The Planning and Urban Design of Liveable Public Open Spaces in Oman: Case Study of Muscat

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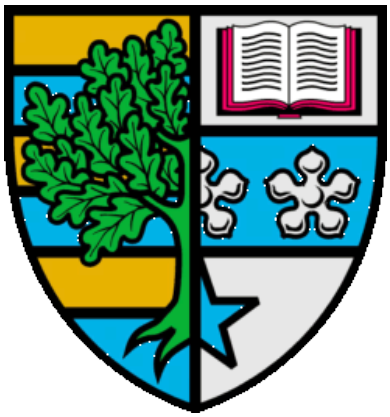

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بِسْمِ اللَّهِ الرَّحْمَٰنِ الرَّحِيمِ

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

To the ones who I love more than myself, my beloved daughters Shahad and Fajr, I respectfully dedicate this work. You have made me stronger, better and more fulfilled than I could have ever imagined. Thanks for making my life wonderful.

Abstract

Public open space has performed a considerable role in society since the first human settlements. Since the 1960s the understanding of liveable public open space has grown dramatically as exhibiting good quality and being well-used by the public. There is evidence of the social, economic and environmental benefits of public open spaces in any city. Planning and urban design practice are the mechanisms behind providing liveable public open space which entices and encourages the public to choose to spend more of their spare time in them. This thesis is concerned with liveability in contemporary public open spaces in Middle Eastern cities, where historically public open spaces were developed based on Islamic religion and Sharī'ah, which provided norms for the production of the built environment and social engagement with this. As a focus for the exploration of contemporary public open space in Middle Eastern cities, this study examines the design of squares and plazas in particular. Squares and plazas were introduced by colonisation and reinforced by modernity, being later emphasised by globalisation. Nevertheless, squares and plazas in the Middle East have not been as successful as the traditional local open spaces, nor as the Western versions. This research has attempted to evaluate the liveability in public open spaces in Muscat through detailed case studies of two squares and two plazas in three ways, including evaluating: the physical quality, users' perception and professional perception. In order to achieve this, a mixed methods strategy was designed based on the theoretical perspective of social constructionism. These methods included: desk-top study of documents; three built environment assessment tools, applied by professionals; behavioural mapping and observation; a survey of open space users; and semi-structured interviews with professional involved in the provision of public open space and community representatives in Oman. The empirical work showed that though public open spaces are viewed as beautification elements of the city structure, there are major weaknesses in meeting users' requirements, engaging users and in considering local climate in those spaces. Although the planning and urban design system in Oman has been adopted from the West, it is not established adequately in different plan sequences and strategies to govern the provision process and control the quality of

the spaces; in addition, there is lack of clarity and coordination in institutional responsibilities over the provision and management of public open space. It is concluded that providing more liveable public open space in Oman would require improvements to the planning and urban design systems, as well as learning from traditional practice in the production and management of open space in the Middle East.

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First and foremost, all praise and thanks are due to Allah the mighty, the Lord of the universe, By His will, bounties and His mercy, the accomplishment of this work is made possible. He is the first to be acknowledged and my countless thanks will never be sufficient. May the choicest blessings and peace of Allah be upon his Prophet Muhammad, his family and companions.

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Glossary

Arabic	Translation (English)
Albrha	Public open space in front of a fort or castle
Bat'ha	Public open space.
Bazaar	Market.
Eltalaa	Seasonal market in public open space
Eid	Islamic festival
Falaj (single of aflaj)	An irrigation system is used in Oman, based on wells
Fina	Public open spaces within residential area.
Funduk, khan or han	A lodging building.
Habta	An open space associated with the commercial hub of the village or town used for bidding and auction, mainly for selling animals such as goats, sheep, cows and camels.
Hadith	Prophet Muhammad's specific words.
Hay	Neighbourhood or district.
Holhol	Child's first birthday party
Iftar	Breaking fast.
Imam	The person who leads prayers in a mosque and also used as a title of Muslim leaders
Jamia'a	Friday mosque.
Karankasho	15th Ramadahan eve celebration.
Madrsa (single of madaris)	School and also used for an educational open space was used daily for teaching.
Mahram (single of maharim)	An individual male who a Muslim woman is never permitted to marry because of their close blood relationship.
Majlis Al-Shura	Parliament Council based on Islamic law
Majan	Oman in the Sumerian era means 'Copper Mountain'

Masjid (single of masajid)	Mosque.
Maydan	The main open spaces at a city wide scale.
Mihrab	Niche to indicate the direction of Mecca.
Musalla	Large open space located just outside the city wall used as an area for prayer for the Islamic festival of Eid.
Rahbah	Public open space.
Ramadhan	The ninth month of the Islamic calendar that Muslims fast during daylight hours.
Sabil	Charitable drinking water fountain in public spaces.
Sadakah	Worshipping Allah by giving charity without that being made obligatory in Sharī‘ah.
Sahah	Public open space.
Sahan el jamia	Open space associate with the Friday mosque.
Sharī‘ah	Islamic law.
Sheikh (single of mashaikh)	Tribe leader
Sikah	Narrow street.
Sirh el masjid,	Open space associate with the mosque.
Souq	Market.
Sunnah	Prophet Muhammad’s specific words hadith, habits, practices and silent approvals, which he directly, or indirectly, directs Muslims to act upon, by mentioning the virtue of such an act.
Tarik Al-Muslimeen, tarik nafid, shari’a and nahj	The network of public thoroughfares had four interchangeable terms according to their function and usage.
Ulama	Muslim scholars.
Waqf	Charitable principle of setting aside the original property such as houses, shops, gardens, etc. and donating its benefits for the sake of Allah. The benefits are beneficial produce that comes from the original property, such as crops, rents, provision of

	shelter, etc.
Wekala	A large craft and commercial building within the market, which includes shops, workshops, warehouses and accommodation rooms.
Zamzam	Water well in Mecca exits since 2000 BC.
Zakat	Worshipping Allah by giving mandatory annual charity to those who are entitled to them, according to the guidelines prescribed in Sharīʻah.
Zuqqaq	The private third order thoroughfares.

Abbreviation

GCC	Gulf Cooperation Council
LDP	Local Development Plan
NPF	National Planning Framework
ONSS	Oman National Spatial Strategy
Os3	Open Space policy 3
SPP	Scottish Planning Policy

Chapter 1: Introduction

1.1 Research overview

'Public space has become an integral part of cities throughout history, so much so that without it, human settlements would be unimaginable' (Madanipour 2010 p.2).

Public open space is the heart of any city and it has played a substantial role in society. The health crisis in the 18th and 19th centuries had a major effect in encouraging European cities to provide good quality built environment. Later, Camillo Sitte (1889) raised interest in urban squares, plazas and streets in European cities (Levy 2008). Later, in the 20th century, planning concepts were developed in Europe and America such as the Garden City, followed by Le Corbusier's influential planning concepts which were adopted all over the world. Zoning and planning for traffic were some of the main planning theories from Le Corbusier. A major turning point in the understanding of the importance of open spaces was the publication of *The Death and Life of Great American Cities*, in 1961, by Jane Jacobs. This raised concerns about the quality of urban spaces such as squares and streets. Whyte (1980-1999) later established the first observational studies of people's social activities in public spaces in cities by assessing the interaction between public life and public space, including squares and plazas. Henceforth, the understanding of successful public space has grown dramatically, with this being characterised as exhibiting good quality and being well-used by the public. Successful public open spaces have to meet different perceptual, social, functional and visual criteria. Urban planning and design practice are the mechanisms behind providing liveable public open space which entices and encourages the public to choose to spend more of their spare time in it. A liveable space is an attractive and secure environment for people to live, work and play. Liveability refers to the environment from the perspective of the individual and also includes a subjective evaluation of the quality of the place. Liveable public spaces as are sociable places where different group of community in individual and in group can meet and festive Whyte (1980-1990), Shaftoe (2008) (Madanipour 2010a) and (Gehl, 2007-2010).

To gather and practise different activities have been the main purposes of public open space throughout history. Yet, social, economic environmental and political changes have affected the function of public open spaces. Researchers have developed different definitions of open space due to the differences in the researcher's approach, academic background and focus of inquiry which affect their understanding of public space. However, since the early 1960s, there is growing evidence of the environmental, economic and social benefits of public open spaces in cities.

'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' (Rogers, 2010 cited in: Gehl, 2010 p. ix).

Enhancing the physical quality in public open spaces helps to improve their liveability, thus affecting lifestyle and health conditions and contributing to conserving the built environment in the city. Different types of public open spaces have different character and make different contributions to the city. Also, different types of open space have emerged in different societies and cultures. For example, square and plaza are respectively originally English and Spanish terms for a type of space that used to have a similar understanding. Historically both were used as the main central public space of the city, mostly surrounded by buildings related to religious and lay authorities. Due to the expansion of the British and Spanish empires, the use of squares and plazas spread throughout their colonised areas. The term 'plaza' started to take on a different sense through its use by American developers in the 20th century to describe open spaces linked to commercial developments, thus developing a new contemporary concept of open space. From there the converted plaza concept was exported worldwide by the influential American culture. The difference between the two concepts (square and plaza) is vague in terms of their design, they are similar in their usage and in the contribution they make to the city. In the Middle East, public open spaces were provided by users to meet their requirements as a bottom-up process in the Islamic era. The Middle East is one of the regions where squares and plazas were introduced by colonisation

and reinforced by modernity, being later emphasised by globalisation. Nevertheless, squares and plazas in the Middle-East are not as successful as the traditional local open spaces, nor as much as the Western version.

Not only the type of public open space, but also the processes whereby this is produced have evolved in conjunction with changing socio-economic circumstances. Such processes have developed fast and radically over the last two centuries in response to industrialisation (and post-industrialisation), urbanisation and globalisation. Transforming production from craft-based methods to machines had developed an industrialisation movement in Europe between 1820 and 1870, this being supported by the establishment of the railway system. Planning in this period was mainly directed by the economic factors to provide developments around the factories and railways. The growth of manufacture rapidly raised the population in European cities as people moved to live in urban areas. Urbanisation is one of the main effects of the industrial revolution. Cities then became overcrowded and lacking sanitation, with increasing problems of accumulation of sewage, high rates of crime, desperate poverty and high rates of disease – as well as decreased access to open space.

