urban design in Alexandria. As this research missed users who were non-Arabic and non-English speakers, it would be useful to conduct an in-depth study of users from all different ethnic backgrounds, thus gathering more widely representative data on space users. Further broader and more in-depth research about the social perceptions of different types of public open spaces is needed to allow for detailed comparative studies on why (and why not) people in Alexandria use open public spaces.

This research focused on users' perceptions of squares on Alexandria's waterfront. Future research could therefore examine the changing public perceptions of public spaces in Alexandria and Egypt to identify the key means of promoting wider social engagement with public open spaces. This research also focused on weakness in the planning process in providing public open spaces. More in-depth research could be conducted on the organisational and legal aspects of providing public open spaces, with a view to finding ways

to achieve stronger coordination and cooperation within the current institutional arrangements in Egypt.

As well as answering the initial research question, this thesis notes two directions for further research

- a) This work investigates the quality of public spaces in Alexandria's Eastern Harbour (Waterfront). Therefore research could be conducted to explore the quality of other spaces in Alexandria, such as squares and plazas away from the waterfront, and parks and gardens. This would allow for comparison with the findings of this thesis.
- b) Due to similarities among cities and certain regions in Egypt, the recommendations for improving the quality of public spaces in Alexandria's Eastern Harbour may also be appropriate for other Egyptian port cities. Therefore, research could be carried out to examine the applicability of these principles to other contexts in Egypt and to other transformed port cities in general.

Public spaces are substantial spatial elements of any city structure; these fundamentally shape social lives. Essentially, this research provides one of the first studies to evaluate the influence of urban transformations in providing successful public spaces in Alexandria. The findings from this thesis highlight weaknesses and identify areas for improvement in order to enhance the experience of squares and the waterfront in Alexandria, and in other transformed port cities. There is scope to reinstate some European forms of public space; however, this on its own would not be an appropriate solution as society has changed and affects users lifestyles. Nevertheless, a deep understanding of the needs of the existing society and their national identity values, which are represented in religion, social and cultural traditions are essential in developing successful public spaces. In addition, respect for the environmental, and for economic and social values are fundamental considerations in providing public spaces in port cities. Such factors and values have to be carefully addressed at different levels of the planning system and supported by guidelines, policies and plans.

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9. Alexandria as a port city (Appendix A)

9.1 Introduction

This chapter identifies the key morphological periods in the history of Alexandria and analyses its urban environment. The physical growth of the city will be investigated since its foundation until the present day, covering four key periods of flourishing and noting the reasons for any subsequent demises. The first flourishing examines its historical background studied through the Greco-Roman, Arab, Turkish, and 18th Century periods, whilst the second explores the population growth of Alexandria to understand its characteristics. This is particularly significant as the increasing population indicated both vertical and horizontal changes in its built-up areas. The third flourishing discusses the morphological transformation of Alexandria by investigating: the older districts of the early 1800s, the rapid development that followed, the various phases of public regulation, and its recent transformation to the present day. Finally, Alexandria's current city centre is studied, through its present services and leisure core for a vast urban area.

According to Masek et al. (2000), the significance of connecting the observed land cover changes the dynamic socio-economic or environmental aspects. Urban growth is one of the keys areas in which humans are transforming the land cover. Approximately 80% of the earth land transformed and changed by the human activities on the land cover over the last centuries (Masek et al., 2000).

9.2 City growth phases

Alexandria's ancient city growth is usually divided into three phases; it starts with the foundation of the city in 331 BC, which was followed by the Ptolemaic city (323 BC-30 BC) and later the Roman and Byzantine city (30 BC-641AD). Throughout history, the port city acted as a melting pot, by bringing together people and traditions under a new Hellenistic society, under the ancient civilisation of Egypt. Alexandria represented a place of contact with other world cultures, especially those within the Mediterranean, and its resulting culture has been described as hybrid (Thomas, 2007). However, little has survived today from the city's classical past (McKenzie, 2008). Nevertheless, Alexandria's overall historical growth since its foundation is usually divided into four major periods. Throughout history, Alexandria was a central attraction for cultural, religious, economic and political reasons, and each period had its particular evolutionary concept.

9.2.1 The foundation of Alexandria

Alexandria was founded in 331BC by Alexander the Great; it is advantageously located between the Mediterranean Sea (to the north) and Lake Mareotis (to the south). It was built on bedrock, which provided a strong foundation that guaranteed a robust and exceptionally stable city. This was unique amongst cities on the same coastal strip, which were built on loose Delta (Figure 8-1 A). Alexander noted various other benefits of the location. This included: the excess water supply from the Canopian branch of the Nile; the opportunity to connect Pharos island to create two harbours, and the protection this afforded the city in case of a frontline confrontation from the north; and the presence of Mareotis lake which represented a defence line to the south ([Mahgoub et al., 2000](#)). Alexander determined to bring Egypt closer to the Greek world and to find a new port that would not be damaged by the Nile's floods ([Empereur, 2002](#)).

The city was designed by the architect *Deinocrates*, who stated that the ideal city could be achieved by applying Aristotle's principles (shown in Figure 8-1 B). A grid street pattern had been common in Ancient cities since the 5th Century BC, which were generally orientated in the direction of the prevailing wind to profit from the sea breezes, or conversely to provide shelter from the wind ([Empereur, 2002](#)). In Alexandria, the bridge that connected Pharos Island to the mainland city was 1169m in length and called the Hepastadium; this created two harbours (shown in Figure 8-2). The Eastern Harbour was known as the great port or "Megas Limen", and the Western Harbour is known as the port of good return or "Eunostos"; moreover, the Western was more important than the Eastern Harbour during the Ptolemaic and Roman periods ([Mahgoub et al., 2000](#) [Empereur, 2002](#)).

Alexander wanted Alexandria to be a "Megalopolis" with wide paved streets; thus, the two most significant axial streets were wider than the rest. Specifically, Canopic Street is the first avenue parallel to the sea, which ran east to west connecting Sungate from the east to Moongate in the west. The second main street was named the Soma and ran north to south perpendicular to the sea and to Canopic Avenue. The two Avenues intersected at a large open space, called the Mesonpedion; this was a major meeting point for merchants and for commercial activity ([Abdel-Hakeem, 1958](#)).

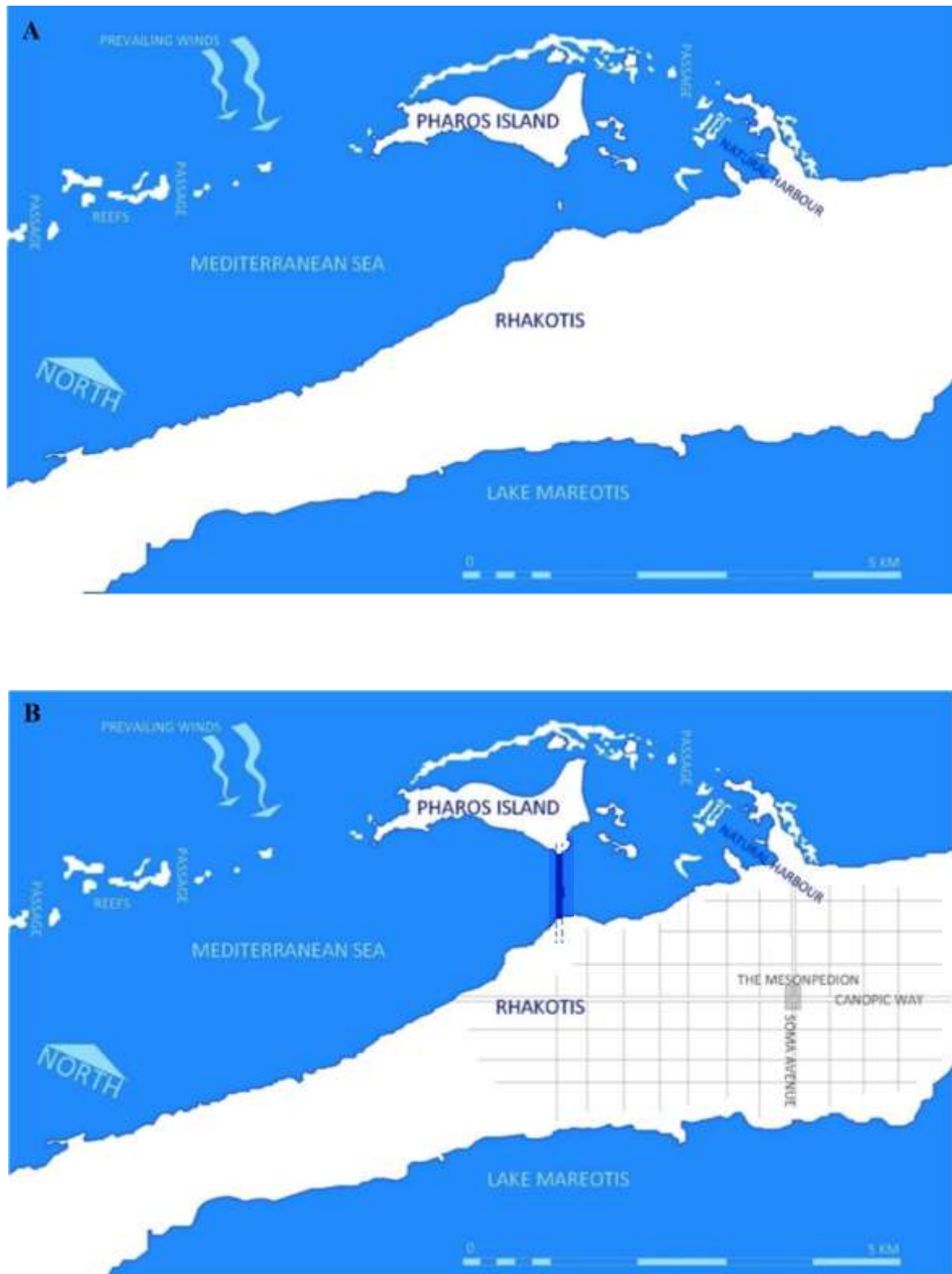


Figure 8-1 (A) Plan of Alexandria before the foundation of Alexander the Great
(B) Plan of Alexandria with the checkerboard pattern of Deinocratis (Source: based on El-Abbadi (1990))

The city was composed of five zones: the Royal zone occupied nearly one-third of the whole area of the city and was located on the Eastern Harbour, while the Egyptians lived in west zone, named Rhakotis. Alexandria became the link between the Nile and the Mediterranean world, and became the most important maritime and commercial city of the Hellenistic age. Additionally, the city became a great metropolis, known as a base of learning, famous for its library, and home to a mixed population. All these factors enabled the city to flourish in this era, and transformed Alexandria from a small port town into a large central city, or urban area, with a vital economic, political and cultural centre. Thus, it became a major core for international connections, commerce and communication due to its legendary library. “Alexandrea ad Aegyptum” is the only city that carried Alexander the Great’s Universalist message, which was to unite the cultures of the world and become the grandest and most famous metropolis in Ancient Egypt ([Abdel-Hakeem, 1958](#); [Mahgoub et al., 2000](#); [Empereur, 2002](#)).



Figure 8-2 Plan of Alexandria and the man-made changes during the Ptolemaic period

9.2.2 The First ‘Flourishing’ Period (331 BC-641AD)

After Alexander died in 323 BC, the Ptolemies gained control of Egypt and made Alexandria their capital. The choice of the city as a capital of the Ptolemaic realm increased its role as a

world emporium and a cultural centre of the Eastern and Western world. Additionally, as the city was located by the Mediterranean Sea, it became the chief Egyptian port. Accordingly, Alexandria became the first international trade centre in Egypt dealing with imports and exports with the globe ([Kadous, 2000](#); [Lawler, 2005](#)). Alexandria also became a meeting point and a way for commercial routes to connect Egypt with their region and the world. The lighthouse and the canal of Shedia of the Canopic branch were other factors that gave the port an advantage. The lighthouse gave sailors, who needed a sign to guide them while sailing between the Mediterranean coasts, confidence in traversing the area. Moreover, the canal with the Marriot Lake enabled the direct exchange between Alexandria and the centre of the African continent. This helped to make Egypt a stronger and independent country.

Furthermore, the Ptolemies founded a museum and a library in Alexandria that turned the city into one of the world's greatest centres of culture and learning ([Forster, 2014](#)). The Alexandrian Library was the largest and most famous for its ancient collections of scrolls. Developed by the Egyptian rulers, Ptolemy I and Ptolemy II in the 200's BC, it contained more than 400,000 scrolls. However, part of the library might have been destroyed during the siege of Julius Caesar in 47 BC, as he invaded Alexandria and built his Roman city (shown in Figure 8-3).

However, 30BC was the beginning of the Roman rule in Egypt; Alexandria became one of the chief cities of the Roman Empire due to its advantageous position for international trade and as a reputed knowledge centre of the Ancient world ([Mahgoub et al., 2000](#)). Additionally, long before Christianity reached the city, Alexandria had a unique influence on the development of Christian theology ([Empereur, 2002](#)). The general framework planned by Deinocratis has been preserved unchanged and, most of the principal public buildings and open spaces that were erected during the early period survived the three centuries up to the Roman occupation (30 BC.) Alexandria had been the capital of an empire since its foundation until the ruler Octavius. Furthermore, during the 600 years of the Roman period, Alexandria's architectural history was under continual change. Octavius Augustus founded a new town to the east of the city named Nicopolis or 'City of Victory', and a new wall was built (between Mustafa Kamel and the Gleem beaches area now in the east of the city), to mark its first expansion after his victory over Cleopatra in the battle of Actium in 31B.C. ([Abdel-Hakeem, 1958](#)).

The city made remarkable advances in the fields of trade, industry and science. During the 4th and 5th Centuries, the Patriarchate of Alexandria became very powerful, and the Pope of

Alexandria complained that Egyptian Christians were compromising their beliefs for politics. However these objections were not addressed and the protesting church developed to oppose state-supported orthodoxy. Therefore, disaffection with Byzantine rules provided the conditions under which Alexandria first fell to the Persians in 616, and then to the Arabs in 642 ([El-Abbadi, 1993](#)).

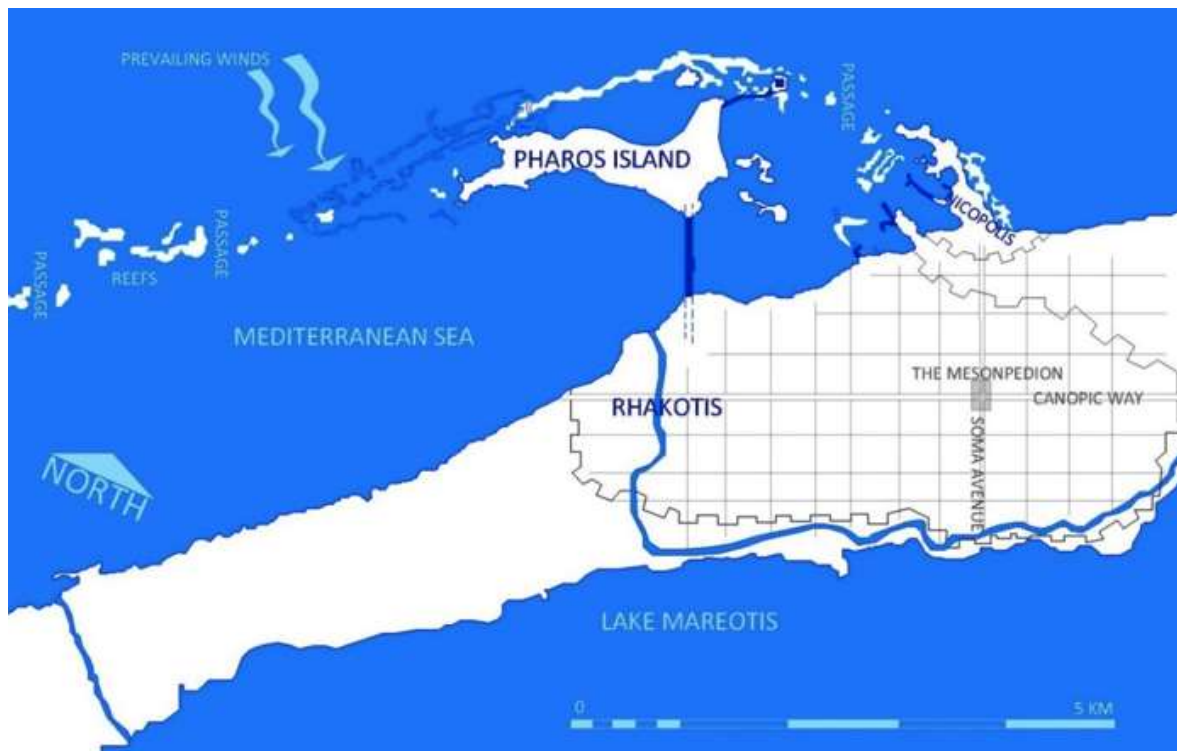


Figure 8-3 Plan of Roman Alexandria between 30BC and 641AD (Source: based on El-Abbadi (1990))

9.2.3 The Fall and Weakening Period (641-1820)

The port city experienced a long history of decline and deterioration from the end of the Roman period until the beginning of the 19th Century. It started with the invasion of Egypt by the Arab General, Amr Ibn-El-AS in 641 AD; the following year, the Arab entered Alexandria, and, although they had no intention to destroy the city, they let it fall into disrepair, and both sea and land were both neglected. Moreover, the Canopic mouth of the Nile dried up in the 12th Century and no longer fed the fresh water of Lake Mareotis ([Mahgoub et al., 2003](#)).

Due to the ongoing political battle that caused the damage and demolition of some of its symbolic buildings, such as the library and royal palaces, Alexandria was in a state of

disrepair when the Arabs conquered ([Abdel-Hakeem, 1958](#)). The city land cover within the Greco-Roman era stretched to the walls, when the old city length was 5.09 km and its width through the centre reached 1.7 km. Throughout the Eastern section, it was 1.4 km and the Westside was 1.15 km ([Kadous, 2000](#)). However, within the Arab period, the city shrank from the East, West and South sides; the length of the city reduced approximately to 3km, nearly 41.1% shorter than the Greco-Roman city. The width of the East section reduced by about 64.3% to 0.5km, and the west side reduced by 13% to 1km. Furthermore, some sources suggested that the new city wall during the 9th Century (Ibn Tulun Era) reduced the city to half of the urban area due to the movement of the capital to Cairo (Al-Fustat) when Alexandria became a secondary town (Empereur, [2002](#)). Nevertheless, the city walls acted as boundaries and protected the urban area during all the eras until the 15th Century ([Abdel-Hakeem, 1958](#)). Nonetheless, in the 16th Century, the city started to fade, when it deteriorated and was demolished by the Mamluks.

A new phase in the city's history began with the Turkish takeover in 1517. The population continued to decrease and, when the small enclosure of the Arab walls eventually became too large, the city's shape and the urban area changed. The Turks moved outside the walls (shown in Figure 8-4) and abandoned the "Arabian city"; a new settlement originated on the neck of the harbour, and a new city, which became known as the "Turkish city", was built ([Empereur, 2002](#)). The length of the new city from north to south was approximately 1km, and the width of the neck between the Eastern and Western harbours was about 0.5km. By this time, Alexandria had, once again, become important as a meeting point for intercontinental trade ([Abdel-Hakeem, 1958](#)).

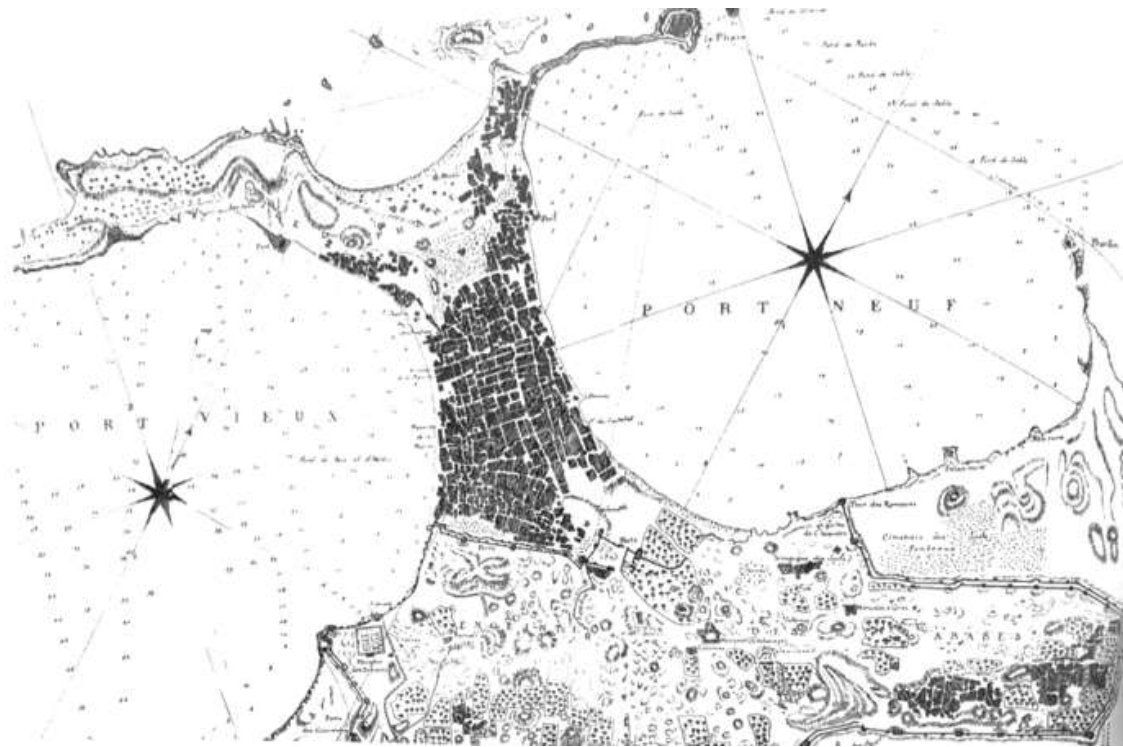


Figure 8-4 The Turkish town outside the Arab walls Alexandria map 1789 (Source: [Jondet, 1921](#)) Planche XIX.

9.2.3.1 Reasons for the Fall and Weakening of Alexandria

In the Middle Ages, many reasons led to the fall of Alexandria, starting with the critical move of the capital to Al-Fustat (Cairo). The location of the Egyptian capital was politically and economically driven; in the Greco-Roman period, Alexandria city was the capital due to its location near to its rulers' homelands. The Arabs similarly moved the capital from Alexandria to Cairo due to its location and natural water barriers. As it was located at the far north end of Egypt, this made accessibility difficult between the capital and other parts of Egypt, which were not close to the central administration in the Arabian Peninsula in Cairo, and too close to the enemies of the Arabs state in the north of the Mediterranean ([El-Abbadi, 1993](#); [Mahgoub et al., 2000](#)).

Other additional reasons that led to the shrinkage and weakening of the city were the land decline from the 6th Century and the freshwater shortage supply. Changes have subsequently been confirmed by scientists, who have analysed monuments found under sea level, and noted the disappearance of a small island in the Eastern harbour, and the shortage of the water supply from the Nile. Thus, people tend to travel and migrate to areas rich with freshwater supplies. During the period 859-1423AD, Alexandria's old canal that branched

from the Nile was dug and backfilled six times ([Abdel-Hakeem, 1958](#)). According to Empereur ([2002](#)), Ottoman Alexandria had been a deteriorated yet still reasonably wealthy city. No other Egyptian ports could handle as many ships in number and size as Alexandria's port; thus, it was unsurprising that, in 1798, Bonaparte chose to enter Alexandria's harbour to occupy Egypt. Despite its advantages, from 1798 to 1801, during the French occupation period of Egypt, Alexandria remained in a state of decline and under-development.

9.2.4 The Modern City and the Second Flourishing (1805-1993)

Although in 1798, the French navy under Napoleon Bonaparte took Alexandria, in 1801 the British forced the French to evacuate Egypt. In 1806, with a population of 6,000, Alexandria appeared relatively deserted. However, by 1849 it had again become a cosmopolitan court city of 10,000 people. The reason for the transformation was Mohamed Ali Pasha's desire to create a modern realm. Like Alexandria's founder, Alexander the Great, Mohamed Ali, who became ruler of Egypt in 1805, came from Macedonia and was a great admirer of European civilisation, ([Ilbert, 1996](#)).

During the second half of the 19th Century, Alexandria became one of the biggest urban centres of the Ottoman Empire and a vital commercial port of the Mediterranean region. After the British bombardment in 1882, the city experienced a boom in the construction sector and saw the development of its urban public spaces. There were three major phases of the conclusive request when those experts had to respond by clarification of the terms and principal circumstantialities. This involved: indicating the ruling class's power; creating a new lifestyle and establishing the aim to develop a cosmopolitan society, while attending to the procedures of planning; the regulation of the city's building activity network, and finally, its traffic circulation.

9.3 Urban Population in Alexandria

The previous section examined the physical expansion of Alexandria, however this section will address its demographic development in order to understand the key characteristics of its growth. This section will therefore explore the city's development, from 200BC to 2016, by providing a study of its demographic indicators concerning its population development, annual growth rate and internal immigration.

9.3.1 Population Development

The city experienced a fluctuating population size from 200BC to 1897 (illustrated in Table 5-1). The first population peak was during the Greek era when the city size matched other cities of ancient Greece; hence, a large number of people migrated to Alexandria increasing the population to 325,000 by 60 BC ([Abdel-Hakeem, 1958](#)). However, the city then experienced irregular demographic development due to unstable political conditions resulting from occupations or foreign invasions and defeats. However, during Mohamed Ali's era, Alexandria started to develop a constant population growth, encouraged by his development projects, and particularly that of the El-Mahmoudia canal in 1821. The population figures before 1897 were approximations calculated by different scholars and sources rather than determined by more accurate official census statistics. Table 8-1 provides a brief review of Alexandria's population development since its foundation; this provides evidence of the city's variable population growth and decline, and marks its current continuous urban growth that started in 1897 ([Marlowe, 1965](#); [Fraser, 1981](#); [Mabro, 2006](#)). However, according to the 1897 census, the population of Alexandria totalled 319,766; in 1927, within 30 years, it dramatically increased to become over half a million (573,063), and in 1947, within another 20 years, it increased to nearly one million (919,024).

At the beginning of the 1950s, Alexandria joined the 'million-city club', whilst ten years later, the population totalled 1,516,234 and by the 1996, Alexandria's population reached 3 million. Furthermore, ten years later in 2006 it reached four million, whilst in 2015, the population totalled 4,812,186 ([Abdel-Aziz, 2015](#)) and in 2016 it was 4,943,971. Finally, its most recent official tally reached 5,051,149 (in August 2017) (<http://geoportal.campas.gov.eg>). This means that the city population has increased by ten times since 1917 (shown in Figure 8-5).

		<i>Year</i>	<i>Population</i>
<i>First Flourishing Period</i>		200 BC Ptolemaic	300.000
		60 BC	325.000
		100 AD Rome	250.000
		361 AD Rome	125.000
		500 AD Byzantium	100.000
		622 AD Persia	94.000
<i>Fall & Decline Period</i>		730	90.000
		800 Arabia	95.000
		1175	45.000
		1500	35.000
		1693 Turkey	15.000
		1798	4.000
<i>Second Flourishing Period</i>	<i>1st Phase</i>	1828	12.528
		1838	60.000
		1848	104.128
	<i>2nd Phase</i>	1862	164.400
		1875	212.000
		1882	231.396
		1897	319.766
	<i>3rd Phase</i>	1907	332.246
		1917	444.617
		1927	573.063
		1937	685.736
		1947	919.024
	<i>4th Phase</i>	1960	1.516.234
		1976	2.303.539
		1986	2.896.459
		1996	3.339.076
		2006	4.110.015
		2016	4.943.971

Table 8-1 Alexandria's population throughout history

Data from 200BC to 1875 (Source: [Chandler, 1987](#))Data from 1848 to 1960 (Source: [Mabro, 2006](#))Data from 1876 to 1986 (Source: [Abdou Azaz, 2004](#))

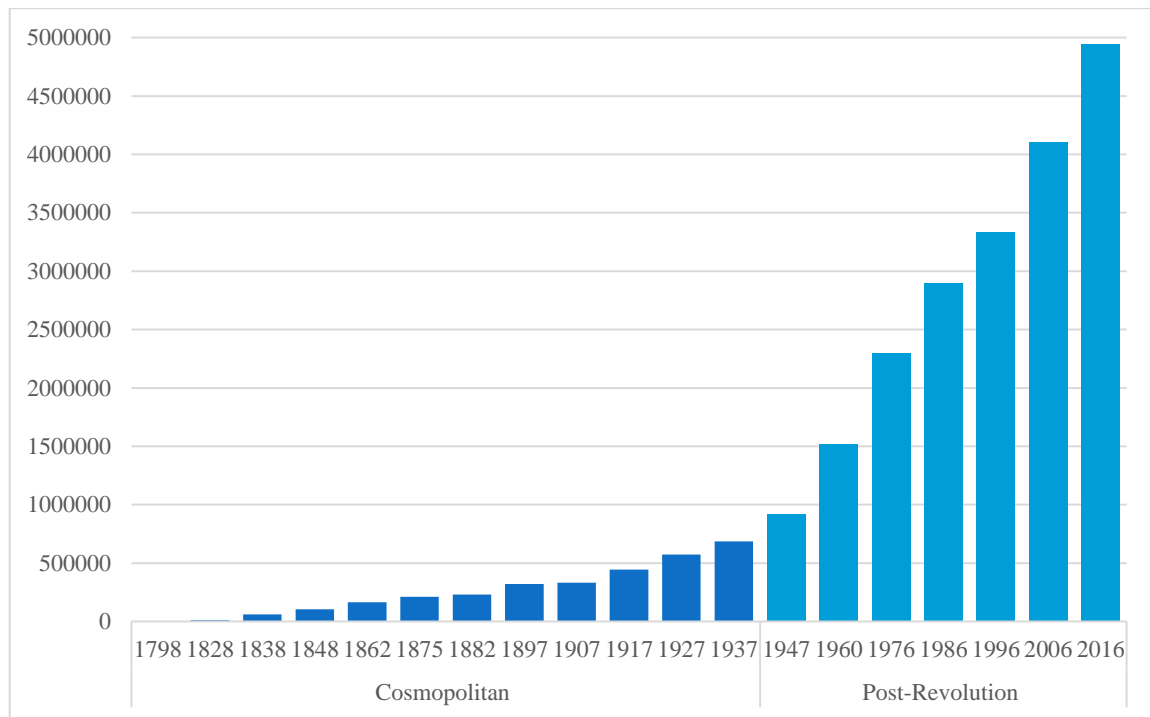


Figure 8-5 Alexandria Population Graph based on Table 8-1 (1798-2015)

9.3.2 Annual Growth

Since Alexandria's foundation, the population declined (illustrated in Table 8-1) until its second flourishing. The annual growth between 1798 and 1848 increased by 50% in 50 years (shown in Table 8-2), and powered the creation of the modern city. In 1840, Europe's interest in commodities made Alexandria a centre of commerce and banking, when it attracted more foreigners to move to the city (illustrated in Table 8-3) ([Ilbert, 1996](#); [Empereur, 1998](#); [Awad and Pallini, 2001](#); [Mabro, 2006](#)).

		<i>Census period</i>	<i>Annual Growth %</i>	<i>Duration(Years)</i>
<i>1stFlourishing Period</i>		200 BC-622 AD	-0.08%	822
<i>Fall & Decline Period</i>		622-1798	-0.08%	1179
<i>2ndFlourishing Period</i>	<i>1st Phase</i>	1798-1848	50%	50
	<i>2nd Phase</i>	1848-1897	4.3%	48
	<i>3rd Phase</i>	1897-1947	3.7%	50
	<i>4th Phase</i>	1947-1996	5.3%	49

Table 8-2 Urban annual growth rate in Alexandria throughout history
Data from the previous table and calculated by the author

Year	Total Population	Foreign Nationals		Foreign Nationals plus Non-Egyptian locals	
		Numbers	Percentage	Numbers	Percentage
1848	104.128	11.666	11.2%	-	-
1882	231.396	49.693	21.5%	54.862	23.7%
1897	319.766	46.118	14.4%	60.424	18.9%
1907	332.246	63.366	19.1%	86.787	26.1%
1917	444.617	84.705	19.1%	113.617	25.6%
1927	573.063	99.605	17.4%	136.526	23.8%
1937	685.736	88.351	12.9%	120.979	17.6%

Table 8-3 Foreigners' population in Alexandria (1848-1937)

(Source: [Mabro, 2006](#))

Census Periods	Alexandria Annual Growth Rate %	Egypt Annual Growth Rate %	Duration (years)
1897-1907	0.4%	1.5%	10
1907-1917	3.4%	1.3%	10
1917-1927	2.9%	1.1%	10
1927-1937	2%	1.2%	10
1937-1947	3.4%	1.75%	10
1947-1960	5%	2.3%	13
1960-1976	3.2%	2.8%	16
1976-1986	2.5%	2.8%	10
1986-1996	1.5%	2.5%	10
1996-2006	2.3%	2%	10
2006-2016	2%	2.4%	10

Table 8-4 Population annual growth rate in Alexandria and Egypt (1897-2016)

Alexandria annual growth Data from (Table 5-1) calculated by the author

Egypt annual growth rate up (1947-1960) (Source: [Abdou Azaz, 2004](#))

Egypt annual growth rate from 1960 to 2016 calculated by the author

The high growth rates (shown in Table 8-4) powered the expansion of Alexandria throughout the period and reinforced the demographic structure. Between 1907 and 1976, Alexandria's growth rates were greater than the total Egyptian growth rates, due migration to its urban centres. The period from 1947 to 1960 represented the peak of Alexandria's growth, which increased from 1897 but started to slow down from 1976 until the last census in 2016. Moreover, Abdou Azaz ([2004](#)) stated that, between 1927 and 1960, Alexandria's population represented about 15% of the total Egyptian urban population, but had begun to fall to 14.36% in 1976, and reached 13.21% in 1996. Moreover, he also indicated that the share of the urban population of Alexandria between 1907 and 1996 reduced by 27.9%.

9.3.3 Internal Migration

Until the second of the 20th Century, internal migration had played a vital role in the structure of the population growth in Alexandria. The port and its new industrial projects offered many job opportunities and therefore attracted a large number of migrants from both nearby towns and distant governorates in Upper Egypt. From 1907 to 1947, Alexandria's share of internal migration formed more than the half of the total increase for Egypt (illustrated in Table 8-5) ([Empereur, 1998, 2002](#)).