The spread of cholera in Europe, which had respect for no one and caused Prince Albert's death in 1861, motivated the British government to deliver a set of planning acts to improve the quality of the physical environment (Broadbent 1990). This ranged from delivery of major infrastructure in the 19th century to provide sanitation, to increasing state involvement during the first half of the 20th century (in the UK and in the rest of Europe) in the provision of housing, improvement of conditions in inner cities and urban expansion. As part of this, the provision of public open space was manifested e.g. in the creation of public parks in the Victorian era, and the proposal of green belts around cities in the early 20th century. Later, in the post war period following World War II, planning in the West engaged with reconstruction addressing the damages cause by the war. From the 1950s onwards new economic targets were set linked to the concept of *'development'*, with European cities developing planning policies to support their economies in order to compete.

The planning systems that emerged in the West were also linked to the growth of the welfare system, attempting to provide services for all including housing, education, health and recreation including through provision of public open space. 1987 was a landmark in the development of the concept of sustainability, as formulated in 'Our Common Future' by the Bruntland Commission. This further contributed to the development of planning in the West as a comprehensive system with political, economic, environmental and social strategies. Through this process, the West has developed 'mature' planning and urban design systems which currently promote liveable public open spaces. Different European countries (and cities) have developed different planning systems according to their economic, environmental, social and political situation.

In many other parts of the world which in recent history have been subject to Western influence through colonisation, post-colonialism, westernisation and globalisation, planning systems have evolved very differently to the case of the West. Planning in the Middle East in the early Islamic era was ruled by Islamic law (Sharī'ah). This produced an emergent planning system and resulted in physically irregular cities. However, during the 20th century Middle-Eastern cities adopted the Western planning systems and urban design concepts. They also introduced the Western concept of public open space in their cities. The great economic boom in 1960s and 1970s in the Middle East has led to rapid urbanisation. This poses major challenges in implementing the adopted Western system and produces various weaknesses in Middle-Eastern cities, with the quality of public open space being one of the problems.

Muscat, the capital city of Oman, is an example of a city from the region where this phenomenon can be seen. The country has taken advantage of the discovery of oil and has become prosperous. Subsequently development has taken place in Muscat City on a vast scale, providing modern infrastructure and urban amenities to meet new lifestyle standards. The 23rd of July, 1970 is a milestone in Omani contemporary history as the Omani Modern Renaissance movement was established. On that day the Sultan Qaboos Bin Saeed became the ruler of the country and started to transform

it into a modern state. The country's name was changed from the *Sultanate of Muscat and Oman* to the *Sultanate of Oman.* In the 43 years since then Oman has launched a dramatically major development programme upgrading education and health services, providing modern infrastructure, and developing the country's natural resources. The vast development and transformation is visible in Muscat as it is the capital city and it represents the country internationally. As other Middle-Eastern countries, Oman has adopted Western planning and urban design concepts in order to catch up with modernity. Modernity has usually been understood as replacing old with new. Thus, most of the traditional public open spaces have disappeared from the city and instead new spaces have been introduced.

However, squares and plazas in Muscat are not well used, which raises concerns about the influence of planning and urban design in promoting liveable public spaces in Muscat. Different authorities are involved in providing contemporary public open spaces in Muscat. The planning system is still developing. Public open space is not yet looked at as a serious provision by providers. There is still no strategy for providing public open space in Muscat.

This research attempts to conduct the first in-depth study on the quality of public open spaces in Muscat. This thesis will be an opportunity to connect case studies from Muscat to the growing stream of studies on the qualities of liveable public open space and will enrich the material available for international comparisons.

1.2 Research focus

Public open spaces in Muscat have been a concern to the researcher for some time. This concern was developed through working as an architect in Muscat Municipality, the city council, which is in charge of providing public services to the city. Being part of the provision system for six years stimulated the researcher's interest to investigate the situation of public spaces. The opportunity of studying a master degree in Edinburgh was a great chance to develop a deep understanding of a system

that actively attempts to provide liveable public open spaces, as well as to gain close personal experience of well provided public spaces. The vast differences in use of squares and plazas between the West and Middle-Eastern cities has strongly motivated the researcher to investigate the embedded factors of such phenomenon.

Modern development in Muscat has replaced the traditional liveable open spaces with new contemporary not well used spaces including squares and plazas. There is a lack of studies on planning and urban design in general and on public open spaces specifically. Adding to that, the researcher's observation of the low usage of squares and plazas in Muscat motivated the researcher to investigate further in this field. The research hypothesis is that weakness in planning and urban design practice has promoted less liveable squares and plazas in Muscat. This appears to threaten the social life in the city and the future of public spaces. This points to questions about what really constitutes liveable public open spaces in a Middle Eastern context. How could planning and urban design processes deliver such places? What is preventing the Omani planning system from providing such places to the city?

1.3 Research aim and objectives

This research aims to evaluate the effectiveness of planning and urban design practices in promoting liveability in public open spaces in Muscat. The key research question is therefore: to what extent does the current planning and urban design approach in the Middle East provide liveable public open space, in particular in the case of Oman?

In order to meet the above aim and answer the key research question, the following research objectives and questions have been set:

Objective 1: To review the concept of liveable public open space and the planning and urban design systems underpinning its provision.

Research question 1.1: How has liveable public open space been conceptualised and analysed in international literature produced in the West?

Research question 1.2: How has liveable public open space been conceptualised and analysed in international literature produced in the Middle East context?

Research question 1.3: What planning and urban design approaches have developed around providing liveable public open space in the West?

Research question 1.4: What planning and urban design approaches have developed around providing liveable public open space in the Middle East?

Objective 2: To develop an analytical framework for liveable public open space from the Western and Middle-Eastern experience.

Research question 2.1: How can the concepts of liveable public open space be analysed in a Middle East context?

Objective 3: To examine the extent to which liveable public open space is being provided in the Middle East, in particular in Muscat, using the above analytical framework.

Research question 3.1: To what extent are the current public open spaces in Muscat liveable, from a professional's perspective?

Research question 3.2: To what extent are the current public open spaces in Muscat liveable, from a user's perspective?

Objective 4: To examine the effectiveness of planning and urban design practice in providing liveable public open space in Muscat through detailed case

studies of selected squares and plazas, applying the above analytical framework.

Research question 4.1: Why is public open space in the Middle East the way it is?

Research question 4.2: What is the process whereby public open space is provided in the Middle East?

Research question 4.3: What are the weaknesses in the planning and urban design to provide liveable public open space in the Middle East?

Objective 5: To draw lessons from the Omani case study and recommend guiding principles to enhance the existing and the future development of public open spaces in Middle-Eastern cities.

Research question 5.1: To what extent are conditions for liveable public open space specific to an area, eg. the Middle East?

Research question 5.2: What improvements can be made to the planning and urban design systems in Oman to achieve appropriate liveable public open space?

1.4 Research methodology

In response to the identified objectives of this research, a structured strategy was designed to fulfil these and answer the research questions. Research strategy is crucial to provide a wider orientation and procedure in delivering this social research. This study was guided by the theoretical perspective of social constructionism, which helped position the philosophy of this research and choose the relevant methodology. According to this theoretical perspective, reality cannot be described simply as objective or as subjective. The object cannot be isolated from the subject. Knowledge in this respect is not discovered, it is rather constructed. Such concepts have been

much debated topics in social research for quite a long time, and an in-depth explanation of the debate is provided in chapter four.

This study is social research on liveability of public open spaces. It assesses the planning and urban design influence in providing successful places in the particular context of a Middle Eastern city. The nature of this topic is therefore subjective as individuals have different opinions, but includes assessment of 'objects' or, in this case, spaces. Therefore, social constructivism is an appropriate theoretical perspective for this research, which is embedded in an interpretative theory of knowledge with subjectivism in the nature of understanding this knowledge.

A mixed qualitative and quantitative approach was used for data collection and analysis of this research. The selected methods were purely qualitative, or purely quantitative in nature, and some combined the two approaches together, but these were all interlaced to fulfil the thesis objectives. These included: literature review; urban design audit, urban design inventory and visual assessment of case study spaces in Muscat (thus giving individual perceptions of professionals); observation and behaviour mapping of the case study spaces (taking a more 'objective' approach); questionnaires administered to case study space users (thus providing a quantitative/qualitative assessment of user perceptions); document review and semi-structured interviews with professionals, community representatives and policy-makers (providing perceptions of the planning and urban design system).

This research explored the literature on the topic and provides an analytical framework to be used as a tool as foundation for the assessment methods. Two squares and two plazas were selected as case study spaces in Muscat. According to the thesis design, a range of different methods were applied systematically to the selected case study spaces. The selection of the case studies has helped develop an in-depth understanding of the phenomenon, and therefore these findings could potentially be generalised for Oman and the Middle East.

A detailed explanation of the methodology is specified in chapter four. A summary of the methods used to achieve each of the identified objectives is illustrated in table 1.1.

Research aim	To evaluate the effectiveness of planning and urban design practices in promoting liveability in public open spaces in Muscat.
Research question	To what extent does the current planning and urban design approach in the Middle East provide liveable public open space, in particular in the case of Oman?