<i>Census Periods</i>	<i>Total Increase</i>	<i>Internal Migration</i>	<i>% Internal Migration</i>
1907-1917	112.371	50.236	44.7%
1917-1927	128.446	77.393	60.2%
1927-1937	112.673	4.514	4%
1937-1947	233.288	112.152	48%
1947-1960	597.210	113.317	18.9%
1960-1976	787.305	114.180	14.5%
1976-1986	592.920	22.363	3.7%
1986-1996	442.617	-138.383	-31.2%
1996-2006	770.939	N/A	
2006-2016	833.956	N/A	

Table 8-5 Internal migration of total increase in Alexandria (1907-1996)
 Alexandria total increase Data from (Table 5-1) calculated by the author
 Internal Migration Data from up to 1996 ([Abdou Azaz, 2004](#))

However, between 1927 and 1937, there was a massive decrease in internal migration, which saw the growth percentage drop from 60.2% to 4%. This was due to the economic difficulties in Egypt at the time which saw the start of the disappearance of its cosmopolitan community ([Ilbert et al., 1997](#)). The influence of internal migration began to fall in the second half of the 20th Century; in 1947, it was 48%, and it dropped to 18.9% in 1960, and to 14.5% in 1976. In 1986, it collapsed to 3.7%, whilst in the 1990s, Alexandria's internal migration stopped completely. In 1996, the city lost 31.2% of its total increase due to the lack of job opportunities in the city and other urban centres in Egypt; these instead shifted substantially to the Gulf area ([Mahgoub et al., 2003; Abdou Azaz, 2004](#)).

<i>Districts</i>	<i>Qesm (Areas)</i>	<i>Total Increase Rate</i>	<i>Migration Rate</i>
<i>El-Montaza</i>	<i>El-Montaza</i>	6.5	3.9
<i>Eastern</i>	<i>El-Ramel</i>	3.1	0.8
	<i>Sidi-Gaber</i>	1.7	0.5
<i>Central</i>	<i>Bab Shark</i>	-0.6	-2.8
	<i>Moharam beh</i>	0.2	-1.8
	<i>El-Attarin</i>	-1.3	-2.9
	<i>Karmouz</i>	-0.7	-3.1
<i>Western</i>	<i>El-Mansheya</i>	-1.7	-4.2
	<i>El-Laban</i>	-1.7	-4.2
	<i>Mena Elbassal</i>	2.7	0.8
<i>El-Gomrok</i>	<i>El-Gomrok</i>	-1.5	-3.5
<i>El-Amreya</i>	<i>EL-Dekhela</i>	7.2	4.1
	<i>El-Amreya</i>	4.1	2.4

Table 8-6 Annual increase rate and migration rate in Alexandria by Qesm (Area) between (1976-1986)

Alexandria total increase Data from (Table 3.3) calculated by the author
Internal Migration (Source: [Abdou Azaz, 2004](#))

In terms of its composition, Alexandria is divided into six districts, and each district has a number of Qesms (a Qesm is a police station that serves a particular area). Although the city had 13 Qesms until 1996 (shown in Table 8-6) the current number is 17 (illustrated in Table 8-7). Internal migration in Alexandria is categorised into two rates; negative rate mean contributors, and positive rate mean collectors. The contributors represent the export of the population from its capacity to another location, and occurred when the old core city areas were believed to have reached a demographic saturation point. New families and generations faced a number of obstacles in finding residences at reasonable prices in the old city, so they moved to the new areas at the city border; these were categorised as collectors and captured migration from both the sender areas in Alexandria and other governorates. Moreover, El-Amreya and El-Dekhela were the sites of a new industrial project that attracted people from inside and outside Alexandria ([Abdel-Salam, 1995](#); [Abdou Azaz, 2004](#)).

<i>Districts</i>	<i>Qesm (Areas)</i>	<i>Population of the Area</i>	<i>Total</i>
<i>El-Montaza</i>	<i>1st El-Montaza</i>	811.814	539.153
	<i>2nd El-Montaza</i>	539.153	
<i>Eastern</i>	<i>1st El-Ramel</i>	452.627	1131.604
	<i>2nd El-Ramel</i>	419.143	
	<i>Sidi-Gaber</i>	259.834	
<i>Central</i>	<i>Bab Shark</i>	213.428	736.871
	<i>Moharam beh</i>	343.442	
	<i>El-Attarin</i>	41.698	
	<i>Karmouz</i>	138.303	
<i>Western</i>	<i>El-Mansheya</i>	26.754	370.218
	<i>El-Laban</i>	41.891	
	<i>Mena Elbassal</i>	301.573	
<i>El-Gomrok</i>	<i>El-Gomrok</i>	97.019	
<i>El-Amreya</i>	<i>EL-Dekhela</i>	395.885	968.771
	<i>1st El-Amreya</i>	374.461	
	<i>2nd El-Amreya</i>	198.425	
<i>Borg El-Arab</i>	<i>Borg El-Arab</i>	85.144	
<i>Borg El-Arab City</i>	<i>Borg El-Arab City</i>	68.709	
<i>North Coast</i>	<i>El-Sahel El-Shamaly</i>	2.883	
Total		4000372	

Table 8-7 Population of Alexandria by Qesm (Area) (2015)
(Source: Geoportal.campas.gov.eg)

9.4 Transformation of the City, Urban Life and Public Spaces

Aside from significant, influential events, the growth of modern Alexandria can be mapped out through the following four morphological periods which influenced the development of the contemporary built forms and administrative structures. Each period was affected by economic, or political environments and resulted in a characteristic built urban form. This section aims to identify the morphological components of the existing city of Alexandria, particularly the Eastern Harbour and downtown, or the city centre, which are the selected areas that will be presented in later chapters, and include lifestyles, urban tissue and the links between them.

9.4.1 The First Phase (Mohamed Ali and The *Tanzimat* Changes 1805-1855)

Mohamed Ali Pasha's period was identified as the first phase of the city's revival (1807-1848), and the *Tanzimat* era, which spanned from 1839 to 1876, was characterised by the

Europeanization of the Ottoman Empire (discussed in Chapter 2). The Italian architects, Francesco Mancini and Pietro Avoscani, began their careers by creating a new European centre around the Place des Consuls, now known as “Meydan El-Mansheya” or Mohamed Ali square (1820-1855). They introduced Capitulatory economic existence to the urban scene, which was the first planning profession in the city; this confirmed the role of the cosmopolitan community in the management and the future of the city.

Francesco Mancini became Chief Engineer of the Ornaté (1834-1847), which was the first planning committee in both the city and Egypt. Meanwhile, the Alexandria Commission dealt with wide-ranging planning and urban management. Mancini’s task within the committee was complex and varied, ranging from the monitoring of day-to-day construction, issuing permits, managing urban development, and providing a master plan for the city’s rapid expansion and future development. His career in Alexandria was mainly linked to the expansion of the beginning of the European centre around Mohamed Ali Square ([Awad, 1996](#); [Pallini, 2016](#)).

By the end of this phase, the city stretched in two directions; firstly, it spread to the north to inhabit the rest of the island. Meanwhile, Mohamed Ali’s palace was located on the western edge of the ancient island to validate his affection to the city. Moreover, the town began to grow towards the outside of the old Turkish city and streets, and extended towards the empty area within the Arab walls (Figure 8-6). The southeast of the city became a location for the central business district (CBD), whilst the urban fabric located between the El-Gomrok and El-Manshiya districts with the small-scale buildings and streets (because the city was at its weakest when they urbanised) remained the oldest part of Alexandria. (Turkish city, see Figure 8-4). Compared to the “Turkish city” morphology this newly expanded area was planned by Mancini, as mentioned above, and called the “European city”. It was a reaction to the growing number of foreigners, mostly Europeans, who were encouraged by Mohamed Ali to settle inside the city walls area at El-Mansheya and El Attarin; Europeans eventually represented 30 to 40% of Alexandria’s population ([Fraser, 1981](#); [Empereur, 2002](#)).

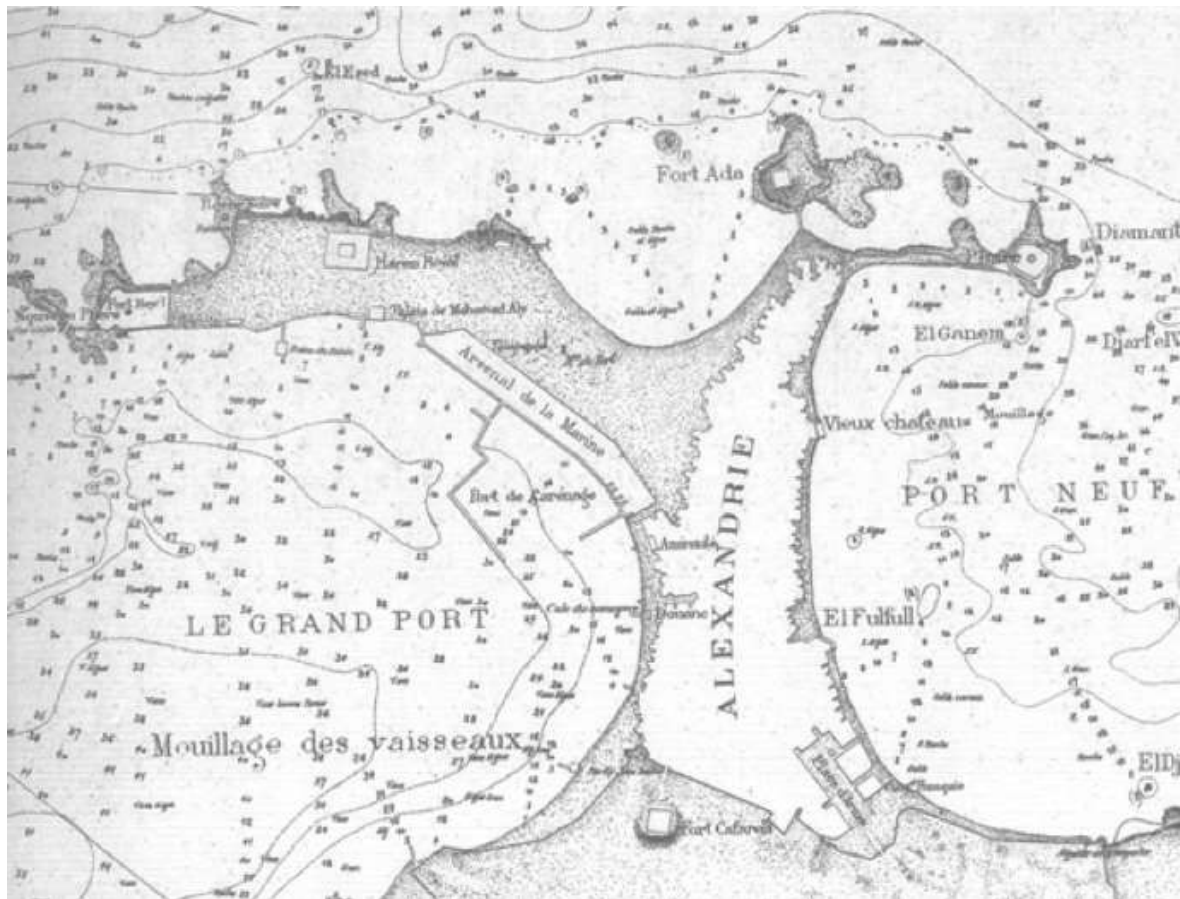


Figure 8-6 Alexandria's map 1834 (Source: [Jondet, 1921](#)) Planche XXXII.

Empereur (2002) stated that Mohamed Ali's development project in 1820 was the primary factor of this first transformation, when the original urban environment started to take shape. The Pasha was inspired to change and renew Egypt's connections with the European Mediterranean world and Alexandria with its port was key to his new policy. El-Mahmoudia canal was the first development project in Alexandria; in 1821, it provided the city with a regular supply of fresh drinking water for the first time in five centuries. Meantime, it became a passable and a navigable route that allowed ships and boats to enter the Western Harbour. Additionally, the new canal linked Alexandria with the rest of Egypt, and its transport links with the capital Cairo were improved beyond measure, whilst journey times reduced ([Empereur, 2002](#)). Between 1820 and 1849, the urban built-up area increased to about triple the size, from less than 16.2km² (4,000 acre) to nearly 47km² (11,545 acre), due to the fresh drinking water as well as the irrigation water provided in the city by El-Mahmoudia canal ([Abdel-Hakeem, 1958](#)).

In addition to the new canal, the shipyard was established in 1828; it was modernised and developed by the end of 1832 to become the arsenal to serve Mohamed Ali's strategic plans.

Also, in 1829, he commissioned French engineers to construct a large dock in the Western Harbour; this was established in 1833. In twenty years (1830-1850), the project increased the number of ships in the port by 47% and between 1880 and 1905, it increased by 214% (as shown in Table 8-8) ([Empereur, 2002](#)). Cotton harvests were shipped to England from Alexandria's port from 1822, and the total value of cotton exported amounted to L.E. 515,000, representing 31% of the total value of exports ([El Saaty and Hirabayashi, 1959](#); [Marlowe, 1965](#)). This flourishing maritime transportation led to flourishing trades.

<i>Year</i>	<i>Number of docking ships</i>
1830	1092
1850	1607
1880	2137
1905	6700

Table 8-8 Alexandria's western harbour docking ships number (1830-1905)

(Data from: [Empereur \(2002\)](#))

Such successes attracted immigrants to the city from all over the country ([Ilbert, 1996](#), [1997](#); [Mabro, 2006](#)). Hence, the population increased dramatically from 13,000 to 573,000 between 1821 and 1927, as shown in Table 8-9.

<i>Year</i>	<i>Population of Alexandria</i>
1821	13.000
1838	60.000
1860	180.000
1880	232.000
1927	573.000

Table 8-9 Alexandria's population (1821-1927)

(Data from: [Empereur \(2002\)](#), pp.90-91)

The success of Egyptian cotton in Lancashire led to an increase in the number of English merchants and others nationalities settling in Alexandria. Therefore, the city did not only attract Egyptians but also foreigners from all Europe, including Greeks, Italians, British and French, who formed about 14.5% and 19% from total city population in 1897 and 1907 respectively ([El Saaty and Hirabayashi, 1959](#); [Empereur, 2002](#)).

9.4.1.1 Physical Form

The street pattern in Turkish towns was narrow and curved (shown in Figure 8-4); these resulted in patchy irregular land plots, which saw the development of small mosques, residential dwellings and shops. According to the buildings' order, such constructions were built right up to the property boundaries with basic inner voids and pathways. The heights

9.4.1.2 Spatial Structure of Activities

Residential use was successful in the Turkish town, but this was habitually mixed with commercial and light industry. Local shops, workshops and cafes almost entirely occupied the ground floors. This range of uses recently encouraged more individuals to other parts of the city. The area of m²/person in the Turkish town was approximately zero, meaning that open spaces for public use were rare. Because 6% of Alexandria's population lived in this quarter and the density was approximately 60,000 people/km² (Dix, 1986), the lack of open space caused concern. However, the presence of the sea on both the Eastern and Northern borders countered this lack. Moreover, the waterfront promenade was one the most famous recreational attractions connecting the area with the city centre.

Because of the heritage of the quarter and its lifestyle, some markets were created in the El-Gomrok area, a significant number of which still flourish today, such as Zanket El-Settat (women's market) and Souk El-Fadda (silver market). Different shops and markets in the area were local and had, for a long time, been seen as old-fashioned by the developing commercial attractions of the modern city centre. Nevertheless, the 18th-Century spirit was still preserved in this area within its twisted and narrow lanes and its Ottoman architecture (Abdel-Salam, 1994).

9.4.2 The Second Phase (1855-1905)

The second phase started after the British bombardment in July 1882 (Figure 8-8) and continued up to World War I. After the destruction of the city; a rebuilding boom followed (Awad and Pallini, 2001). The reconstruction process was marked by the institutionalisation of public functions at the heart of the European square that was known as *Place des Consuls*, *Mohamed Ali* square and its surrounding areas. While the large commercial blocks and buildings formed a continuous commercial presence in the urban square, the renovation of the urban centre was established by the spread of elite residences. Moreover, the most important phenomenon of the period were buildings related to ethnic and community activities, such as schools, hospitals, churches and religious buildings, that were actively involved with, and responded to, the growing needs of their respective community, namely Greek or Italian or Armenian (Empereur, 2002).

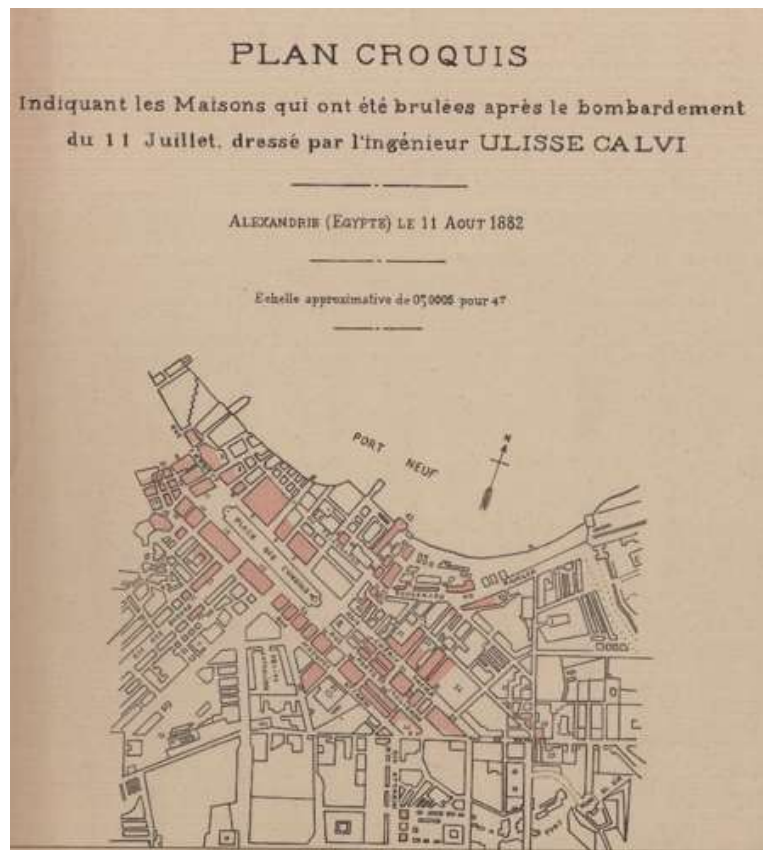


Figure 8-8 Mohamed Ali square (Place des Consuls) showing the demolished building from the bombardment in August 1882 (Source: [Jondet, 1921](#)) Planche XLVI.

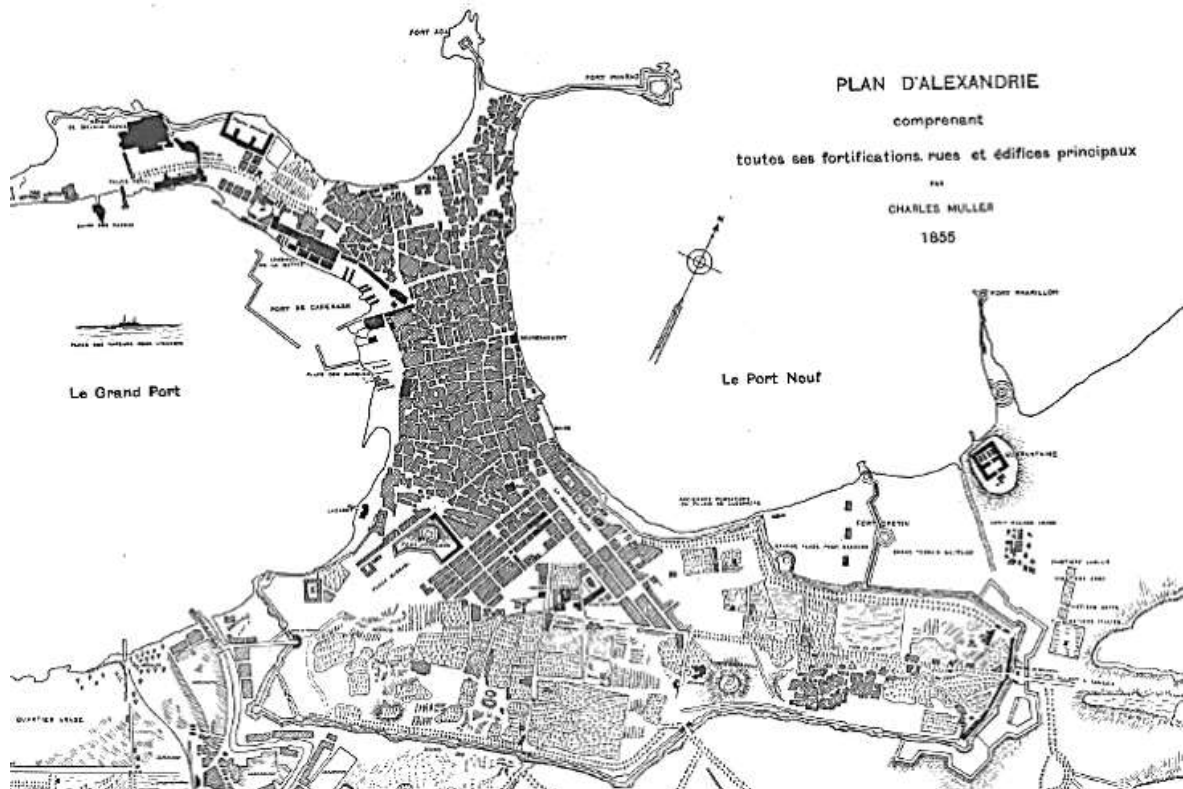


Figure 8-9 Alexandria Muller's map 1855 (Source: [Jondet, 1921](#)) Planche XXXV.

By comparing Muller's map from 1855 (Figure 8-9) with Alexandria's maps of 1887 (Figure 8-10) and 1902 (Figure 8-11), the growth of the city is evident. By the latter phase, the city is stretched in three different directions; firstly, via the built-up area reaching the El-Azarita quarter to the east, which formed a boundary. Secondly, the growth direction reached the El-Quabbary quarter in the west area, and finally, the city grew to the Mahmoudia canal, which was the southern border of this expansion.



Figure 8-10 Alexandria's map 1887 (Source: [Jondet, 1921](#)) Planche XLVII.

The Corniche Boulevard on the Eastern harbour, where the European ships dropped their imports and goods, represented the beginning of the transformation of the old Frankish quarter into the more modern European town ([Centre, 1999](#)). The area has a European imprint on its architecture, costumes, habits, local usage, and through the meeting and mixing of languages of East and West in the area. Thus, the Eastern waterfront was characterised by the façades of the Okelle, which bordered the old Frankish quarter street and the new square. In 1890, the Italian, Pietro Avoscani, first noted the idea to reshape the Eastern waterfront with an attractive coastal route.. By 1899, the idea was implemented by the municipality. The plan included a line of piers across the mouth of the port, and a strong wall around the bay, that accommodated the main drain at its base, plus a channel and broad

boulevard at the city level. This formed a semi-circle of 3.947 km and restored to Alexandria the port that was there in the past ([Pallini, 2016](#)).



Figure 8-11 Alexandria's map 1902 (Source: [Jondet, 1921](#)) Planche L.

However, the concept of how to use the port was not clear after its implementation and the design of the Corniche ([Breccia, 1914](#)). Nonetheless, it was decided that part of the 100-metre wide embankment was to form new building plots, providing a modern waterfront for both the Turkish and European towns. This featured the CBD and introduced a new hierarchy to the urban space ([Ilbert, 1996](#); [Pallini, 2016](#)). Nevertheless, despite the determination to move the port activity to the West and transform the city centre, building activity along the waterfront avenue made a slow start, and the Corniche was disconnected from the city ([Empereur, 2002](#)).

The most important aspect responsible for the enlargement in this phase was the transportation network, and particularly the railway network. The beginning of the second urban growth phase in Alexandria started with the establishment of the railway line in 1854 between Alexandria and Cairo ([Abdel-Hakeem, 1958](#)). El Saaty and Hirabayashi ([1959](#)) argued that Alexandria's urban development led to the construction of the railway line which resulted in the continuation of the city's urban growth. This train line allowed for the movement and flow of passengers and goods ([Empereur, 2002](#)). Moreover, the position of

the final station for cargo trains in Alexandria characterised the best location for the integration of transportation, as it was close to both the Western port and the El-Mahmoudia canal end (Figure 8-12).

Maritime transport in Alexandria port gained power due to this new railway line, and in 1858 Alexandria was connected to Suez as a result of the Suez-Cairo train line; this led to a significant increase in the movement of trade and transit trade between Europe and the Eastern regions ([Abdel-Hakeem, 1958](#)). Thus, 72% of Egyptian exports between 1853 and 1862 were transported through Alexandria's port; this increased to 94% between 1863 and 1872 ([Abdou Azaz, 2004](#)). Furthermore, in 1863 the construction of the railway between Alexandria and El-Ramel area in the East influenced the suburban growth of El-Ramel, whilst, another line was constructed in 1872 to link the city with Rosetta (Rashid), which stimulated the movement of the population to the Eastern areas ([Ilbert et al., 1997](#); [Empereur, 1998](#)).

Due to the constant growth of the city; the municipal council of Alexandria was established in 1890; thus, Alexandria became the first city in Egypt to implement local urban management; its committees ran the city, managing the water supply, drainage, street paving, and urban projects by using income from local taxes. One of the municipal council's achievements in the first half of the 20th Century was the planning of the modern city and its city centre, which focused on wide straight avenues and large squares, as it expanded gradually toward the East . An Eastern direction was the preferred choice for residences amongst rich Greek merchants. As growth continued, the walls of the old city were demolished, and the the urban area extended out towards Rushy and El-Ramel ([Abdel-Hakeem, 1958](#); [Empereur, 2002](#)). By this time, in 1865, public utilities were established; namely gas and electricity under Lebon and Co. and water in 1879 under the Alexandria waterworks company ([El Saaty and Hirabayashi, 1959](#)). In 1878, the city was one of the first to establish sewerage construction, and a new project was planned and implemented to serve about 240,000 inhabitants ([Abdel-Hakeem, 1958](#)).



Figure 8-12 The final station of a cargo train part of Alexandria's map 1882 (Source: NAME, DATE)
Planche XLV.

9.4.2.1 Physical Form

In the early 20th Century, a new block of buildings and two streets were developed parallel to the Eastern Harbour on the land that emerged as a result of the sea's retreat (shown in Figure 8-13). On this strip, the buildings were higher than the average three storeys in the old area, and their style was influenced by European eclecticism, which prevailed at the turn of the 20th Century. The classification of open spaces consisted only of linear spaces, and most streets formed an irregular layout. These streets created a complex circulation network for the local area; some provided a few points of access from outside the city. However, access to the city centre to the South-East was only possible through these streets and along the bordering Corniche Road. The remaining open spaces were private or semi-private and modest and intimate in scale. The remaining older stock buildings were in a poor condition ([Pallini, 2016](#)).

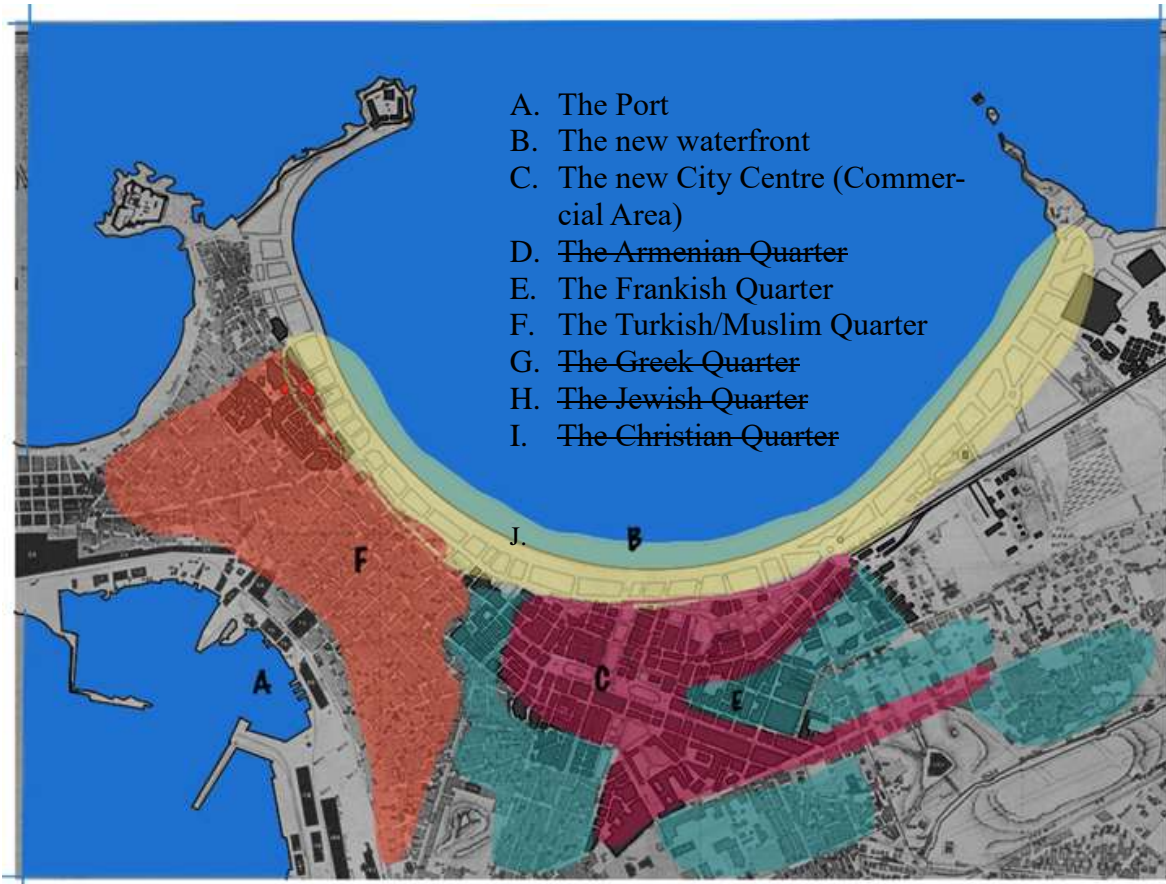


Figure 8-13 20th Century The new waterfront (B) (Source: [Jondet, 1921](#)) Planche L

The arrangement of open space in this western extension (El-Quabbary) was mainly represented as a grid of straight streets, with low-rise buildings. The streets were considerably wide to serve heavy-goods trafficas whilst cargo traffic was central to the function of the area and gradually occupied most of its circulation network. Heavy transport to and from this area was a major issue and was constantly being revised in the city, as well as regional, planning systems ([Abdel-Salam, 1995](#); [Pallini, 2016](#)). This situation remains to this day.

The typology of open space within the southern area, adjacent the city centre, consisted of straight streets, which were often long and form a grid layout. The buildings occupied all of the blocks and were almost uniform in order. They were predominantly apartment blocks built on small subdivisions of land. Building heights varied between two and ten storeys, and with the exception for the streets and a few squares, little open space was available for public use ([Abdel-Salam, 1995, 1994](#)). Once again, this situation continues today.

9.4.2.2 Spatial Structure of Activities

Industry comprised the main land use in the west area, and factories, warehouses and workshops intermingled with residential blocks. Residents were mostly employed by local industries. Other employers from different areas of the city commuted to these districts on a daily basis. A common practice was for every company to provide bus transportation for its labour, according to their rota of shifts. The construction of a new port at El-Dekhela was an important step in enhancing the area's performance as the country's leading maritime gateway. However, air pollution caused by the large-scale industrial plants drew significant attention to its negative impact on the area's residents ([Abdel-Hakeem, 1958](#)). Meanwhile, to the south, the quarters, which rapidly expanded at this stage in Alexandria's history, were described by Forster in 1922 as neither smart nor picturesque. Although, they include the site of Rhakotis, which was the nucleus of ancient Alexandria and where remarkable antiquities were preserved ([Forster, 2014](#)).

Areas in these districts, which were adjacent to the city centre in the north, were interdependent with the centre. They were lower in quality and importance and attracted only middle to low-income residents. Furthermore, the south had even lower quality areas. Generally, the area was over-crowded with a high concentration of residential use. Commercial activities located on ground floors were complementary to the centre's functions. Some factories were located in the southernmost parts. At this stage, the number of European nationals migrating to Alexandria was increasing, due to its promotion and encouragement by rulers seeking modernisation and economic reform. Egypt's re-integration as a major cotton exporter further accelerated this process of European penetration into the world economic system. The process of borrowing western styles manifested in the adoption of mostly eclectic revival styles, such as Neo-Renaissance, Neo-Gothic, Neo-Classic and later Art Deco. The tendency to imitate European styles, and change the open space structure and typology, also reflected the government's concern to boost the property market for the new pluralistic society ([Empereur, 1998, 2002](#)).

9.4.3 The Third Phase (1905-1955)

The inter-war period (1918-1939) identified the third phase, which followed within booming economic conditions in Egyptian affairs. The period was noticeable by its powerful collectivity in community projects, its mixture of business (which included strong Egyptian participation), while having to satisfy the aspirations of the new rising professional and

technical backgrounds of the middle class; their properties were closer to modern international styles and the new garden outskirts or greenbelt ([Abdel-Hakeem, 1958](#)).

Comparing Alexandria's maps from 1902 (Figure 8-11) with those from 1955 (Figure 8-14) to highlight the boundaries of growth, the city continued to stretch towards the east, west and south. The easterly direction was the most pronounced among the movements and divided the city's growth into three periods; the first stage was the urban waterfront development, which arose from Al-Ibrahemya to the east. Planning the Corniche (Coastal Boulevard) from 1905 to 1934 was one of the major motivations for urban development in this area ([El Saaty and Hirabayashi, 1959](#)). The second stage, saw urban development continue towards the east but at a narrow width due to the difficulty in extending over the Smouha area. This was the result of the aridity of Al-Hadara lake; the development rate was slow due to sewerage problems, the shortage of transportation, and swamps. Finally, the third stage started from Sidi-Bisher, continued to Al-Mandara and grew beyond El-Montaza Palace where El-Maamoura district was located ([Abdel-Hakeem, 1958](#)).