Objectives	Research key questions	Methods	Chapters
Obj.1: To review the concept of liveable public open space and the planning and urban design systems underpinning its provision.	R.Q.1.1: How has liveable public open space been conceptualised and analysed in international literature produced in the West? R.Q.1.2: How has liveable public open space been conceptualised and analysed in international literature produced in the Middle East context? R.Q.1.3: What planning and urban design approaches have developed around providing liveable public open space in the West? R.Q.1.4: What planning and urban design approaches have developed around providing liveable public open space in the Middle East?	Literature review	Ch.2: Liveable Public Open Spaces in the West and the Middle East
Obj2: To develop an analytical framework for liveable public open space from the Western and Middle-Eastern experience.	R.Q.2.1. How can the concepts of liveable public open space be analysed in a Middle East context?		Ch.3: Research strategy
Obj3: To examine the extent to which liveable public open space is being provided in the Middle East, in particular in Muscat, using the above analytical framework.	R.Q.3.1: To what extent are the current public open spaces in Muscat liveable, from a professional's perspective?	Urban design audit, urban design inventory, visual assessment, observation and behaviour mapping	Ch5: Evaluating the product
	R.Q.3.2: To what extent are the current public open spaces in Muscat liveable, from a user's perspective?	Questionnaire	Ch.6: Users' perception
Obj.4: To examine the effectiveness of planning and urban design practice in providing liveable public open space in Muscat through detailed case studies of selected squares and plazas, applying the above analytical framework.	R.Q.4.1: Why is public open space in the Middle East the way it is? R.Q. 4.2: What is the process whereby public open space is provided in the Middle East? R.Q.4.3: What are the weaknesses in the planning and urban design to provide liveable public open space in the Middle East?	Reviewing documents	Ch4: Oman Profile
		Semi-structured interviews	Ch.7: Producers' perception.
Obj. 5: To draw lessons from the Omani case study and recommend guiding principles to enhance the existing and the future development of public open spaces in Middle-Eastern cities.	R.Q.5.1: To what extent are conditions for liveable public open space specific to an area, eg. the Middle East?		Ch.8: Discussion of Key Findings and Conclusions
	R.Q. 5.2: What improvements can be made to the planning and urban design systems in Oman to achieve appropriate liveable public open space?		Ch.9: Final Conclusions and Reflections

*In addition to these chapters, there is introduction in chapter one.

Table 1.1: Achieving objectives, used methods according to chapter

1.5 Thesis structure

The structure of this thesis reflects the sequence of objectives of the research. It starts with an introduction of the research: reviewing the literature on western experience on public open spaces; exploring the theories and principles related to urban design and planning practice; and generating a suitable methodology to meet the research objectives. Selected data collection techniques were utilized to address the research objectives. Three chapters in the main body of the thesis report the findings that are related to the objectives and these are followed by the discussion and conclusion chapters. The structure of the chapters is as follows:

Chapter one delivers a general overview of the research. This includes the background, problem justification, research focus exploring reasons behind undertaking such study, aim, objectives, broader theoretical framework and structure of the thesis.

Chapter two reviews relevant theories, concepts and approaches to create liveable public open spaces from the Western literature. Then the contemporary situation of public open spaces is reviewed in the region with a focus on Muscat. It also provides a review of literature about the transformation of public open space in the Middle-Eastern context. Later, it discusses the influence of planning and urban design practice in creating liveable public open spaces in the West focusing on the UK. Then, the provision process which involves planning and urban design in Muscat is described with in-depth review of public open space provision.

Chapter three has two main parts, starting by creating a theoretical framework based on the concept of providing liveable public open space: an analytical framework to use throughout the research is developed. Next the research approach and methodology is discussed, followed by a description of methods and each data collection technique that has been used in chapters 5,6 and 7 of this research.

Chapter four discusses the country profile and the context of Muscat as a case study from the Middle-East region. It then describes the process of selecting case studies of squares and plazas in Muscat.

Chapter five provides critical insight evaluation of the quality of urban design in the selected cases in providing good and liveable spaces. This chapter analyses data collected using a set of techniques to evaluate the physical built environment of the spaces including: urban design audit, urban design inventory and visual assessment. Then it assesses the relationship between the physical environment and the users by analysing data from observation and behaviour mapping techniques.

Chapter six is the last chapter of the empirical work and it discusses the users' perception of each of the case study space by analysing data from a questionnaire. It aims to investigate the extent of planning and urban design practice effectiveness in providing liveable squares and plazas from the users' perspective.

Chapter seven attempts to address objective number four of this thesis. It applies the analytical framework that was established in Chapter 3 to evaluate the production system of the case study spaces. It examines urban design and planning practice of producing these spaces by analysing data from the interviews with experts.

Chapter eight attempts to draw together all the main findings from the previous three chapters and summarise general findings on the effectiveness of the planning and urban design process in delivering good quality and liveable public open spaces in Muscat. It also addresses the key research questions of the research.

Chapter nine synthesises the conclusions and findings of this research. It also highlights the research limitations and makes recommendations for the enhancement of public open spaces and the planning system in Oman and Middle Eastern countries. Finally, it identifies opportunities for further research.

Chapter 2: Liveable Public Open Spaces in the West and the Middle East

2.1 Introduction

Throughout history, the primary function of public open space has been to enable people to gather to practice different activities. Social, economic, environmental and political development over time has continuously altered the design and function of open spaces. At present, in developed countries there is concern over the crucial role of public open space in enhancing the vitality and urban structure of cities. Provision of public open space does not simply refer to offering an open area within the built environment; it involves a sophisticated system of interconnected aspects, which require extraordinary consideration in the early stages of the planning and urban design process. Yet, awareness of the needs and role of public open space differs worldwide.

The present research is designed with the intention of concentrating on the product and processes informing the provision of liveable public open spaces. This chapter reviews and discusses the concept of liveable public open space and its provision in international literature in both Western and in the Middle Eastern contexts. It provides a definition, and illustrates the importance, conception and types of public open spaces as applied in both contexts. Later, it focuses on the influence of planning and the urban design process in providing liveable public open space in planning systems in the West and the Middle East. The principal focus of this review, squares and plazas, has been selected from a wide range of public open spaces. From the information provided in this chapter, an analytical framework for the evaluation of liveable public open spaces is drawn up in Chapter 3, which will later be used to assess the squares and plazas in Muscat.

2.2 The role of public open space in the West

A large and growing body of literature is investigating public open spaces. A great debate has arisen about how to define public space and the concepts associated with it; whether it is public or private, internal or external, restrictive or free, democratic and inclusive, or otherwise (Gehl & Matan 2009). Literally, open space is a spatial feature of the landscape and townscape structure, which also shapes the identity of the built environment (Scottish Government 2008). According to the Scottish Executive (2008) the expression *'open space'* includes any green-space of vegetated land or structure, water, path or geological feature, within and on the edges of settlements, and urban space consists of squares, market plazas, and other paved or hard landscaped areas with a civic function. Some spaces have both green and civic space features, but typically one form or the other predominates (Scottish Government 2008).

Public spaces are *'all areas that are open and accessible to all members of the public in a society, in principle though not necessarily in practice'* (Neal 2010 p.1). Usually public space also has political connotations, often representing the wealth and power of the city (Madanipour 1998). Public itself, is a Latin word meaning people, and indicating a relationship between society and the state (Madanipour 2010a). Miller (2007) defined public spaces as a *'kind of hybrid of physical spaces and public spheres'* based *'on the statement that physical space is significant to democratic public life'* (Miller 2007 p. xvi). She attempted to expand the discourse of public space to include the history and politics of spaces. However, according to political thinker Nancy Fraser, there is no *'public'*, rather there are *'multiple publics'* and therefore *'multiple public spheres*' (Fraser 1992: cited in Gehl et al 2009 p.107). In this sense *'public open place'* can be defined as any designed outdoor area, which public can access by right. Public open space refers also to open space, which is accessible to all, and/or controlled by the state on their behalf (Madanipour 2010a).

The appearance of public open spaces dates to the creation of the first urban areas, more than 6000 years ago. Since then, public open spaces have played an important role in the development of cities and society. Since sanitary improvements in Britain

in the 19th century, and the growing health concerns during the Modern era in European cities, awareness of the conditions in public spaces has dramatically increased (Gehl 2007). But public open space has also always had political meaning and represented the rule of the state – either through marching, parades, inclusion of statues of the elite – or seen the congregation of opponents challenging the state with protests and uprisings (Madanipour 1998).

In the early 1960s, planning concepts removed public life from the new Western cities districts and squeezed it out of streets and squares by allowing traffic and parking in older parts of the cities. A major turning point in the phenomenon of the gradual erosion of public spaces and public life was detailed in the publication *The Death and Life of Great American Cities*, in 1961, by Jane Jacobs (Gehl 2007). Since then, the 'Public Life oriented wave' in urban and urban planning studies has experienced great momentum over four decades (Gehl 1987, 2006, 2007). During this time, the understanding of the importance of open spaces has grown substantially, as more and more spaces were rendered liveable and became well-used by the public (Francis 2003). Recent studies show the substantial importance of public open spaces to any urban society, regardless of city size, economic situation, political or cultural structure (Madanipour 2010b). Social researchers and designers, such as William Whyte (1980, 1988,1990), Clare Cooper Marcus (1970, Francis 1990 and Barnes 1999), Kevin Lynch (1972,1981), Jan Gehl (1987, 1996), Lyn Lofland (1998), and others have stressed the considerable importance of thriving spaces in their writings, when referring to good public space (Francis 2003).

Recently, there have been increasing concerns regarding the significance and value of public space. The provision and the quality of public open space has climbed to the top of the political and policy agenda in developed countries (CABE Space 2004: cited in Carmona 2010a) and also in some developing countries (Zetter & Butina-Watson 2006: cited in Carmona 2010a). This was made clear by Tony Blair, the UK former Prime Minister, in his speech in April 2001, when he raised concerns about public space issues. His speech stressed the need for cleaner and safer spaces where communities can be given the opportunity to thrive, rather than just survive. This

increasing interest is a result of growing evidence of the importance of public spaces in improving of environmental, economic and social features (Woolley et al. 2004: cited in Carmona 2010a). A recent major study by Madanipour (2010a), of European, Asian, African and Latin American cities, found that despite the economic and cultural differences between them, they all place emphasis on good quality and well-used public open spaces. As mentioned in the introduction, the aim of this chapter is to provide extra focus that can be directed toward squares and plazas. Appendix A reviews the literature concerning definition, usage and concepts.