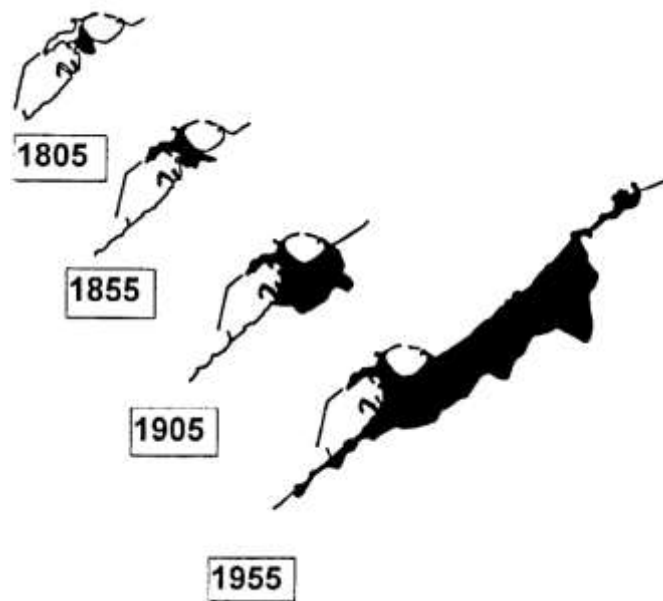


Figure 8-14 Alexandria growth (Adapted from: [Abdel-Hakeem, 1958](#))

Secondly, in the west, the built-up area expanded beyond the western port; thus, El-Quabary, El-Max and El-Dekhela attempted to develop the-Agamy area as a summer resort. City authorities planned to solve the transportation problem in the area by adding a bus line and establishing a new hotel. However, the western area did not attract a large number of people due to the existence of wood, cotton and petroleum warehouses and some small factories.

This prevented urban growth, as the narrow strip of land halted the spread of housing and, due to its distance from the El-Mahmoudia Canal, it remained difficult to ensure a supply of fresh and drinking water ([El Saaty and Hirabayashi, 1959](#); [Fraser, 1981](#)).

Finally, the movement to the south covered built-up areas and spread to cover all gaps. This involved the north El-Mahmoudia Canal, and particularly the parts to the south of Moharam Bek quarter including a new residential area between El-Mahmoudia canal and the railway line in the south, called “Ghait El-Enab” (meaning grape field). In 1947, the total area of this new quarter was 1,440 km², and the population was 45,685 with a density of more than 30,000/km². The main attraction for the population in this area was the low cost and the charge of land prices and rents; this appealed to the low-income sector of the population who developed this area of the city ([Abdel-Hakeem, 1958](#)).

Industrial development in Alexandria started in 1930, and it was a key factor in the city growth due to the factories that were built on its edges. An additional factor was the improvements that were made to the waterfront by the municipal council of the city, who aimed to create an attractive summer resort; this change resulted in an annual seasonal flourishing ([El Saaty and Hirabayashi, 1959](#)). Moreover, the educational facilities in general improved through the establishment of Alexandria University in 1942, and led to the migration of many students seeking higher education.

9.4.3.1 Physical form

In 1919, W.H. McLean planned the use of empty plots to create Place des Obelisques (shown in Figures A-15 and A-16) and Place des Mosques (illustrated in Figure 8-17) in his planning scheme for Alexandria. The compact row of buildings appeared along the Corniche in the late 1920s and included a series of public and community buildings intersecting with residence blocks. These were unified in both height and architectural elements, and featured a compact urban façade (shown in Figure 8-18) ([Alexandria et al., 1921](#); [Pallini, 2016](#)).

The typology of open space, takes the form of a grid of streets and squares, where the main streets run parallel to the sea, while the minor streets intersect perpendicularly. The blocks shaped by the layout are divided into organised plots (shown in Figure 8-19). The area adjacent to the city centre contained apartment blocks, with shops, cafes, restaurants and garages on the ground floor. Further east, the building typology included single-family houses, which are currently being replaced by high-rise apartment blocks. The circulation

network included planned streets and squares of various shapes and sizes ([Abdel-Salam, 1995](#)).

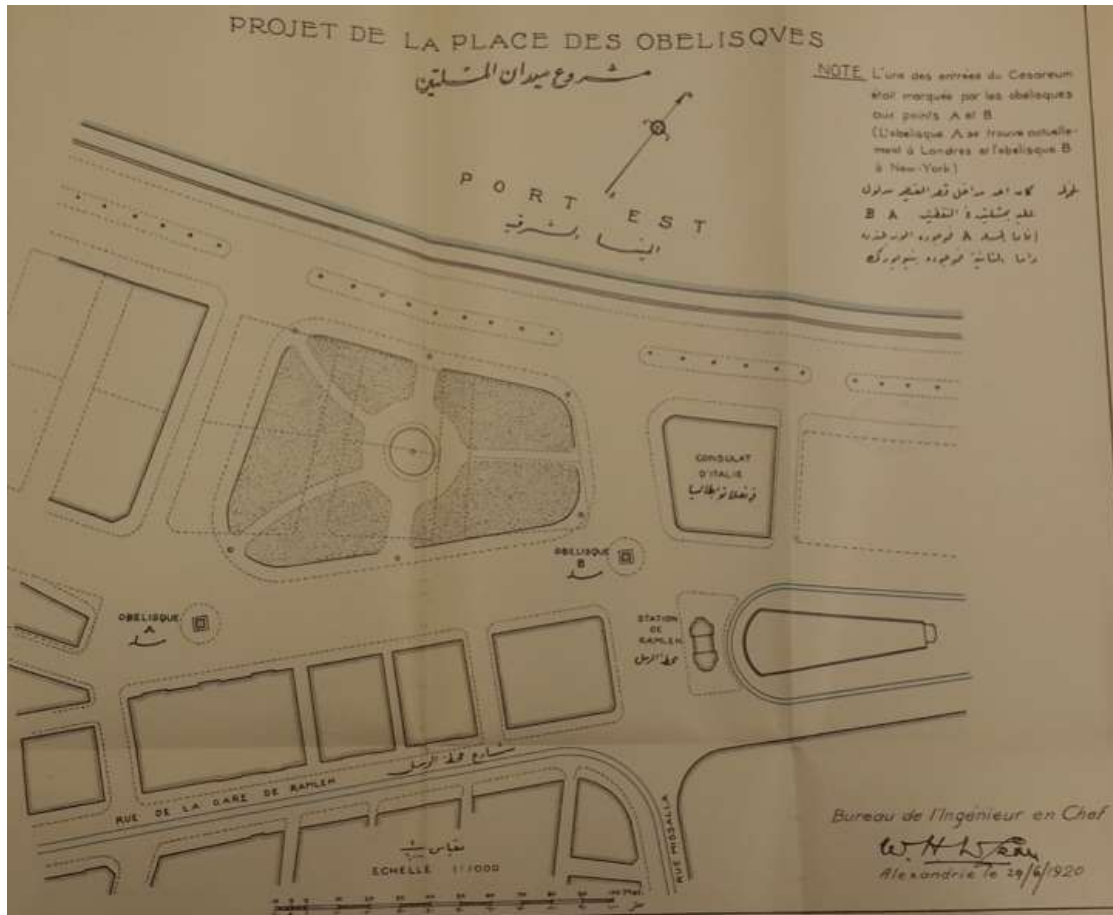


Figure 8-15 The Obelisks Project (Source: [Alexandria et al., 1921, p.10](#))

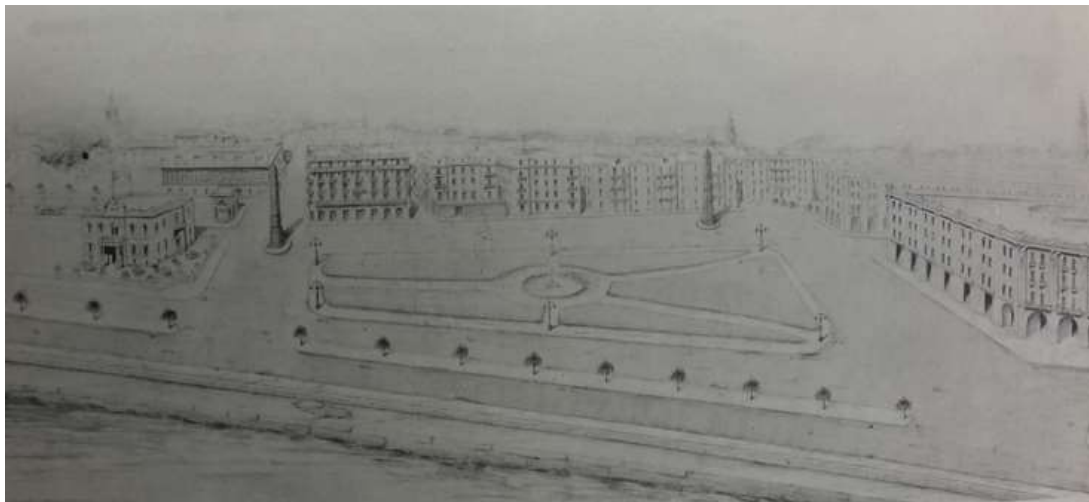


Figure 8-16 Mc Lean Design of the Obelisks Project (Source: [Alexandria et al., 1921, p. 11](#))

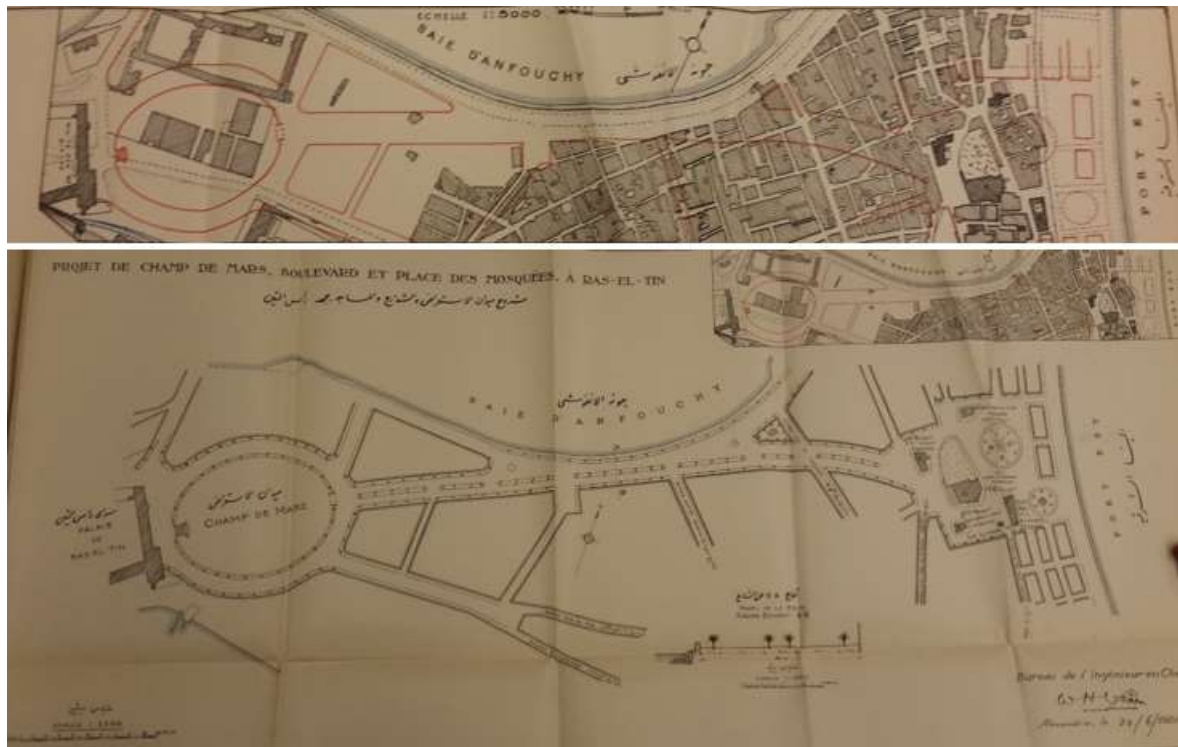


Figure 8-17 The Mosques Square Project showing the area and its renovation
(Source: [Alexandria et al., 1921](#), p.6)



Figure 8-18 Auction's photograph of Alexandria's waterfront skyline and compact urban façade (Source: Unknown)



Figure 8-19 Aerial view of Alexandria's waterfront in the 1930s (Source: [Pallini, 2016](#))

9.4.3.2 Spatial Structure of Activities

Alexandria's development towards the East, within the area adjacent to the city centre, saw the construction of mainly residential buildings. These aimed to meet a range of public needs, such as education and recreation. New commercial centres, with their variety of shops, businesses and entertainment activities, were developed in the El-Ibrahemia area. Alexandria University and many of the city's distinguished educational institutions and schools, such as St. Mark's College, were located in the Chatby area. Private and public beaches lined the seaside, and the continuous promenade along the sea was, and still is, a key tourist attraction. Separately from other significant districts, Bacchus, Victoria and Mandara developed in the southeast near to both agricultural lands and industrial areas. Frequent traffic flow from this zone to the city centre saw the development of public transportation between the two areas and city centre via trams, buses and railway lines. This grew to encompass destinations further east on the East-West axis ([Abdel-Hakeem, 1958](#); [Abdel-Salam, 1995](#)).

9.4.4 The Fourth Phase (1955-1993)

In this phase, urban growth expanded to the four following locations: firstly, industrial sites developed in Abou-Kir, which was located in the East beyond El-Maamoura. Secondly, new residential sites began growing alongside the industrial area in El-Seyof and El-Ras Elsoda,

which were located to the South-East ([Abdel-Hakeem, 1958](#)). Thirdly, in El-Amreya in the South-West, new suburban homes expanded as well as factories manufacturing cement, petroleum, chemicals, petrochemicals and building materials. Finally, the King Mareot area by Mareotis Lake was where the fish farms flourished as well as warehouses for the extraction of salt and wood; the area started as a summer resort featuring hotels and villas but soon began to attract permanent residents who encouraged the growth of educational buildings ([Abdou Azaz, 2004](#)). Furthermore, luxurious neighbourhoods and districts began to appear in the east, which cost the northern and central areas some of their residents. However, those two areas still kept their historic value.

Foreign communities who resided in these areas left some significant historical buildings, which were vulnerable to major change and transformation in both their look and their purpose. For instance, those in the city centre became government and public offices. Numerous demolitions took place due to the increase of modern buildings in both directions, namely east and west; this saw an expansion that changed the city's character socially, economically and culturally. With the transformation of the summer resorts to residential buildings, large numbers of residents moved to the city centre causing a fast growth in the population, which generated a remarkable imbalance due to the inability to accommodate such rapid urbanisation ([Abdel-Salam, 1995](#)).

The cosmopolitan character of Alexandria soon became at such risk that, in 1982, the Governate of Alexandria and Alexandria University executed an extensive study of the city. The study noted that Alexandria was a linear cosmopolitan city; it had expanded like a ribbon from Abu-Kir in the east to Marakia, a tourist resort, in the west. It inhabited the Mediterranean coast for a distance of 60km long and about 5km wide, in some areas. Moreover, the study revealed two types of urban tissue; an irregular organic pattern in the old area of the peninsula, known as El-Gomrok District, and the regular organised grid in the remaining urban stretch ([Abdel-Salam, 1995](#); [Awad, 1996](#); [Abdou Azaz, 2004](#)).

At this time, Alexandria remained the main port of Egypt; it handled 80% of its shipping, and represented 38% of Egypt's industrial activity. Receiving 1.5 million tourists annually also made it a major commercial and recreational centre of the country ([Abdel-Salam, 1994](#); [Abdel-Salam, 1995](#)). A Master Plan established in 1982 included projects up to the year 2005, which aimed to preserve the valuable historical character of the city as well as address issues such as its population growth, the worsening of the housing state and the increase of

construction and land costs. It also included recommendations to protect the agricultural lands and to control pollution as well as ensure industrial management ([Abdel-Salam, 1995](#)).

9.4.4.1 The City Centre Morphology

The history of Alexandria is not reflected in the existing structure of the city. The latest demarcation of the city centre took place in 1983 and consisted of a comprehensive plan; it noted that the city centre was surrounded by the Corniche Road North, Safia Zaghloul Street East, El-Attareen Mosque and Soleiman Yousry Streets South and Ahmed Orabi Square West ([Abdel-Salam, 1995](#)). Moreover, only a few archaeological sites lasted from the Greco-Roman city. Today's street layout still reflects the ancient plan of Alexandria; for instance, El-Horreya Avenue, known today as Abou-Kir Street, accurately matches the Greek 'Canopic Street' while Rashid Street and El-Nabi-Daniel Streets match the Greek 'Soma Street'. The Island of Pharos, which was once a peninsula, became a part of the mainland. However, both east and west harbours continue to provide the essential foundations of the urban structure ([Dix, 1986](#); [Ilbert et al., 1997](#); [Fraser, 1981](#); [Empereur, 2002](#)).

9.4.4.2 Physical Form

The combination of two basic grid shapes form the typology of the space; the first represents the orientation of the 19th Century and comes into contact with the second one at a 45° angle; together, they form an irregular grid creating the eastern development which corresponds to the harbour seashore. This connection created a radial network, which considers the Eastern Harbour the focal point, where the open spaces are located axially (shown in Figure 8-20). Moreover, a linear continuous urban scale provides a clearly visible skyline and buildings of 20-25 meters high on both sides. The streets stretching from east to west are parallel to the harbour while the transverse streets run perpendicularly, from north to south.

However, 80% of the buildings characterising the spaces are of significant historical and architectural value with their notable European style that includes Neo-Baroque, Neo-Classical, Neo-Islamic and Neo-Italian styles ([ElSemellawy, 2011](#)). Nevertheless, modern styles, such as Early Modern, Grand Style and International Architecture, are also noticeable. The urban blocks are divided into subdivisions with occasional voids that are usually inaccessible and narrow alleys that benefit both pedestrians and vendors. Although the condition of the buildings range from acceptable to decent, it is important to address the continuous deterioration of their finishing materials ([Abdel-Salam, 1994](#)).