From the previous discussion, public open space is understood to be a crucial element in any city structure, as it has a threefold impact on social, economic and environmental qualities. The following subsections discuss the social, economic and environmental contributions of public open spaces in any city.

2.2.1 Social contribution

Cities today have a significantly reduced number of householders per address, and an increasing number of single adults and older residents in their dwellings. This has led to a greater allowance of additional square metres per capita for public spaces in cities. Lifestyle, living standards, working life, and economic contribution, have changed considerably over the last century. Free time has significantly increased, compared to one hundred or even fifty years ago. This new lifestyle has afforded much additional leisure time; in particular most people spend many years in school before working, many take early retirement, and holidays, weekends and days off are all common, contributing to the new concept of free time (Gehl 2007). However, despite the additional free time many have, meeting other people directly is no longer central to social life. Therefore, as social needs change, it is important to adapt public open spaces, to offer good-quality efficient and attractive features to encourage users.

Certainly, there has been a gradual shift in recent decades from industrial society's essential use of public space to optional use of public space, due to a more consumer

and leisure based society (Gehl & Matan 2009). In the past, the quality of public space was not an essential factor to consider in the usage of the streets, squares and plazas (Gehl 2007). However, now there is a need to emphasise provision of appropriate, well-designed places that will attract people to use them, relax, socialise, and spend time there as part of their urban lives (Gehl & Matan 2009). Life-space-building is a priority order when planning successful liveable open spaces, as Gehl concluded from studying historical Greek and Roman cities (Gehl 2010).

Well-managed and maintained public spaces provide opportunities for interaction between all groups in society (Scottish Government 2008). They also offer a sense of place and a source of community pride, which emphasises the public's sense of responsibility toward their local environment (Scottish Government 2008). A recent study by Francis et al. (2012) supported Conklin's (1971) and Rohe and Burby's (1988) major study of the connection between crime or fear of crime and lack of a sense of community (Francis et al. 2012). In their study they also found a strong relationship between high quality public open spaces and a developing and improving sense of community (Francis et al. 2012). There is evidence that a well-designed space can also reduce crime and the fear of crime (Scottish Government 2008).

There is a wealth of literature discussing the impact of open space including green landscape on people's physical, mental and spiritual health (Morris 2003). Public open spaces are important, as they offer people open-air recreation, relaxation, refreshment and the opportunity to practice health promoting activities such as walking, cycling, running, etc. (Morris 2003). Well-designed public space provides the potential for entire communities to practice active healthy lifestyles by providing sports and recreation places, which, also provide an opportunity for different groups to promote environmental awareness; i.e. local groups, schools and individuals (Scottish Government 2008). It is known that education has a significant effect on health related behaviour, and informs the long-term promotion of day-to-day activities. A broad range of studies have shown that people who exercise regularly

experience higher levels of educational attainment. The greater the educational attainment, the better the health of this individual (Thrane 2006).

2.2.2 Economic contribution

Economic factors have had a marked effect on the concept of public spaces, their quality and physical appearance. A well-designed and managed space offers great economic benefit. Based on evidence, good quality spaces can easily upgrade the commerce, retail and leisure developments, creating attractive investment potential for users and customers (Scottish Government 2008). This helps to support a flourishing lifestyle, improving investment and tourism, and eventually delivering economic prosperity (Scottish Government 2008).

Public open space has a fundamental effect on the development and overall growth of a city. Public open spaces affect the development of a city's spatial structure and its overall boundaries. Cities tend to evolve and expand around public spaces. People prefer to live near to public open spaces because they can affect features of the surrounding landscape (Wu & Plantinga 2003). However, Anderson & West's (2006) study shows that this effect was stronger in high-density urban areas, in contrast with suburban areas. According to Wu and Plantinga (2003), public open spaces apparently influence the development of spatial development and land pricing in two ways, first due to proximity to the city centre and through the provision of more amenities. In such cases, development, land prices and density level centre more around open space, decreasing as distance from the space grows (Wu & Plantinga 2003). The second way is when public space is close to a city's boundary, which causes land prices and density to rise dramatically.

Liveable open space not only offers options for recreation, pleasing views, or simply the absence of negative externalities associated with development. It is also has a fundamental impact on the value of adjoining real estate (Anderson & West 2006). A considerable amount of literature has been published on the significant effect of

proximity to an open space on real estate. Statistics demonstrate that selling prices increase as a property becomes closer to any type of open-space (Bolitzer & Netusil 2000). Lutzenhiser and Netusil (2001) examined the relationship between proximity to different types of open spaces and their impact on a home's sale price. They found that natural parks and speciality parks had the largest positive and statistically significant effect on sale price (Lutzenhiser & Netusil 2001). Tolliday (2001) further investigated the effect of open space on amenities' virtual prices. He concluded that it is not a straightforward calculation; value also depends on whether surrounding land uses are fixed or adjustable. Anderson and West's (2006) work demonstrates that the amenity value of neighbourhood parks is three times higher than those of amenities located away from a park, while amenities near to federal parks and natural areas are two-thirds higher in value than amenities located away from a park (Anderson & West 2006).

During the twentieth century, development took place in many European cities, such as Copenhagen, which served to improve the economic conditions in the city and its citizens' lifestyles. Copenhagen was the first European city to offer car-free space within the city centre. This allowed public activity to expand and also acted to support recreation and enjoyment at political and cultural events. Such phenomena required great care and attention be directed toward the quality of the built environment of the space, to host events. In his study, Gehl (2007) reviewed a series of major studies conducted in 1968, 1985, 1995 and 2005 in the Danish capital Copenhagen. He noted a clear shift in the public interest in terms of shifting use of public space from a work oriented to a leisure and enjoyment space. People answered questions regarding their reason for being in the city centre differently. *'Shopping'* was the main answer given in the very early study, whereas *'to be in the city'* was the predominant answer in the latest study. Gehl (2007) concluded from the Copenhagen studies that people were gradually expanding their time spent in the city and altering their use of public space. This highlights the city's transformation into a public destination. Gehl (2007) emphasised that people required an attractive quality environment and activities to choose from to fulfil their free time, also welcoming attention. In this sense, the quality of public space was a significant factor in

attracting people to choose to spend their spare time in the space. Several surveys illustrated considerable growth in public life, in public spaces in global cities from Canada to Japan. According to Gehl, both in the past and more recently, meeting other people is a key city function; he identified the evolution of a so-called *'Cappuccino Culture'* as a rationale for why many people spend more time in public spaces (Gehl 2007).

2.2.3 Environmental contribution

Public open space has environmental benefits, promoting biodiversity, allowing wildlife movement, controlling pollution, contributing to energy reduction and to manage water and drainage. There is great concern focused on the environmental quality of public open spaces in the Western cities, as stated by the European Environmental Agency (Gómez et al. 2013). Conserving and enhancing the natural environment and meeting global environmental challenges, such as climate change, flooding, pollution and costal changes are major planning targets outlined in the UK planning framework (Planning Framework 2012). Access to nature through open spaces is an important human need in any city (Thompson 2002). Open spaces in cities provide a good opportunity for societies to interact with nature. Baines (1999) and Dovey (2000) promote an ecological approach to public open spaces, especially parks (Thompson 2002). Ecological approaches view parks or green networks as wild spaces or *'loose-fit spaces'*, adding excitement to the experience of engaging with nature (Thompson 2002). Providing thermal comfort by considering the parameters of meteorological and micro-space, as proceeding from the surrounding built environment in urban spaces is a significant factor in encouraging users to visit the space (Gómez et al. 2013). A well-designed open space can encourage people to choose to travel safely by foot or bicycle (Scottish Government 2008).

2.3 Concepts of liveable public open spaces in the West

'.... Public spaces designed for people, that are healthy, lively, sustainable, safe and democratic public spaces, that provide a people friendly social realm, able to complement modern, consumer–private-orientated lifestyles.' (Gehl et al. 2009 p.109).

There has been an increasing amount of literature discussing liveable open space. The liveability of the built environment has been a worldwide concern in recent years (Shamsuddin, Hassan, & Bilyamin, 2012). The meaning of the term *'liveability'* is broad, and contingent both on the objects of measurement and the perspective of those making the measurements. Heylen (2006) states that the majority of researchers agree that liveability refers to the environment as perceived by the individual, and also includes a subjective evaluation of the quality of place/space (Shamsuddin et al. 2012). Liveability is also addressed by the EIU (2011), as one of factors that enhance living quality, by boosting lifestyle and health conditions and conserving the built environment in the city (Shamsuddin et al. 2012). Moreover, liveability enhances safety, promoting higher living standards and providing a good backdrop to economic activities, such as investment, tourism, education and many more. This in return brings the city a better reputation and more scope for economic activities. Liveable city has been defined by The Centres for Liveable Cities in Singapore (2011) as one that *'provides a vibrant, attractive and secure environment for people to live, work and play and encompasses good governance, a competitive economy, high quality of living and environmental sustainability'* (Shamsuddin et al. 2012 p.169). Liveable public spaces as are sociable places where different group of community in individual and in group can meet and festive Whyte (1980-1999), Shaftoe (2008) (Madanipour 2010a) and (Gehl 2007-2010).Indeed, this definition is the one that will be utilised in this research.

Although 'liveable' public open space is a rather new term, as a concept it has been implicit in discussions of *'good'* open space in Western literature for over four

decades. Indeed, this now uses the term liveability to refer to a good quality, well used and successful public open space. Researchers have developed diverse definitions of such public open spaces. Considerable differences arise due to the researcher's approach, academic background and focus of inquiry, affecting their understanding of public space (Gehl & Matan 2009). The different views and approach to liveable public open space vary from producing a better built environment, as proposed by Camillo Sitte in 1889 (Sitte 1965) (Collins 1986) and (Collins 1965); being aesthetically conscious as proposed by (Cullen 1971); to being socially motivated, as proposed by Lynch (1960), Jacobs (1961), Whyte (1980-1990), Gehl (1987- 2013), Miller (2007) and Madanipour (1996- 2010a). All the works mentioned acknowledge various facets of liveability in regard to public open space, such as healthy, sustainable, safe, walkability, space justice, user friendly, social realm, complementary of the modern, consumer–private-orientated lifestyles, etc.