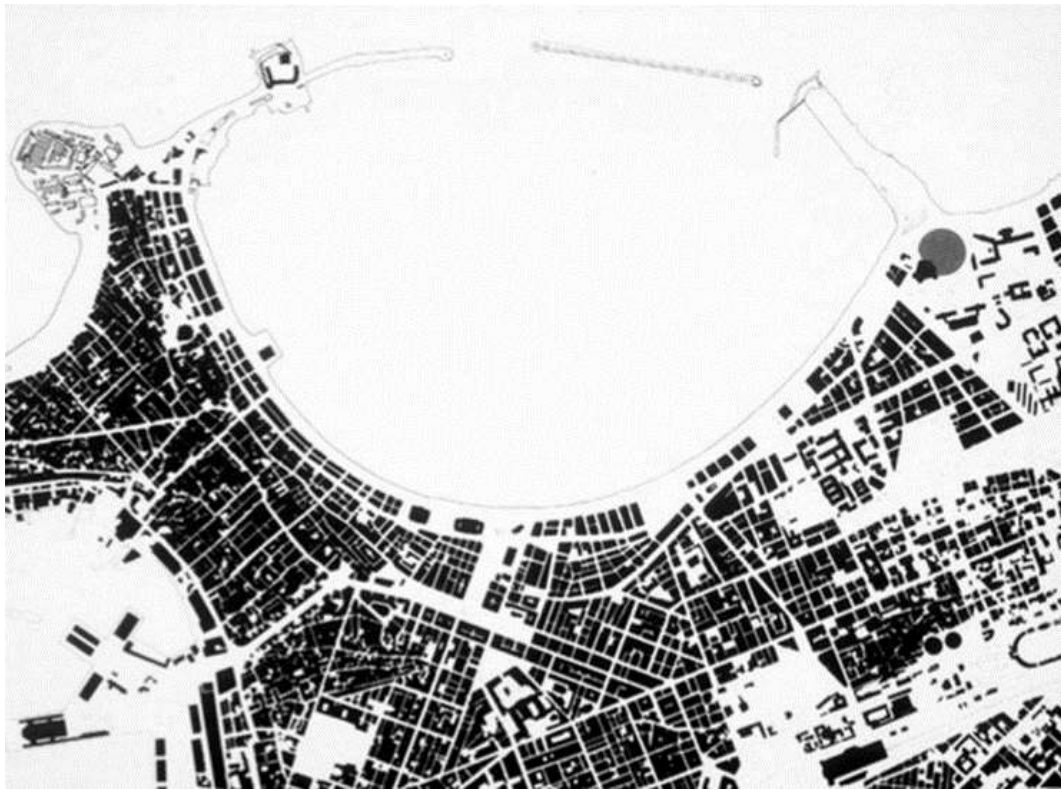


Figure 8-20 Square open spaces of the Eastern Harbour located on the periphery of the demarcated centre

9.4.4.3 Spatial Structure of Activities

While the residential purpose of the city centre spaces continue to dominate, the growth of entertainment, commercial and business activities has transformed almost all the ground floors and over 90% of the front of buildings have become stores, banks, restaurants, offices and clinics. Other buildings have been entirely altered to become theatres, cinemas, nightclubs, museums, government offices, and religious or cultural centres. Such activities include commercial, entertainment and recreational and have contributed to make the harbour a major attraction to pedestrians and added vitality to the area for both day and night. It is vital to address the uncoordinated renovation projects that take place in the area as well as the lack of public amenities and outdoor activity. The narrow streets struggle to accommodate the constant and increasing traffic as well as the significant growth of the population, whether through the number of residents or street users. Several streets have become one-way in an attempt to solve some of the congestion as well as to prevent vehicles parking in certain streets ([Abdel-Salam, 1994, 1995](#)). All of the above significantly affects the social life and the image of urban spaces in the city centre. This is currently a notable threat to urban quality, and one faced by the open public spaces on the waterfront of the Eastern Harbour.

10. Impressionistic Assessment Sheet (Appendix B)

Urban Design Inventory		Quality Score	
#	Questions	Highly Inappropriate	Highly Appropriate
Abu El Abbas		1	2 3 4
Linkage and Access (Functional)			
1	Is there car access leading to the space? (Drop off)		
2	Is there pedestrian access leading to the space?		
3	Is there parking available?		
4	Is the space accessible by public transportation? (Bus/ Micro-bus/ Tram)		
5	Is there a pedestrian network connecting the space to other locations?		
6	Are the pavements and lanes suitable for users with special needs?		
Safety and Security (Perceptual)			
7	Is the parking area safe for users? (Gang, thieves...)		
8	Are there pedestrian crossings around/near the space?		
9	Does the design provide safety (crime) during the day? Visibility		
10	Does the design provide safety (crime) during the night? Lighting/Visibility		
11	Does the design provide safety for elderly and users with special needs?		
12	Is the space safe to be used by women/girls during day and night?		
Outline and Design Features (Social)			
13	Is the place appearance unified?		
14	Does the space have a spatial character and a sense of identity?		
15	Is there a proper proportion between the masses and the space?		
16	Is there richness and variety of the pattern (hard-scape and soft-scape) elements?		
17	Does the space have a meaningful value?		
18	Does the space have a sense of enclosure?		
19	Is the space in appropriate proportion to the human scale and comfortable for users?		
Permeability and Movement (Social)			
20	Are the users allowed to enter from any side (multiple pathways)?		
21	Are the axes providing view directions or focal points?		
22	Is the width of the pedestrian lanes suitable for the users?		
23	Is there any connectivity with other public spaces?		
24	Is the space suitable for all users of all ages?		
25	Is the space suitable for users with special needs?		
Diversity and Complexity (Functional)			
26	Is there diversity in the usage of the surrounding buildings?		
27	Is there complexity in the appearance of the surrounding buildings?		
28	Is there complexity in the materials?		
29	Is there complexity in the use of colours in the space?		
30	Are there a diverse uses evident in the space?		
31	Is there diversity in users?		

Visual Pleasing and Appropriateness (Perceptual)		
32	Is the Design's layout attractive?	
33	Is the urban furniture attractive?	
34	Are the lighting features attractive?	
35	Is the paving pattern attractive?	
36	Are the surrounding buildings attractive?	
37	Does the design make use of natural view? If any	
38	Are there public art displays in the space?	
39	Are the seats arranged for varying views? (Trees, Sea, Fountain, or street view)	
Place Management and Maintenance (Perceptual)		
40	Is the soft landscape well maintained?	
41	Is the hard landscape well maintained?	
42	Does the space appear clean?	
43	Are the light features well maintained and replaced once needed?	
44	Is the Urban furniture well maintained?	
45	Are the waste disposal bins placed near the vendors and seating area?	
Microclimatic Considerations (Functional)		
46	Does the space provide natural shades (trees)?	
47	Does the space provide shade features?	
48	Does the space provide elements of water to reduce the summer heat?	
Place Identity and Character (Perceptual)		
49	Is the space part of a historical area?	
50	Does the space have architecture character?	
51	Does the space appear elegant?	
Function and Use (Social)		
52	Does the space act as a destination for users?	
53	Does the space act as transaction area for users?	
54	Is the space family friendly?	
55	Is the space ethically friendly?	
56	Is the space used to celebrate social/political/religious events?	
57	Is the space considered a tourism destination?	
58	Is there accommodation for different activities?	
59	Is there comfortable seating?	
60	Is there a wide variety of seating choices from lawn space to benches to suit individual or group activities?	
61	Can people be found eating food/drinking from local vendors on the lawn, reading on benches, or chatting with friends near the fountains?	
62	Is there access to cafes?	
63	Is there access to restaurants?	
64	Is there access to a public toilet?	
65	Is there a street vendor?	

11.Walking Tour Tool Assessment sheets (Appendix C)

Q1 You are being invited to take a part in a PhD research study. I would be grateful if you could spare 20 mins of your time to complete the Sightseeing Assessment Tool to evaluate the Urban Squares of Alexandria's Eastern Harbour.

Q2 Are you a resident in Alexandria?

☐ Yes

☐ No

Q3 Are you an Architect or Urban Designer?

☐ Yes

☐ No

Q4 Title/Name (Optional)

[-----]

The next pages are repeated for each square to evaluate

Walking Tour Assessment		
#	Questions	Quality Score
Saed Zaghloul Square		Highly Inappropriate 1 2 3 4 Highly Appropriate
Functional Aspects		
1	To what degree does the space accessible from the surrounding urban context?	
2	To what degree does this space include iconic features (Landmark) that make it unique and probably visible from a distance?	
3	To what degree does the space contain diverse uses?	
4	To what degree is the form of the space suitable for the existing uses?	
5	To what degree does the space have a clear boundaries/ edges?	
6	To what degree does the space contain multiple gathering locations?	
7	To what degree does the design of space can be adapted and modified according to needs and requires?	
8	To what degree is the space crucial to the surrounding urban context?	
9	How would you rate the quality of architectural vocabulary in the space?	
10	To what extend are the buildings adjacent to the space harmonious to one another and to the pattern of the space?	
11	How would you rate the quality of landscape features in the space?	
12	To what degree could the design of the space be labelled as environmentally-friendly?	
Perceptual Aspects		
1	To what degree does the space offer the feeling of safety and security to its users?	
2	To what extend are night facilities support the sense of security and safety at night?	
3	To what degree could the physical design of the space raise the feeling of comfort and relaxation?	
4	To what degree does the space endure the feeling of vitality?	
5	To what degree does the architecture character of the space can be described as memorable?	
6	To what degree does the architectural character of the space reflect Alexandria's identity?	
7	To what degree could the place be described as the image of the city?	
8	To what extend do the signs/ billboards in the space reflect different ethnics?	
9	To what degree could the spatial experience in the space be described as being fascinating?	
10	To what degree does the noise level measured acceptable?	
11	To what degree does the space's layout reflect personal distance and privacy?	
12	To what degree does the space raise users' attachment to it while offering occasions for a human experience?	

Walking Tour Assessment		
#	Questions	Quality Score
Saed Zaghloul Square		Highly Inappropriate 1 2 3 4 Highly Appropriate
Social Aspects		
1	To what degree do the buildings enclosed the space respect the human scale?	
2	To what level does the space function pleasantly with the surrounding context?	
3	To what degree could the space be labelled as being socially inclusive?	
4	To what degree does the space encourage and support interaction?	
5	To what degree does the space encourage the social inclusion of different ages?	
6	To what level does the space encourage interaction between different social groups?	
7	To what level do the uses in the space serve different social groups?	
8	To what degree does the space host diverse social activities?	
9	To what extent does the space furniture serve multiple users and activities?	
10	To what level is the space accessible by different options of transportation?	
11	To what degree is the space accessible from the urban surrounding?	
12	To what level is the space accessible for those who seek special needs?	

12.Observation and Mapping Sheets (Appendix D)

Observation Sheets

Location:
Date:
Weekday week end
Temperature:
Time: Morning, afternoon, evening

Weather
describe the weather

Location
write about where I am sitting



People and activities

record people's behaviour, action, and interaction. Sketching the activities and movement on the map. Focus on how people move around, walking, sitting. Where the group people seat, or gender or ages

Number of groups and users:

Count. No of users' age (Children adult elderly), gender and ethnicity if any

Observation Sheets

Location:
Date:
Weekday week end
Temperature:
Time: Morning, afternoon, evening

Weather
describe the weather

Location
write about where I am sitting



People and activities

record people's behaviour, action, and interaction. Sketching the activities and movement on the map. Focus on how people move around, walking, sitting. Where the group people seat, or gender or ages

Number of groups and users:

Count. No of users' age (Children adult elderly), gender and ethnicity if any

Observation Sheets

Location:

Date:

Weekday week end

Temperature:

Time: Morning, afternoon, evening

Weather

describe the weather

Location

write about where I am sitting

**People and activities**

record people's behaviour, action, and interaction. Sketching the activities and movement on the map. Focus on how people move around, walking, sitting. Where the group people seat, or gender or ages

Number of groups and users:

Count. No of users' age (Children adult elderly), gender and ethnicity if any

Observation Sheets

Location:

Date:

Weekday week end

Temperature:

Time: Morning, afternoon, evening

Weather

describe the weather

Location

write about where I am sitting

**People and activities**

record people's behaviour, action, and interaction. Sketching the activities and movement on the map. Focus on how people move around, walking, sitting. Where the group people seat, or gender or ages

Number of groups and users:

Count. No of users' age (Children adult elderly), gender and ethnicity if any

13.Users' Reaction Questionnaire (Appendix E)

English Version

1/9/2018

Qualtrics Survey Software

DEPARTMENT OF ARCHITECTURE



Transformation and change of public spaces in Mediterranean port cities: Alexandria's Eastern Harbour

Introduction

My name is Amira Nagy Elsemellawy, I work as Assistant Lecturer in Architecture at the Arab Academy of Sciences and Technology and Maritime Transport from Alexandria (Egypt). I am currently a PhD student/researcher at University of Strathclyde living and studying in Glasgow, Scotland UK.

This survey is part of a PhD research project investigating, evaluating and identifying the key factors (functional, social and perceptual) and their impact on the users of transformed urban public on waterfront of Alexandria's Eastern Harbour. It will be carried out as an online questionnaire in English and Arabic, by the researcher.

What is the purpose of this investigation?

The purpose of this investigation is to identify the most important factors with respect to the transformed urban public spaces and their impact on the waterfront of Alexandria's Eastern Harbour. The research aims to help urban designers, architects, and decision makers understand the users' needs and examine the relationship between people and their urban environments.

Do you have to take part?

You are invited to answer the questionnaire only if you feel comfortable. It is your own decision to take part in the investigation. All the information you provide is anonymous and will be used for statistical analysis for the purpose of this research. You are under no obligation to participate in this questionnaire, although it will be very appreciated if you could reserve the necessary time to respond to the questionnaire. You can withdraw at any time.

Please be assured that the survey is completely anonymous.

What will you do in the project?

Your participation in this study is entirely voluntary to answers close-ended questionnaire about the urban public spaces on the waterfront of the Eastern Harbour of Alexandria (1) El-Mansheya square (Mohamed Ali square and Ahmed Orabi square) , (2) Sa'ed Zaghloul square, (3) Abu-El-Abbas square and (4) El-Khaldin Garden. And will take you approximately 12-14 minutes to complete.

Why have you been invited to take part?

You were invited to be a part of this investigation because you:

- Are between the age of the 18 and 55+
- Have been living in Alexandria for at least one year
- Are using the public space on the waterfront the Eastern Harbour for necessary, optional or social reasons/activities.

What are the potential risks to you in taking part?

We believe there are no known risks associated with this research study; however, as with any online related activity the risk of a breach is always possible. To the best of our ability your answers in this study will remain confidential. We will minimize any risks by guaranteeing that the survey is completely anonymous.

What happens to the information in the project?

All the data collected and the information you provide is anonymous and will be used for statistical analysis for the purpose of this research.

The University of Strathclyde is registered with the Information Commissioner's Office who implements the Data Protection Act 1998. All personal data on participants will be processed in accordance with the provisions of the Data Protection Act 1998.

Thank you for reading this information. We would gladly answer any further questions or inquiries you may have

What happens next?

Thank you for taking time to read this information. If you are willing to participate in the project, you will be asked to sign a consent form to confirm your choice. The information from this study will be published as a PhD thesis and may be disseminated by other means, such as academic papers, conferences or lectures after the completion of the project.

Researcher contact details:**Amira Elsemellawy**

PhD researcher

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75 Montrose Street, Glasgow, G1 1XJ, UK

Telephone: +44 (0) 777 0694 799

E-mail: amira-nagy-mahmoud-elsemellawy@strath.ac.uk

a.elsemellawy@gmail.com

Attitude Survey

User Reactions to Public Spaces

Section 1: Please take a few minutes to answer some background questions.
As stated, the survey is completely anonymous and no one can be identified by these responses.

1. What is your gender?

- ☐ Male ☐ Female
-

2. Which age group do you belong to?

- ☐ 18
☐ 19-25
☐ 26-35
☐ 36-45
☐ 46-55
☐ 55+
-

3. City of residence

- ☐ Alexandria
☐ Cairo
☐ Rural areas around Alexandria
☐ Rural areas around Cairo
☐ Other
☐ Foreigner
-

4. Which of the following describes your employment status?

- ☐ Student
☐ Employed (Public/Government)
☐ Employed (Private)
☐ Self-employed
☐ Unemployed
☐ Retired
-

Section 2: Visual Preference

5. Select the Urban Spaces that you like the most in order

Most 1 2 3 4 5 Less

	1	2	3	4	5
El-Khaldin Garden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sa'ed Zaghloul Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mohamed Ali Square (El-Mansheya Square)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ahmed Orabi Square (El-Mansheya Square)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Abu-El-Abbas Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. Please explain below the reasons why

$\{q://QID7/ChoiceGroup/ChoiceWithLowestValue\}$ you like the most and
 $\{q://QID7/ChoiceGroup/ChoiceWithHighestValue\}$ is the less?

7. Select 3 spaces that in your opinion represent the city of Alexandria

- ☐ El-Khaldin Garden
- ☐ Sa'ed Zaghloul Square
- ☐ Mohamed Ali Square (El-Mansheya Square)
- ☐ Ahmed Orabi Square (El-Mansheya Square)
- ☐ Abu-El-Abbas Square

8. Please explain below why $\{q://QID8/ChoiceGroup/SelectedChoices\}$ represent the city of Alexandria

9. Select 3 spaces that you visit the most for different purposes

- ☐ El-Khaldin Garden
- ☐ Sa'ed Zaghloul Square
- ☐ Mohamed Ali Square (El-Mansheya Square)
- ☐ Ahmed Orabi Square (El-Mansheya Square)
- ☐ Abu-El-Abbas Square

10. Select all the applicable purposes/reasons for your visit to each square

	El-Mansheya Square	Sa'ed Zaghloul Square	El-Khaldin Garden	Abu-El-Abbas Square
Shopping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Administrative purposes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leisure and relaxation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recreational	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Attending an event	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Meeting friends/ Social purposes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Religious events/ participation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. Select 3 spaces that you pass by the most

- ☐ El-khaldin Garden
- ☐ Sa'ed Zaghloul Square
- ☐ Mohamed Ali Square (El-Mansheya Square)
- ☐ Ahmed Orabi Square (El-Mansheya Square)
- ☐ Abu-El-Abbas Square

12. Please explain reasons for your choices

The following is a set of qualities that describe the spaces, please select the adjectives that describe each space.

Please select against the qualities that you believe relevant to each space from Q13 to Q17

13. How do you describe Mohamed Ali Square from your previous visits

	Yes	No	Neutral
Attractive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Active	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relaxing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Simple	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Familiar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motivating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pleasing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Iconic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inviting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Usable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clean	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Mohamed Ali Square (El-Mansheya)

14. How do you describe Ahmed Orabi Square from your previous visits

	Yes	No	Neutral
Attractive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Active	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relaxing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Simple	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Familiar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motivating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pleasing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Iconic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inviting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Usable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clean	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Ahmed Orabi Square (El-Mansheya)

15. How do you describe Sa'ed Zaghloul Square from your previous visits

	Yes	No	Neutral
Attractive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Active	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relaxing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Simple	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Familiar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motivating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pleasing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Iconic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inviting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Usable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clean	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Sa'ed Zaghloul Square

16. How do you describe El-Khaldin Garden from your previous visits

	Yes	No	Neutral
Attractive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Active	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relaxing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Simple	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Familiar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motivating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pleasing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Iconic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inviting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Usable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clean	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



El-Khaldin Garden

17. How do you describe Abu-El-Abbas Square from your previous visits or the image

	Yes	No	Neutral
Attractive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Active	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relaxing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Simple	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Familiar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motivating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pleasing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Iconic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inviting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Usable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clean	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Abu-El-Abbas Square

18. Please select the most important qualities which prevent your presence in the selected public spaces

- ☐ 1. Lack or poor quality of the natural and artificial landscape in space (Green space, sculpture, fountain... etc)
- ☐ 2. Lack of availability of entertainment around/near the space (cinemas, theatres, cafes, restaurants, shops... etc)
- ☐ 3. Not having a feeling that you are attached to the space
- ☐ 4. Unsuitable space and elements to create social space
- ☐ 5. Unsuitable and poor quality seating areas
- ☐ 6. Low probability of forming social relationships and contacts
- ☐ 7. Space invisibility and lacking of feeling safe
- ☐ 8. Lack of various activities in the public space
- ☐ 9. Absence of people in the space (empty)
- ☐ 10. Absence of different gender and age groups

Section 3: Functional Aspects

19. Do you consider the square located in a popular central location within the city ?

(Functional Contextual Aspect)

	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree
El-Mansheya Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sa'ed Zaghloul Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
El-Khaldin Garden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Abu-El-Abbas Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

20. Do you consider the square as a meeting point (destination) or passing by node?

(Functional Contextual Aspect)

	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree
El-Mansheya Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sa'ed Zaghloul Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
El-Khaldin Garden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Abu-El-Abbas Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

21. Is the square freely accessible to pedestrians from all direction?

(Functional Contextual Aspect)

	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree
El-Mansheya Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sa'ed Zaghloul Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
El-Khaldin Garden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Abu-El-Abbas Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

22. Do you consider the square unique?

(Functional Morphological Aspect)

	Yes	No
El-Mansheya Square	<input type="radio"/>	<input type="radio"/>
Sa'ed Zaghloul Square	<input type="radio"/>	<input type="radio"/>
El-Khaldin Garden	<input type="radio"/>	<input type="radio"/>
Abou-El-Abbas Square	<input type="radio"/>	<input type="radio"/>

23. (If YES) Reasons of the uniqueness of the space

1	2	3	4	5
Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree

Please select the answer for each square in the 3 columns as it refers to the table above

	It is a large square					It has a nice view					Located by the sea				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
El-Mansheya Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sa'ed Zaghloul Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
El-Khaldin Garden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Abu-El-Abbas Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

24. Do you consider the square easily remembered?

(Functional Morphological Aspect)

	Yes	No
El-Mansheya Square	<input type="radio"/>	<input type="radio"/>
Sa'ed Zaghloul Square	<input type="radio"/>	<input type="radio"/>
El-Khaldin Garden	<input type="radio"/>	<input type="radio"/>
Abou-El-Abbas Square	<input type="radio"/>	<input type="radio"/>

25. (If YES) Reasons of ease of remembrance

1	2	3	4	5
Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree

Please select the answer for each square in the 3 columns as it refers to the table above

	Is related to Alexandria's Cosmopolitan History					Is related to political History and events					Has a religious building (Mosque/Church/ Temple/shrine)				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
El-Mansheya Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sa'ed Zaghloul Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
El-Khaldin Garden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Abu-El-Abbas Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

26. Does the square have distinct features?

(Functional Morphological Aspect)

	Yes	No
El-Mansheya Square	<input type="radio"/>	<input type="radio"/>
Sa'ed Zaghloul Square	<input type="radio"/>	<input type="radio"/>
El-Khaldin Garden	<input type="radio"/>	<input type="radio"/>
Abou-El-Abbas Square	<input type="radio"/>	<input type="radio"/>

27. (If YES) Reasons for distinction

1	2	3	4	5
Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree

Please select the answer for each square in the 3 columns as it refers to the table above

	Architectural style					Statue/Fountain/Street furniture					View/Green area/Trees				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
El-Mansheya Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sa'ed Zaghloul Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
El-Khaldin Garden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Abu-El-Abbas Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section 4: Social Aspects

28. Do you consider the square supporting (necessary /optional /social) activities?

	Yes	No
El-Mansheya Square	<input type="radio"/>	<input type="radio"/>
Sa'ed Zaghloul Square	<input type="radio"/>	<input type="radio"/>
El-Khaldin Garden	<input type="radio"/>	<input type="radio"/>
Abou-El-Abbas Square	<input type="radio"/>	<input type="radio"/>

29. (If YES) What kind of activities does the square support?

1	2	3	4	5
Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree

Please select the answer for each square in the 3 columns as it refers to the table above

	Necessary activities (Shopping / Going to school / Going to work)					Optional activities (Taking a walk / Sitting / Relaxing)					(Greetings / Conversations / Children playing)				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
El-Mansheya Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sa'ed Zaghloul Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
El-Khaldin Garden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Abu-El-Abbas Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

30. Is the square socially active?

	Yes	No
El-Mansheya Square	<input type="radio"/>	<input type="radio"/>
Sa'ed Zaghloul Square	<input type="radio"/>	<input type="radio"/>
El-Khaldin Garden	<input type="radio"/>	<input type="radio"/>
Abou-El-Abbas Square	<input type="radio"/>	<input type="radio"/>

31. (If YES) Reasons of your choices

	Political activities			Religious activities			Cultural activities		
	Yes	No	Don't know	Yes	No	Don't know	Yes	No	Don't know
El-Mansheya Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sa'ed Zaghloul Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
El-Khaldin Garden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Abu-El-Abbas Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

32. The following is a number of qualities that characterise each space being safe, connected, pleasing and accessible

Please select against the qualities that you believe relevant to each space

	As safe (Day/Night)			Connected to other spaces			Pleasant			Accessible anytime		
	Yes	No	Don't know	Yes	No	Don't know	Yes	No	Don't know	Yes	No	Don't know
El-Mansheya Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sa'ed Zaghloul Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
El-Khaldin Garden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Abu-El-Abbas Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section 5: **Perceptual Aspects****33. Does any building around/near the square host a symbolic function?**

	Yes	No
El-Mansheya Square	<input type="radio"/>	<input type="radio"/>
Sa'ed Zaghloul Square	<input type="radio"/>	<input type="radio"/>
El-Khaldin Garden	<input type="radio"/>	<input type="radio"/>
Abou-El-Abbas Square	<input type="radio"/>	<input type="radio"/>

34. (If YES) Reasons of symbolic function(s)

	Religious building (Mosque, Church, Temple, shrine)			National administrative buildings (Courts, governmental buildings etc)			International administrative buildings (consulates, Embassy, etc)		
	Yes	No	Don't know	Yes	No	Don't know	Yes	No	Don't know
El-Mansheya Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sa'ed Zaghloul Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
El-Khaldin Garden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Abu-El-Abbas Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

35. Does the square associate with a historic notable event or person?

	Yes	No
El-Mansheya Square	<input type="radio"/>	<input type="radio"/>
Sa'ed Zaghloul Square	<input type="radio"/>	<input type="radio"/>
El-Khaldin Garden	<input type="radio"/>	<input type="radio"/>
Abou-El-Abbas Square	<input type="radio"/>	<input type="radio"/>

36. (If YES) Reasons of your choices

	Events (Revolution, national victory or independence, Royal wedding)			Person (History, speech, visit, act)		
	Yes	No	Don't know	Yes	No	Don't know
El-Mansheya Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sa'ed Zaghloul Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
El-Khaldin Garden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Abu-El-Abbas Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

37. Does the square have any historic preserved landscape elements?

	Yes	No
El-Mansheya Square	<input type="radio"/>	<input type="radio"/>
Sa'ed Zaghloul Square	<input type="radio"/>	<input type="radio"/>
El-Khaldin Garden	<input type="radio"/>	<input type="radio"/>
Abou-El-Abbas Square	<input type="radio"/>	<input type="radio"/>

38. (If YES) Reasons of your choices

	Fountain			Art work (sculpture, memorial)			Street furniture		
	Yes	No	Don't know	Yes	No	Don't know	Yes	No	Don't know
El-Mansheya Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sa'ed Zaghloul Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
El-Khaldin Garden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Abu-El-Abbas Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**We thank you for your time spent taking this survey.
Your response has been recorded.**

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Arabic Version

27/02/2018

Qualtrics Survey Software

DEPARTMENT OF ARCHITECTURE



العربية ▼

Introduction

التحولات و التغييرات في الاماكن العامة بموانئ البحر الابيض المتوسط: الميناء الشرقي بمدينة الإسكندرية المقدمة:

اسمي اسيرة ناجي السلاوي، أعمل كمحاضر مساعد بقسم العمارة بالأكاديمية العربية للعلوم والتكنولوجيا والنقل البحري، الإسكندرية (مصر)، و حاليا، ادرس للدرجة الدكتوراه في جامعة ستر الكلاید، جلاسكو، اسكتلندا بالمملكة المتحدة حيث أقيم و ادرس حاليا.

و قد تم تصميم استبيان كجزء من بحث رسالة الدكتوراه لاستيضاح و تقييم و تحديد العوامل المؤثرة (وظيفياً و اجتماعياً و إدراكياً) على رواد الميادين والساحات العامة المطلة على البحر بالميناء الشرقي بالإسكندرية، و سوف يتم بث هذا الاستبيان من خلال الإنترنت باللغتين الإنجليزية و العربية بواسطة الباحث.

ما هو الغرض من هذا الإستطلاع؟

الغرض من هذا الإستطلاع هو تحديد أهم العوامل فيما يتعلق بالاماكن/الساحات و الميادين العامة الحضرية المنحوتة و المطلة على البحر للميناء الشرقي بالإسكندرية، و يهدف هذا البحث على مساعدة المصممين والمعماريين و المسؤولين عن اتخاذ القرار في المناطق الحضرية على احتياجات مستخدمي هذه الاماكن، ودراسة العلاقة بين الناس وبيئاتهم الحضرية.

هل تود في المشاركة؟

أنت مدعو للإجابة على هذا الاستبيان إذا كنت فقط تشعر بالإرتياح، إنه قرارك الشخصي للمشاركة في هذا الاستبيان. جميع البيانات التي سوف تقدمونها ستكون مؤمنة و سوف تستخدم فقط للتحليل الإحصائي لغرض هذا البحث. علماً بأن مشاركتكم غير ملزمة، غير أننا نأمل بلوفيركم جزء من وقتكم للرد على هذا الاستبيان، كما يمكنكم التوقف عن الاستمرار في هذا الاستبيان في أي مرحلة.

و نؤكد لكم على أن بيانات هذا الاستبيان مؤمنة تماماً.

ما الذي ستقوم به في هذا المشروع ؟

مشاركتكم في هذه الدراسة طوعية تماماً و اجابتكم على الاستبيان ستكون أقرب إلى واقع هذه الاماكن العامة الحضرية المطلة على البحر للميناء الشرقي بالإسكندرية.

(١) ميدان المنشية (ميدان محمد علي و ميدان أحمد عرابي)، (٢) ميدان سعد زغلول، (٣) ميدان أبو العباس و (٤) حديقة الخالدس.

و سوف يستغرق استكمال هذا الاستبيان حوالي ١٢-١٤ دقيقة.

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لماذا تم دعوتكم للمشاركة؟

تم دعوتكم للمشاركة في هذا الاستبيان لأنكم:

- في المرحلة العمرية تبدأ من الـ 18 سنة فما فوق

- أنت تقيم بالإسكندرية لمدة سنة على الأقل

- تقوم باستخدام هذه الساحات و الميادين العامة المطلة على البحر في الميناء الشرقي لمدينة الإسكندرية (و التي تحولت و تغيرت عبر الزمن) لغرض بعض الأنشطة الضرورية أو اختيارية أو إجتماعية أو أي سبب آخر

ما هي المخاطر المحتملة لكم نتيجة لمشاركتكم في هذا الاستبيان؟

نؤكد لكم لا توجد مخاطر متعلقة بهذا الاستبيان، غير أنه، و كما هو الحال في استخدام الإنترنت تظل مخاطر الاختراق دائما محتملة، فبقدر ما تستطيع فإن إجاباتكم على هذه الدراسة ستبقى سرية للغاية. و سوف نقوم بالحذ من هذه المخاطر و ذلك بضمحل سرية هذا الاستبيان.

ماذا يحدث للمعلومات في المشروع؟

جميع البيانات التي سوف تقدمونها سوف تكون مؤمنة. سيتم استخدامها للتحليل الإحصائي لغرض هذا البحث.

جامعة سنتر الكلايد مسجلة لدى مكتب مفوض المعلومات الذي ينفذ قانون حماية البيانات لعام 1998. وستتم معالجة جميع البيانات الشخصية عن المشاركين وفقا لإحكام قانون حماية البيانات لعام 1998.

شكرا لكم على قراءة هذه المعلومات، و يسعدني الرد على أي أسئلة أو استفسارات لديكم.

ماذا يحدث بعد ذلك؟

شكرا لوقتكم لقراءة هذه المعلومات، إذا كنت على استعداد للمشاركة في هذا المشروع، سوف تشير إلى موافقتك على هذا النموذج.

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المعلومات الواردة من هذه الدراسة سيتم نشرها في رسالة دكتوراه، وكذلك نشرها من خلال وسائل أخرى، مثل الأوراق البحثية و المؤتمرات و المحاضرات العلمية و ذلك بعد الانتهاء من هذا المشروع.

بيانات إتصال الباحث

أميرة السعلاوي

باحثة/طالبة دكتوراه

Department of Architecture, University of Strathclyde

قسم الهندسة المعمارية، جامعة ستراثكلاید

تليفون: +44 (0) 777 0694 799

E-mail: amira-nagy-mahmoud-elsemellawy@strath.ac.uk

a.elsemellawy@gmail.com



موافق

Default Question Block

القسم 1: يرجى اتخاذ بضع الدقائق للرد على بعض الأسئلة الأساسية. وكما ذكر، فإن الاستبيان مؤمن تماماً ولا يمكن التعرف على المشاركين في الاستبيان.