Liveability is also considered to be a component of sustainability. A large volume of published studies discuss and define public open spaces according to sustainability. The term *'sustainability'* means meeting the needs of the present generation without compromising the ability of future generations to meet their own needs (Brundtland 1987). For the purposes of this research, the adopted meaning of sustainable open space is the ability to ensure that planning enhances sustainable environmental, social and economic activities taking place in public open space (British Local Agenda 21 1994).

Shaftoe (2008) argues that the debate led by Jane Jacobs, which ran from the 1960s and 1970s, related to a narrower technical negotiation, focused on physical sustainability, security, management and aesthetics. To him good open space arises when designers, planners and politicians produce appropriate and convivial public places (Gehl & Matan 2009). Shaftoe (2008) based his study of open spaces on data collected from small-scale open spaces, with primary concerns being the use of the space, the meaning of appropriate place and the criteria of good open spaces. Shaftoe (2008 p.5) defines liveable spaces as *'places where people can be sociable and*

festive', and sees these as *'the essence of urbanity'*, continuing, *'without good urban spaces, we are likely to drift into increasingly privatized and polarized society, with all its concomitant problems'* (Shaftoe 2008 p.5). However, the quality of urban space is influenced by practical place-making and the visual appearance of façades, which serve to influence its use (Gehl & Matan 2009). In the book *'Whose Public Place?'* Ali Madanipour summarised the difference between *'space'* and *'place'*. Space is a term denoting more abstract and impersonal meaning, while place denotes interpreted space, having meaning and value (Madanipour 2010a). He argues that since the publication of Jacobs' (1961) *'The death and life of Great American cities'*, all research (including his), has dealt with the transformation of spaces into places, using different lenses and from different angles.

A large and growing body of Western literature has investigated embedded concepts that are used to promote liveable public open space. *'Liveable'* open space is a new term as such, although as a concept it has been discussed since the 1960s as *'good'* open space. For Gehl (2010), liveable public open spaces are usable spaces that provide both stationary and mobile activities. They are well-used and sociable places, with a higher proportion of couples, people in groups, people meeting people, and those exchanging goodbyes (Whyte 1980). They can bring people together to share positive experience (Corbett 2004). Considering both the users' needs and the quality of urban design have been the main aspects considered when assessing the liveability of open spaces by researchers such as Jacobs (1961), Whyte (1980 and 1990), Carmona et al. (2004), Carmona (2010b), Madanipour (1996, 1998,2010a and 2010b), Shaftoe (2008), and Gehl (2007 a 2010 and 2013).

There are complex factors that affect public interaction in open spaces, such as religion, gender, class and ethnicity (Peters 2010). Designers alone cannot guarantee the production of liveable places (Gehl & Matan 2009). Miller conducted a study of the extended effect of users' perceptions of space on their use of three public spaces. She concluded that designers and planners are not attentive to the social, political and historic context of the places for which they are designing (Gehl & Matan 2009). According to her, providers' *'common sense'* definitions and ideas about public

spaces are *'so far from reality'* (Miller 2007). Shaftoe (2008) noted that designers often ignore non-visual elements, which are of essential importance, such as sounds, feelings, smells, textual qualities, movement (both the feeling of movement and the actual movement through a space), and the taste of a place (Gehl & Matan 2009). Nonphysical values, such as the legal, economic, political and aesthetic are often omitted from the provision of open spaces, due to concentration on physical and constructed features (Miller 2007). A public space requires more than the creation of physical entities, it also requires assemblages of ideas, actions, and environments values (Miller 2007).

Public open space liveability in this work assesses urban design from two perspectives: usability and quality. As explained earlier, researchers' points of view have been diverse in regard to evaluating public open spaces, due to the interdisciplinary nature of urban design (Moudon 2003). Therefore, measuring liveability of space has been achieved by examining social, economic and environmental dimensions. The social dimension analyses concepts relating to enhancing users' interactions with the space and with each other. The economic dimension evaluates concepts of recreational, enjoyment, management and maintenance. The environmental/physical dimension examines those principles that lead to the creation of attractive spaces.

2.3.1 Social dimension

Achieving a user-friendly space depends not only on a good technical designer or planner; it also relates to the physical configuration of the surrounding built environment, and a good understanding of potential users' requirements, behaviour, perspectives and interactions within the social context (Marshall 2008). Many urban design researchers, such as Jane Jacobs (1961) and Oscar Newman (1973), claim that the built environment could potentially encourage unwelcome behaviour in public spaces (Carmona 2010). Proceeding from this assertion, Alice Coleman (1985) found the reverse; i.e. that urban design can reduce anti-social behaviour, such as littering,

graffiti and vandalism. Anti-social behaviour accelerates degradation of the built environment and disadvantages the community (Carmona 2010).

User needs are defined relative to amenities and experiences that the public seeks when enjoying public open spaces (Francis 2003). User conflicts in public open spaces develop when user requirements are not met, or when there is a conflict between different user groups (Francis 2003). Social capital theory, begun by Bourdieu (1986), and continued by Dines and Cattell (2006), addressed fundamental conditions applicable to public open spaces, which enhance social interaction; including familiarity with spaces, regular use, and the availability of facilities to give purpose to a space and improve its social success (Peters 2010). Social interactions in public spaces demonstrate the extent to which individual users assimilate within public space (Peters 2010). The following subsections discuss concepts that ensure good quality social interaction to promote liveability in the space, including public place identity, place justice, the inclusiveness of public spaces, 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, provision for children and young people and different genders.

Public place identity

The effect of identity on developing places in space has been debated in the literature (Peters 2010). Place identity is required to provide users with a sense of belonging which is associated with the way the public use space and how such use contributes to social capital (Peters 2010). *'Whereas space is open and is seen as an abstract expanse, place is a particular part of that expanse which is endowed with meaning by people'* (Madanipour 1996 p.158). The identity of place refers to the experience of feeling rooted, belonging and grounded in regard to the meaning of a space (Neill 2004). However, place identities are shaped by everyday life activities and appear in spatial situations. Aitchison (2001) and Urry (2002) highlight that place identity is

most frequently associated with leisure behaviour in public places (Peters 2010). Moreover, identity is linked to memory (Neill 2004), and how place conserves identity based on design and long histories of use by the public (Stedman 2006 cited in: Peters 2010). Indeed places form their character according to the interaction between socially constructed perceptions, acquired through lived experiences of the individual and everyday (Peters 2010). Places with identity afford users with an opportunity to gather a perceptual meaning of a place's character. Lynch (1960) identifies three features used to create spatial quality, which are identity, structure and meaning (Lynch 1960). Identity is the quality of distinctive objects in the space, structure refers to the spatial relationship of each object and the observer, and meaning is the emotional and practical value developed by the observer (Lynch 1960). Spatial meaning is debated because it is perceived of as an interpretive and manufactured value. The urban environment espouses symbolic meaning and values (Carmona et al. 2003). Thus, providing a public open space with identity encourages the liveability of that space.

Place justice

A large and growing body of literature has investigated social justice debates and legal battles, with the aim of determining to what extent the law, barriers and aesthetics, or what are known as sensory experiences, constrain the way place is used and user type. Designers and planners must ensure that public space provides justice by designing for different groups of users (Marshall 2008). In the West it has been argued that a hybrid of actual physical places and active public spheres is essential to create public space that plays a role in democracy (Miller 2007). The link between public spaces and public spheres is composed of overlapping processes between physical places, the laws and regulations that govern them, the people who claim them according to their use or demands, and the government officials who answer those demands which have to be understood (Miller 2007). There is general agreement among western researchers regarding the considerable importance of democratic public spaces in providing liveability.

The inclusiveness of public spaces

Both Miller (2007) and Shaftoe (2008) note the inclusiveness of public spaces as core to their research arguments; however, Shaftoe's is a pragmatic approach, focused on creating inclusiveness by providing an appropriate and safe design (Gehl & Matan 2009). Shaftoe went to the extent of recommending that to achieve public space, inclusiveness should include *'grey'* or *'slack'* areas in which unwelcome activities can take place; i.e. areas mainly intended to service teenagers, homeless, street people, etc. Shaftoe emphasised that those groups wish to treated as other citizens – especially teenagers and youngsters – and require *'hang outs'* and 'gathering' places in order to ensure healthy socialisation. For him the design has to consider all groups within society and create places which are well suited to different types of uses and which are flexible for different users (Shaftoe 2008).

On the other hand, Miller (2007) viewed inclusiveness in relation to design approaches based on laws, ownership and the right to a place. She concluded that the intensive use of a space is not necessarily an essential indicator of a successful public space, in terms of democratic, inclusive or publicity (Gehl & Matan 2009). Furthermore, accessibility to all groups of society is crucial when designing a space to be public; the more accessible the space is the more public it becomes (Madanipour 2010a).

Interethnic interaction

Interethnic interaction seeks to encourage different subgroups of potential users of a space without causing disturbance to overall enjoyment (Marcus & Francis 1998). Heering and terBekke (2007) found, in their research in the Netherlands, that interethnic interaction in public spaces can potentially cause tensions among ethnic groups (Peters 2010). In any multi-ethnic society, religion can cause conflict. Researchers like Van Oudenhoven, et al (2008: cited in Peters 2010) claim that religion could have lesser effect in future as minorities gradually blend into society.

Nevertheless, other studies, such as that conducted by Dagevos and Gijsberts, (2007) regarding the behaviour of users' from different religions, illustrate that new generations of Muslims show more intensive dedication to Islam than previous generations (Peters 2010). Yet Peters (2010) reached a very positive conclusion in his research, observing that people from different ethnic groups appreciate sharing space with those from other groups in public (Peters 2010). However, toleration of interethnic interaction varies between different spaces. According to Shaftoe (2008), liveable public spaces are more than simply places for leisure and enjoyment: they are at the heart of democratic living, where human beings of all creeds and races can meet and learn to understand and tolerate each other.

User oriented spaces

The transforming nature and character of public open spaces is strongly related to changes in the nature and character of social life in their cities (Madanipour 2010a). Gehl (2007) states that there are many societal changes that limit life in public spaces, such as women's education and work, children spending longer in school, the childcare industry, cars, growth in mobility, development of technology to improve indirect communication (wireless network, radio, TV., computers, the internet, e-mails, video conference and new interactive electronic system) (Gehl 2007). The huge drive for production, i.e. the economic system, is based on changing society by fostering greater consumption and leisure activities. Public open spaces are no longer a fundamental part of the social fabric of the city as they once were; they are rather part of an impersonal fragment of the urban environment (Madanipour 2010b).

According to Gehl, society has redefined public rules. The individual private space has gradually grown, through the advent of cars, working from home, computers and washing machines. Although people have more free time and more metres per person of public space (as mentioned in section 2.2.1), meeting each other directly is no longer a crucial part of social life. This decline in use of public open spaces echoes the failure of social and spatial relationships (Madanipour 2010b). Society has

changed, and good quality public space that is liveable in is now a necessity (Gehl 2007).

There is a clear shift in the public's interest toward using public spaces for leisure and enjoyment (Gehl 2007). The changes in society are directly altering the nature of public space, altering it from meaningful to more instrumental used for specific purpose character (Madanipour 2010b). Recently people have required more attractive living environments, with a choice of activities to pursue in their free time. This certainly places stress on the transition from public space to public destinations (Gehl 2007). According to Madanipour (2010), good open spaces are ones which combine meanings and are instrumental in providing places with which people can identify and can use (Madanipour 2010b).

Life-space-building order

Location of public space, especially squares, is a crucial element of liveability (Corbett 2004). Planning needs to implement the concept of life-space-building in order to create city life in city urban spaces. According to Gehl (2010) this concept is an old one, which has unfortunately been reversed in the last 70 years. Public life has to be predictable to plan new urban areas or to enhance old ones (Gehl 2010). Sitte observed that urban squares have to grow historically in the heart of the city (Levy 2008). Numerous studies have revealed that liveable public urban space, such as the square, is an urban fragment that is embedded in its urban structure physically and functionally (Carmona 2003; Corbett 2004; Gehl 2010; Carmona 2010b). Physically it provides good circulation and connects spaces to other parts of the city. Functionally, this is achieved by surrounding the space with mixed land uses, which promote a diverse range of users. Good examples of squares are those able to embrace a mixture of land uses, including residences, commerce and leisure uses, with high accessibility from the surrounding of the city.

Bottom up approach

Carr et al. (1992) view the liveability of an open space through a multidisciplinary approach, focussing on its perception and function. To him, successful public spaces are those in use by the public (Gehl & Matan 2009). Assumptions made by providers about users and their requirements are one of the major causes of breakdown in the liveability of public open spaces (Madanipour 2010b). According to Gehl and Matan (2009), a natural growth is essential to provide successful places, with stress on a *'bottom-up, democratic'* approach (Gehl & Matan 2009). Hence the need to involve users in the planning and design process for providing well-used spaces.

Meeting other people

According to Gehl, both in the past and more recently, an important function of urban space concerns the opportunities it offers to meet others (Gehl 2007). They are also inspired and attracted by the presence of others (Gehl 2010). The most popular activity in such spaces is people watching, but this is something overlooked in many designs (Whyte 1990). It is a corresponding process of *'something happens because something is happening because something happens,'* which eventually creates liveable open spaces (Gehl 2010 p.64).

Active engagement

Active engagement concerns direct involvement within a space (Carr et al. 1992). A considerable amount of literature has been published focussing on analysing users' behaviour as interpretative and a reflection of good quality places (Madanipour 2010a). Carr et al. (1992) categorised users' engagement into '*passive'* and '*active'*. Whyte (1980) found passive engagement was seen as attractive, with the majority of those he observed sitting in the spaces he studied engaged in observing the flow of pedestrians while avoiding eye contact. He further found that those sitting in this

space also enjoyed observing activities, such as public art and performances. Active engagement is defined as more direct contact, whether with family, friends or strangers. Gehl (2010) adds '*pass through space'* as a space engagement where people use the space as a transection. Liveable spaces allow different degrees of engagement to take place within them (Carmona et al. 2003; Gehl 2010), leading to a need for spaces that encourage users to stay longer and enjoy recreational activities rather being passive and therefore spending less time there. Urban design of public spaces needs to include furnishings that encourage attractive and enjoyable activities (Copper Marcus & Francis 1998). Gehl classifies activities in such a space according into their necessary *'must'*, optional *'might'* and social *'joy'* natures. He states that quality of the built environment increases the optional number of activities, and thus invites a substantial growth of social activities (Gehl 2010). Liveable spaces invite their users to undertake such a variety of activities.

Public art

Public art is a piece of artwork display in a public space. This could involve formal or informal social events, and generally contributes beauty, a historic representation or/and social value to the space. Urban spaces, such as squares, are the ideal location for such installations (Corbett 2004; Gehl 2010). These include spaces that are open, with excellent vistas, visual contact both in and out of the space, seating spaces to allow people to talk, and to enable music and performances, the sharing of talent and demonstrations (Gehl 2010). These events are significant in strengthening the value that the community attributes to their open space (Woolley 2003). Public art (such as sculpture, performance or/and social events) create what Whyte (1990 p.32) termed a *'triangulation effect'*. This could take the form of a physical object or visual depiction creating an external stimulus that encourages strangers to exchange comments and start a conversation as if they were already friends. Such conversations in public open spaces involve more than simply words: they include facial expressions, voice tone, background, expected dialogues and movements and culturally different touch language (Peters 2010).

Edge attraction and subspace

A large space is not conducive to feeling relaxed: there is a preference for places to stand next to, or to sit on, such as steps, edges and flagpoles (Whyte 1990: Corbett 2004: Gehl 2010). Gehl (2010) also defined this as *'edge as staying zone'*. Previous studies have reported that understanding the diversity in the behaviour of different social groups according to their culture, age, gender and ethnicity is crucial to providing the most effective seating arrangements in any space (Corbett 2004; Gehl 2010).

In his observation of squares and plazas, Whyte (1990) found that the favoured spaces were those slightly protected by trees or shelters and which had easy access, a *'caving feeling space'*. Users chose to stay in a location which offered them a good view of the space and the flow of pedestrians (Corbett 2004; Gehl 2010). In his observation of five squares, Corbett (2004) established that there is correlation between the intensity of pedestrian flow and where people chose to remain (Corbett, 2004), meaning that the provision of seating is an important feature in a public space. This needs to be provided in an innovative manner in the correct location in the form of benches, chairs and steps.

Personal space

Personal space is the distance kept between two individuals to ensure they feel comfortable. The degree of intimacy in a relationship enables such distances to be smaller between family and friends, and further apart between strangers (Diversity Council 2008). Personal space is viewed differently in each culture, ranging between 1.2 and 3.7m. In Western culture, it is around 1.2m, or approximately the length of an outstretched arm (Corbett 2004). This not only affects the design and arrangement of seating, but also has to be considered in designing walkways.

Safety

Presenting a feeling of security and safety for the proposed users is a fundamental issue for creating liveable open spaces (Copper Marcus & Francis 1998; Gehl 2010). A feeling of insecurity can be classified as fear of both crime and traffic. A public space with a high level of pedestrianisation is perceived as one that is safe (Corbett 2004).

Safety from crime and traffic is therefore important to encourage users to use a space. Women and children are the most vulnerable and potential crime victims in a public space (Peters 2010). A number of studies were undertaken to measure how women felt in urban spaces in different cities around the UK. 65% of women in Woolwich were afraid of being attacked at night. 36% of women in Edinburgh were afraid of being mugged and robbed in the daytime as well. Similar findings were established in 12 towns and cities all over Britain. These problems will not be solved simply by the provision of better policing and security, but also by *'a genuine choice of activities, entertainment and places where women can meet in towns and cities at night, and provision for children where necessary'* (Worpole 1992 p.65). Madanipour (1996) also supports the view that providing activities, entertainment and provision for children is considerably more effective than increasing policing to ensure a feeling of safety in public spaces (Madanipour 1996).

Provision for children and young people

The inclusion of provision for children and young people is also a significant attraction in a public space, one that promotes quality engagement. As previously mentioned, providing a public space that has a good facilities for children is essential for it to be seen as family friendly. Gehl (2010) stresses that communal city spaces need to provide children's play areas to give children and young people opportunities for all kinds of sports and exercise and the development of physical skills. This requirement is for spaces that are unspecialised outdoor venues in which to play and

hang around (Jacobs 1961). Those enabling activities such as skateboarding, stunt bikes and rollerblading are particularly attractive for young people. An approach that generates space for both adults and children within an area of mixed use is effective in creating a liveable square or plaza. It also creates enjoyable scenes for passers-by (Shaftoe 2008).

Gender

Gender is an essential aspect to be considered in order to involve all societal groups. According to Alexandris and Carroll (1997) and Jackson and Henderson (1995) (among others), women have limited leisure experiences within public spaces as compared to men, due to their lack of free time and additional responsibilities (Peters 2010). Women's responsibilities within society usually constrain their liberty of choice (Peters 2010). Muslim women, in particular, face multiple limitations of time and lack of social interaction, due to the priority given towards husband, children and other family members. They also lack opportunities due to the fact that they tend to avoid certain places because of anxiety for their children's safety (Y¨ucesoy 2006: cited in Peters 2010).