نوع الجنس؟



ذكر



انثى

من أى فئة عمرية تنتمي؟



١٨



٢٥-١٩



٣٥-٢٦



٤٥-٣٦



٥٥-٤٦



٥٥+

مدينة المنشأ / الخلفية

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☐

الإسكندرية

☐

القاهرة

☐

محافظات قريبة من الإسكندرية

☐

محافظات قريبة من القاهرة

☐

أخرى

☐

أجنبي

أي من الآتي يوصف وضعكم الوظيفي؟

☐

طالب

☐

موظف (حكومي)

☐

موظف (قطاع خاص)

☐

عامل لحسابك الخاص

☐

بدون عمل/عاطل

☐

متقاعد

Visual Preference

القسم 2: التفضيل المرئي

اختر المناطق الحضرية (المياطين) التي تحبها أكثر في ترتيب

الأكثر ١ ٢ ٣ ٤ ٥ الأقل

5

4

3

2

1

☐☐☐☐☐

حديقة الخالدين

☐☐☐☐☐

ميدان سعد زغلول

☐☐☐☐☐

ميدان محمد علي (ميدان المنشية)

☐☐☐☐☐

ميدان أحمد عرابي (ميدان المنشية)

☐☐☐☐☐

ميدان أبو العباس

يرجى توضيح الأسباب التي تجعل {q://QID7/ChoiceGroup/ChoiceWithLowestValue}\$ الأكثر إعجاباً

و {q://QID7/ChoiceGroup/ChoiceWithHighestValue}\$ الأقل و آخر اختيارك؟

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اختر 3 ميادين تعتقد أنها تمثل مدينة الإسكندرية

- ☐ حديقة الخالدين
☐ ميدان سعد زغلول
☐ ميدان محمد علي (ميدان المنشية)
☐ ميدان أحمد عرابي (ميدان المنشية)
☐ ميدان أبو العباس

يرجى شرح أسباب اختيارك {q://QID8/ChoiceGroup/SelectedChoices}

اختر 3 ميادين الأكثر تردداً عليها لأسباب متنوعة

- ☐ حديقة الخالدين
☐ ميدان سعد زغلول
☐ ميدان محمد علي (ميدان المنشية)
☐ ميدان أحمد عرابي (ميدان المنشية)
☐ ميدان أبو العباس

حدد الأغراض و أسباب تردك على هذه الميادين

حديقة الخالدين	ميدان سعد زغلول	ميدان المنشية	ميدان أبو العباس	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	تسوق
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	عمل
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	أغراض إدارية
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	وقت الفراغ والاسترخاء
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	أغراض ترفيهية
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	حضور مناسبة عامة/ احتفال / حدث
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	اجتماع بالأصدقاء / أغراض اجتماعية
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	أحداث/مشاركة دينية

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اختر 3 ميادين مررت بها أكثر من غيرها

☐
☐
☐
☐
☐

حديقة الخالدين

ميدان سعد زغلول

ميدان محمد علي (ميدان المنشية)

ميدان أحمد عرابي (ميدان المنشية)

ميدان أبو العباس

يرجى توضيح أسباب إختيارك

وفيما يلي مجموعة من الصفات التي تصف الأماكن/ ساحات/ ميادين ، يرجى تحديد الصفات التي تصف كل ساحة/ميدان.

يرجى الاختيار مقابل الصفات التي تعتقد أنها ذات صلة بكل ساحة/ميدان من Q13 إلى Q17

كيف تصف ميدان محمد علي (المنشية) من زيارتك السابقة؟



يرجى التحديد ب (نعم أو لا أو محايد) لكل صفة

محايد

لا

نعم

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محايد	لا	نعم	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	جذاب
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	نشط
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	مريح
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	بسيط
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	معروف / مألوف
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	مشوق/محفز
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	سار / ممتع
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	رمزي/من المعالم المعروفة
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	مرحب
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	صالح للاستعمال
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	نظيف

كيف تصف ميدان أحمد عرابي (المنشية) من زيارتكم السابقة؟



يرجى التحديد بـ (نعم أو لا أو محايد) لكل صفة

محايد	لا	نعم	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	جذاب
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	نشط
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	مريح
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	بسيط
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	معروف / مألوف

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محايد

لا

نعم

☐☐☐

مشوق / محفز

☐☐☐

مسل / ممتع

☐☐☐

رمزي / من المعالم المعروفة

☐☐☐

مرحب

☐☐☐

صالح للإستعمال

☐☐☐

نظيف

كيف تصنف ميدان سعد زغلول من زيارتكم السابقة؟



يرجى التحديد ب (نعم أو لا أو محايد) لكل صفة

محايد

لا

نعم

☐☐☐

جذاب

☐☐☐

نشط

☐☐☐

مريح

☐☐☐

بسيط

☐☐☐

معروف / مألوف

☐☐☐

مشوق / محفز

☐☐☐

مسل / ممتع

☐☐☐

رمزي / من المعالم المعروفة

☐☐☐

مرحب

☐☐☐

صالح للإستعمال

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محايد

لا

نعم

نظيف



كيف تصف حديقة الخالدين من زيارتكم السابقة؟



يرجى التحديد بـ (نعم أو لا أو محايد) لكل صفة

محايد

لا

نعم

جذاب

نشط

مريح

بسيط

معروف / مألوف

مشوق / محفز

ساز / ممتع

رمزي / من المعالم المعروفة

مرحب

صالح للاستعمال

نظيف



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كيف تصف ميدان أبو العباس من زيارتك السابقة؟



يرجى التحديد بـ (نعم أو لا أو محايد) لكل صفة

محايد	لا	نعم	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	جذاب
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ناشط
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	مريح
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	بسيط
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	معروف / مألوف
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	مشوق/محفز
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ساز / ممتع
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	رمزي/من المعالم المعروفة
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	مرحب
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	صالح للإستعمال
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	نظيف

يرجى تحديد سببين على الأقل تمنع وجودك في الأماكن / ساحات / ميادين العامة المحددة بالاستبيان

- ☐ 1. عدم أو سوء نوعية المناظر الطبيعية والاصطناعية في الساحة (المساحات الخضراء، والنحت، ونافورة وبناء ملحوظا ... الخ)
- ☐ 2. عدم توفر وسائل ترفيهية حول أو بجانب الساحة (نور السينما والمسارح والمقاهي والمطاعم والمحلات التجارية ... الخ)
- ☐ 3. عدم وجود شعور بانك متعلق بالمكان/عدم وجود ارتباط للمكان
- ☐ 4. عدم وجود مساحة و عناصر مناسبة لخلق مكان أو حيز اجتماعي

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☐
☐
☐
☐
☐
☐

5. مناطق الجلوس بيئة الجودة وغير مناسبة
6. ضعف احتمالية تشكيل علاقات و تواصل إجتماعي
7. المكان محجوب الرؤية و عدم الشعور بالأمان
- 8- عدم وجود أنشطة مختلفة في الحيز العام
9. غياب الأشخاص في الحيز (فارغ / غير مزدحم)
- 10 - غياب فئة من الجنسين أو فئة عمرية من السن

Functional Aspects

القسم 3: الجوانب الوظيفية

(المساقفة و المورفولوجية)

هل يعتبر الميدان في موقع مركزي متميز أو شهير في المدينة؟

(الجانب السفلي اليميني)

موافق بشدة	أوافق إلى حد ما	لا أوافق ولا أرفض	غير موافق إلى حد ما	لا أوافق بشدة	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ميدان المنشية
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ميدان سعد زغلول
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	حديقة الخالدين
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ميدان أبو العباس

هل يعتبر الميدان نقطة إلتقاء (مكان الوصول) أو منطقة عبور؟

(الجانب السفلي اليميني)

موافق بشدة	أوافق إلى حد ما	لا أوافق ولا أرفض	غير موافق إلى حد ما	لا أوافق بشدة	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ميدان المنشية
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ميدان سعد زغلول
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	حديقة الخالدين
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ميدان أبو العباس

هل من السهل الوصول إلى الميدان سيراً على الأقدام من جميع الاتجاهات؟

(الجانب السفلي اليميني)

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لا أوافق بشدة	غير موافق إلى حد ما	لا أوافق ولا أرفض	أوافق إلى حد ما	موافق بشدة	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ميدان المنشية
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ميدان سعد زغلول
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	حديقة الخالدين
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ميدان أبو العباس

هل يعتبر الميدان فريد من نوعه / مميز؟

لا	نعم	
<input type="radio"/>	<input type="radio"/>	ميدان المنشية
<input type="radio"/>	<input type="radio"/>	ميدان سعد زغلول
<input type="radio"/>	<input type="radio"/>	حديقة الخالدين
<input type="radio"/>	<input type="radio"/>	ميدان أبو العباس

(إذا كانت الإجابة بنعم) أذكر أسباب التميز

(الجانب الشرفولوجي الوظيفي)

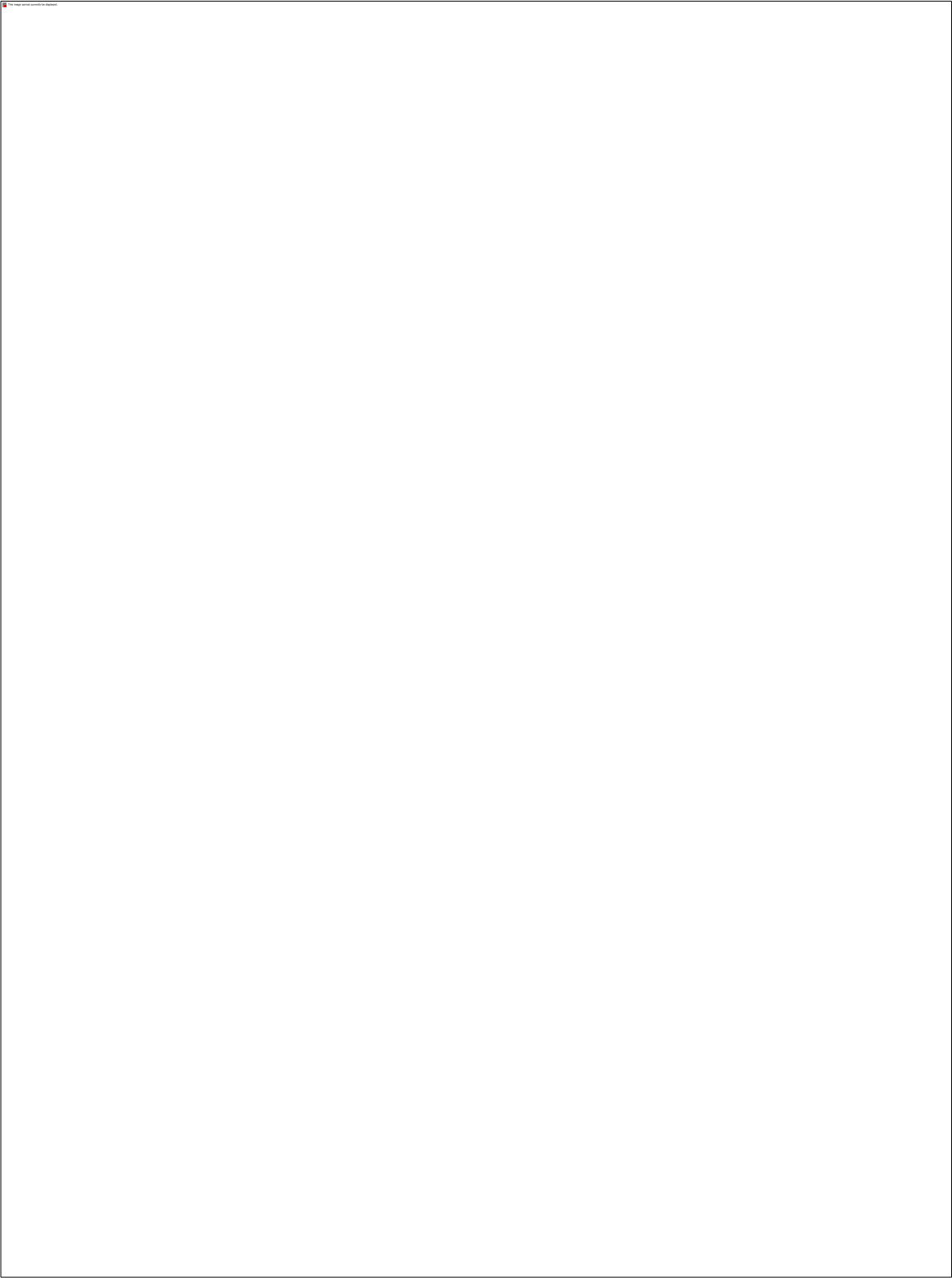
يرجى إختيار الاجابة لكل ميدان في ال-4 أعمدة كما يشير الجدول

5	4	3	2	1
لا أوافق بشدة	لا أوافق إلى حد ما	لا أوافق ولا أرفض	أوافق إلى حد ما	موافق بشدة

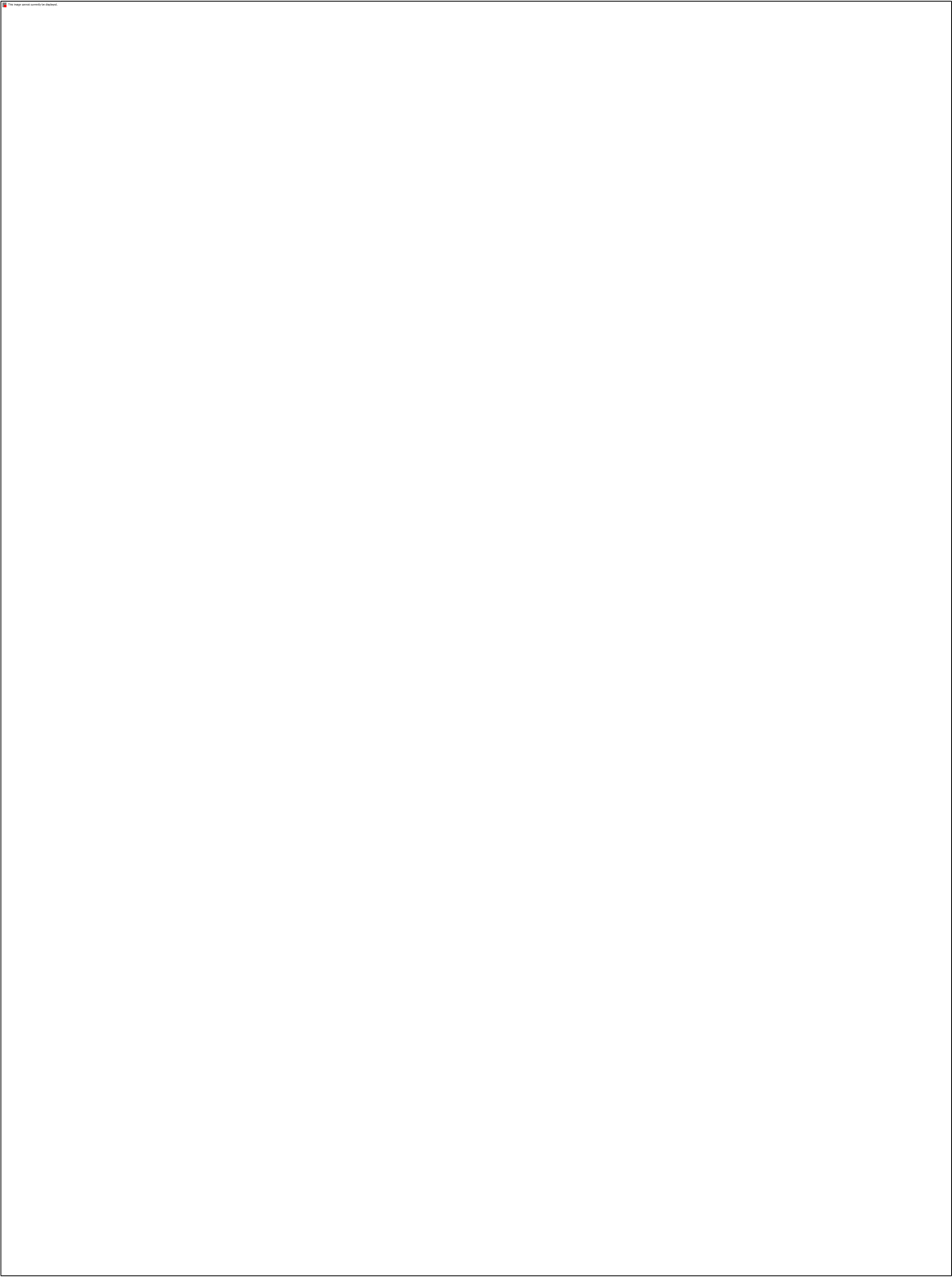
لأنه واحد من أقدم الميادين / الساحات	لأنه يقع و يطل على البحر	لأنه يحتوي على منظر جميل (طبيعي أو صناعي)	لأنه ضخم المساحة / ميدان كبير	
5 4 3 2 1	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1	
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	« ميدان المنشية
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	« ميدان سعد زغلول
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	« حديقة الخالدين
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	« ميدان أبو العباس

هل يعتبر الميدان من السهل تذكره؟

لا	نعم	
<input type="radio"/>	<input type="radio"/>	ميدان المنشية
<input type="radio"/>	<input type="radio"/>	ميدان سعد زغلول
<input type="radio"/>	<input type="radio"/>	حديقة الخالدين









27/02/2018

Qualtrics Survey Software

شخص (تاريخ، خطاب، زيارة، واقعة)	أحداث (ثورة، نصر وطني أو استقلال، زفاف ملكي)			
	لا أعرف	لا	نعم	
« ميدان سعد زغلول	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
« حديقة الخالدين	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
« ميدان أبو العباس	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

هل يحتوي الميدان على عناصر تاريخية محفوظة؟ (نافورة، تمثال، تحت، تأسيس الشارع)

لا	نعم	
<input type="radio"/>	<input type="radio"/>	ميدان المنشية
<input type="radio"/>	<input type="radio"/>	ميدان سعد زغلول
<input type="radio"/>	<input type="radio"/>	حديقة الخالدين
<input type="radio"/>	<input type="radio"/>	ميدان أبو العباس

(إذا كانت الإجابة بنعم) أسباب اختيارك

تأسيس الشوارع (أعمدة إنارة، كرسي، أرصفة، أشجار، مستلزمات النظافة، وسائل مكافحة الحريق، إلخ...)	عمل الفني (تمثال، تحت، نصب تذكاري)			نافورة			
	لا أعرف	لا	نعم	لا أعرف	لا	نعم	
« ميدان المنشية	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
« ميدان سعد زغلول	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
« حديقة الخالدين	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
« ميدان أبو العباس	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

تحت رعاية Qualtrics

14.Ethical Approval (Appendix F)