Furthermore, due to their domestic responsibilities, women are less likely to frequent public open spaces at a distance from their homes. The average use of mid-Manhattan plazas was found to be 60% male and 40% female (Whyte 1980). Rivlin (1987) states that women are more likely to use nearby residential open spaces than city public open spaces when not accompanied by a man (Franck & Paxson 1989). Women unaccompanied by men in public open spaces are more prone to select quieter areas to sit as compared to men (Corbett 2004). It is fundamental to deal with women as users who make and convey open spaces, not as possible victims in such areas (Peters 2010). The physical design characteristics and features (such as high degree of visual access, amenities that support necessary activities such as shopping) may encourage women's use of a public space (Franck & Paxson 1989). A good

environment for women is a family friendly space that has facilities for children and the elderly.

2.3.2 Economic dimension

In order to be attractive, city spaces need to function well on a human scale (Gehl 2010). The economic dimension looks at ways in which an open space contributes economically to its surrounding. Liveable public open spaces are ones which facilitate and support recreational and leisure activities. This section discusses the concepts used by researchers to enhance economic activities in public open spaces in order to improve their liveability. Those concepts include the place-making concept, the concept of place-keeping, mixed-use, networking or the integration of transportation and space quality, food and drink and vendors.

Place-making concept

Place-making is a concept supported by national European policies to produce spaces that are beneficial in the sense of user enjoyment. It underpins the concept of designing spaces that enhance health, wellbeing and happiness, and promotes the strengthening of the relationship between users and the space itself, by increasing a sense of belonging and attachment. It is an interpretation of wider sustainability and regeneration concepts that have been related to providing successful spaces in European countries over the last 20-30 years (Carpenter 2006; CLG 2007c; IISD 2004; Swedish Ministry of the Environment 2004; Dekker and van Kempen 2004: cited in Smith et al. 2009; Dempsey & Burton 2012). Cleanliness, safety, attractiveness and a welcoming atmosphere need to be ensured in place-making, alongside enhancing social interaction and creating stronger communities (ODPM 2006 cited in Smith et al. 2009; Dempsey & Burton 2012).

Concept of Place-keeping

The concept of place-keeping is the long-term management of locations to ensure that the social, environmental and economic quality and benefits can be enjoyed by future generations (Smith et al. 2009; Dempsey & Burton 2012). Place-keeping is concerned with viewing a location as a long-term process, rather than an end-product. It is the first comprehensive concept that involves long-term aspects in managing open space at the developmental stage (Wild et al. 2008: cited in Smith et al. 2009; Dempsey & Burton 2012). Maintenance, partnerships, funding and evaluation have never been considered as aspects of this wider concept (Smith et al. 2009; Dempsey & Burton 2012).

Place-keeping is associated with the following step after the provision of high quality spaces. By maintaining and enhancing the quality of such spaces, there is a preservation of social, environmental and economic quality. It is also reinforced by the broader concept of sustainability. As illustrated in Figure 2.1, both place-making and place-keeping concepts are targeted at providing spaces in which users wish to spend time, both now and in the future (after DCLG 2007c: cited in Smith et al. 2009; Dempsey & Burton 2012). This implies that spaces must provide for the needs of both current and future users (after WCED 1987: cited in Smith et al. 2009; Dempsey & Burton 2012).

Place-keeping is implemented through the involvement of innovative partnership approaches from private enterprises, communities and the government, which helped to create positive socio-economic environments that contribute to the long-term maintenance of open spaces. This can be undertaken by the creation of practical solutions for the maintaining and managing of the space. This also has to be implanted by legislation at every level. Furthermore, conducting a shared agenda for the long-term improvement of open spaces will bring a policy of cohesion towards the long-term security of its investments (Smith et al. 2009; Dempsey & Burton 2012).

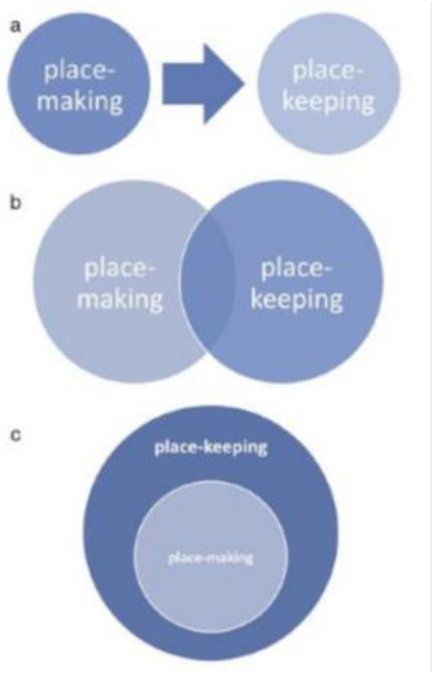


Figure 2.1: Place-making and place-keeping: different approaches conceptualising the relationship.

Mix-use

Public open spaces work better in mixed-use urban areas. Providing public spaces in new low-density suburbs could appear attractive on a master plan, but can prove meaningless and underused in reality (Shaftoe 2008). Jacobs (1961) has criticised functional zoning approaches and accused them of being responsible for declining liveability in American cities (Jacobs 1961). However, it is not zoning per se that is problematic, but the nature of zoning and the manner in which it is implemented (Krier 1990 cited in Carmona et al. 2003). In order to generate an exuberant diversity within a city, its urban fabric needs to be formed by small districts, each with more than one function, and short blocks and designs for sufficiently dense concentrations of inhabitants. Creating overlapping and interweaving of activities by combined uses within the urban fabric encourages a sufficiently dense concentration of people for whatever purposes available (Carmona et al. 2003). Sitte (1965) stressed the importance of the ideal location for a square being in close proximity to a

commercial street (Levy 2008). Allowing for complexity of activities with overlapping facilities for purposeful walking, stopping, resting, remaining at length and conversing, provides effective meeting places (Gehl 2010). The more activities on offer in the space, the more reasons users find to come and use it.

Networking or integration of transportation and space quality

Transport is significant in promoting sustainable spaces, as it has a major responsibility for controlling mobility (Corbett 2004). It has conclusively been established that good public transportation (one that is also integrated effectively with people who walk and cycle) as the main network for the city can dramatically improve liveability in city spaces (Whyte 1990; Carmona 2003; Corbett 2004; Gehl 2010). An integrated public transportation system is therefore a crucial prerequisite for liveable public spaces.

Food and drink

Food is a key attractive element to an open space, as the sight of people eating attracts others (Whyte 1990; Gehl 2003). Food and drink in a public open space offers sensory pleasure (Shaftoe 2008). Shaftoe (2008) considered eating and drinking in public spaces as one of the non-visual aesthetic pleasures of enjoying the outdoors. All across the global city space, the use of cafes has grown significantly (Gehl 2007). Gehl (as mentioned in section 2.2.2.) called this a *'Cappuccino Culture'*. Shaftoe (2008) suggested that, in order to enhance liveability, such provision needs to be emphasised in public spaces by creating picnicking space, drinks, food stalls and cafes (Shaftoe 2008).

Vendors

Whyte (1990) stressed that, although vendors are restricted in most cities, they do, in fact, contribute to encouraging people to remain in the square or plaza. However, vendors' activities need to be monitored by the management of the space, in order to control their location, and maintain quality of service (Corbett 2004). Good quality vendors provide socially essential services, such as snacks, newspapers, flowers, etc., which greatly contributes to the liveability of city squares (Corbett 2004), inviting passers-by to stop and socialise, talk and discuss. Vendors usually attract others, as those who buy and eat attract others to stop and buy in turn (Whyte 1990).

2.3.3 Environmental/physical dimension

The visual dimension is the overall appearance of the physical built environment of the space. Urban design is a tool used to enhance a sense of place. Carmona et al., (2003) stresses that urban design is not a matter of architectural style; it is rather a matter of places created by urban design (Carmona et al. 2003). There are design concepts crucial to obtaining public open spaces that visually invite people to use them. Such issues are associated primarily with the following: walkability; micro-climate; enclosure but no boundaries; soft edges, visual complexity; accessibility; urban form; landscape; human dimension; size and shape and water features.

Walkability

Walkability is measurement of how inviting or un-inviting a space is to pedestrians. Walkability is designed to provide increased accessibility and greater choices of transportation within the space (VTPI 2010: cited in Shamsuddin et al. 2012). As walkability enhances the usability of a space, it is considered part of the liveability that promotes a sustainable environment and creates a liveable space (see Figure 2.2) (Shamsuddin et al. 2012). Good public spaces contribute to health and well-being

(Gehl 2010). Planning needs to provide opportunities for exercising as a part of daily life, promoting walking and cycling as a natural part of the daily pattern of activity in the built environment, so enhancing well-being and quality of life.

The human landscape tends to have been neglected during planning, due to the prioritising of car traffic (Gehl 2010). Roads are a physical barrier and cause noise and pollution in public open spaces (Corbett 2004). Promoting car-free open spaces in Europe has dramatically boosted pedestrian movement and enhanced liveability (Corbett 2004). Walkability can also be used to create shared spaces to invite traffic to slow down (Gehl 2010). According to Gehl (2010), when it comes to priorities, life has to come before space. He states that a single policy of increasing pedestrians and cyclists can certainly generate the interconnectedness between elements: liveability, safety, sustainability and health. However, there is strong evidence about the positive relationship between people's educational qualifications and their choice of a healthy lifestyle, including physical activities in public open spaces (Thrane, 2006). Furthermore, implementing healthy lifestyles and physical activity in open spaces is more closely related to having a high level of qualifications (Thrane 2006).

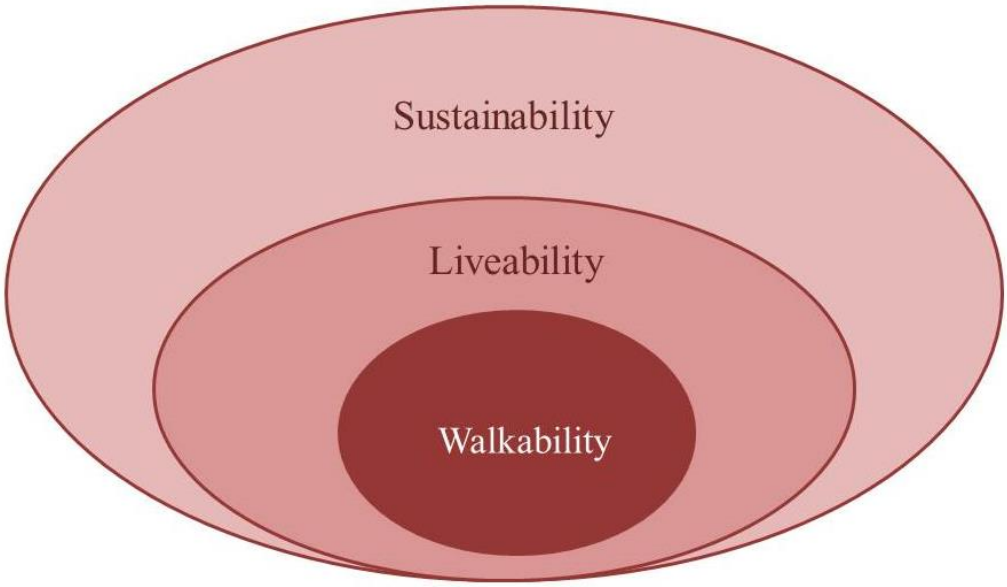


Figure 2.2: Sustainability, Liveability and Walkability connection; Source: University of Winconsin Transportation Analysis Team (2011), Source: (Shamsuddin et al. 2012).

Copenhagen is an effective example of how promoting walkability can create liveable city space. It is considered as the first major European city to give priority to pedestrians over traffic. This was implemented in the 1960s in order to create a better environment for customers in the city's commercial centre. Copenhagen could be considered as the first European city to take serious steps towards providing pedestrian priority in its streets. In November 1962, a new restriction promoted a traffic-free environment on the main street (Stroget Street) which underwent the first major European transformation towards pedestrian priority. By the end of the 1970s, a far greater variety of new activities had become established in Stroget Street.

Micro-climate

Micro-climate is the local climate within the space. It is crucial to provide a comfortable micro-climate where people can sit, walk and ride (Corbett 2004; Lenzholzer & van der Wulp 2010 and Gehl 2010). Most of the time, liveability in public open spaces includes consideration of their micro-climate (Shaftoe 2008). In case studies conducted in the Netherlands, users felt thermally uncomfortable in squares that were too large, too open or/and which had been built using cold materials (Lenzholzer & van der Wulp 2010). Open spaces need to be considered carefully at all planning and designing levels, due to the fact that there are different geographical climate factors which affect the microclimate of a public open space. To Gehl (2010), there has been a misleading tendency accorded to weather all over the world, in which human beings forget the majority of days that are comfortable. Gehl's opinion is that the weather is acceptable for most of the year in all regions. Well-designed landscaping of a space by working with sunlight to provide sun, light or shade, along with protection from the wind, can help provide a pleasant atmosphere for users. The sun is a principal factor determining where people will sit (Whyte 1990). In cities where there is extreme cold, the design of the space has to consider low-rise buildings and the support of outdoor heaters. Spaces in cities with extreme heat require shade and good ventilation (Shaftoe 2008).

Enclosure but no boundaries

Enclosure is the users' spatial recognition of space as a place (Corbett 2004 and Gehl 2010). It is the sense in which a space is bounded by buildings and vegetation, creating spatial outdoor places (Clemente et al. 2005 cited in Forsyth et al. 2010), and is a sense of release from surrounding urban streets that improves the health and emotional well-being of the users (Copper Marcus & Francis 1998). However, this has to be provided with care, by combining physical and visual elements as it is possible to make it too enclosed. Whyte (1990) therefore stressed that squares and plazas that are open and unfenced would increase their liveability (Whyte 1990). Good design of public space is that which provides a clear visual sense of enclosure, without the creation of barriers.

Soft edges

Whyte (1990) states that the street is the river of life of the city. The soft edge concept is also known as transparency, where inhabitants can see human activity beyond the spatial edges of a public space (Forsyth et al. 2010 and Gehl 2010). The edge that defines the space has to be dense and mixed in use, in order to create richness. Soft edges of a space can be as an exchange zone containing visual interaction with the indoor activities of the surrounding buildings, with doors and large windows, or edges as staying zone by creating opportunity for standing and sitting by the space edges (Gehl 2010). Federation Square in Melbourne (among others) were significantly improved and enthusiastically used by implementing the concept of *'active street frontage'* (Gehl 2010), which includes the provision of soft edges in a square or plaza and has an essential effect in encouraging liveability.

Visual complexity

Vision is the first experience an individual encounters in any space (Madanipour 1996). Compared to the other senses, vision is highly significant, as 87% of human perception depends upon it (Bell 2004). Visual complexity is concerned with the user's perception of issues of the attractiveness of the urban design and the appearance of the landscape (Forsyth et al. 2010). Urban design appearance is focussed on complexity in the built environment, including form, lines, colours, and texture (Carmona 2007). It is also concerned with the character of patterns within the physical environment, i.e. dominance of the focal element; proportion in the size relationship between an object and its surroundings; diversity of pattern elements; continuity flow of pattern elements (Forsyth et al. 2010). Bell states that designers have been increasingly concerned with providing attractive and aesthetic spaces, and that in order to offer stimulus and enrichment to quality of life there is a basic essential necessity for visual complexity (Bell 2004). Until the 1960s, visual perception had been the dominant dimension in creating urban design (Carmona 2007). However, appearance is only the invitation: the user can only experience the spatial understanding of a three-dimensional space by using it (Madanipour 1996).

Accessibility

Lynch (1981) states that a well-used space must be accessible. Easy accessibility, good pedestrian connections and being clearly differentiated from the surrounding context, creates a welcoming atmosphere (Gehl 2010 and Copper Marcus & Francis 1998). People prefer spaces which are near to them and are easily accessible (Whyte 1990). Carr et al. (1992) classify accessibility into '*visual'*, '*symbolic'* and '*physical*'. Visual access, *'visibility'*: this is what people see of a space before they enter and judge whether it is comfortable, inviting and safe. Symbolic access, *'symbols'*: this is the way elements are welcoming, threatening or comforting when people enter the public space. *'Physical'* access is the ability to enter the public space, regardless of whether or not it is possible to see inside (Carr et al. 1992), i.e. fences, barriers and

high hedges are not recommended as they can limit visual and physical accessibility. Improving the quality and safety of the space can increase its symbolic accessibility. Good accessibility for public open spaces can increase the possibilities of enjoying the space, so enhancing its liveability (Era 2012).

Urban form

Many researchers, including Jacobs (1961) and Newman (1973), claim that the built environment can potentially cause space to be abandoned or encourage undesirable behaviour in public spaces (Carmona 2010). Coleman (1985) established the influence of urban design in enhancing positive usage of a space and reducing anti-social behaviour. Gehl (2007, 2010 and 2011), Jacobs (1961), Cooper Marcus and Francis (1998), among others, stress that there are urban design issues which can enhance the potential for creating increased liveable public spaces.

Urban form can be summarised as space imageability and legibility (Clemente et al. 2005 cited in Forsyth et al. 2010). Imageability is a term used for the physical quality of a space, which gives an observer a strong, vivid image (Lynch 1960). It is the user's overall perception of the urban space. A highly imageable space would be one that is well formed, containing very distinct parts, instantly recognisable to its usual inhabitants (Lynch 1960). Legibility refers to the characteristic layout of the space, which could be identified by an observer. It also represents the main strategic physical elements that contribute to the ways in which the space is seen and understood. These concepts also underlie the following analysis of the city's urban environment. Lynch's theory defines a method of examining legibility based on five main elements: paths, edges, districts, nodes and landmarks (Lynch 1960).

- **Paths:** includes streets, walkways, transit lines, canals, railroads. These are channels along which the observer moves customarily, occasionally, or potentially.

- **Edges:** linear features that cannot be used as movement elements. They act as boundaries between two phases and linear breaks in continuity, i.e. shores; railroad cuts; edges of development; walls.
- **Districts**: medium-to-large units of the city that are noticeable with some common identifying characteristics.
- **Landmarks:** external references the observer does not enter, usually comprised of a simply defined physical object, i.e. a building, sign, store, or mountain.
- **Nodes:** strategic spots and intensive foci for travelling in a city, including primary junctions, places of a break in transportation, a crossing or convergence of paths, moments of shift from one structure to another. They can also be created by condensation of some use or physical character, as a street-corner hangout or an enclosed square (Lynch 1960).

In the above, squares and plazas can be considered as nodes or centre of attraction and strategic points in the city for people to use. They gain their importance from being the focal point of activities or physical characters. Lynch (1960) states that some squares and plazas that include sculptures or fountains could also be seen as landmarks. Therefore, producing squares or plazas with consideration to their imageability assists in creating an attractive physical built environment, one that invites use.

Landscape

Soft landscape is a substantial element in public space, as it creates suntraps, shaded areas, wind breakers, reduced air pollution, reduced noise and hides unpleasant views. Floral areas attract people to gather nearby (Corbett 2004), while areas of lawn offer users informal space for a number of activities. However, in urban spaces (e.g. squares) they should not take up too much room and so lose their urban identity and turn into parks (Corbett 2004). Plants generally add a natural element to a space. Beside the benefits of trees in making the climate in a public space more

comfortable, as previously discussed, trees can also create the effect of a canopy or cave, which is an enjoyable sociable space (Whyte 1990).

Human dimension

The human dimension (or human scale) refers to a sense of proportion in the built environment in relation to the pedestrian (Clemente et al. 2005 cited in Forsyth et al. 2010). Due to the influence of the modern movement and market forces, the human scale has been neglected for four decades, with individual buildings and traffic having been prioritised over open spaces (Gehl 2010). This was first pointed out by Jacobs (1961), and there has since been a general agreement among researchers (i.e. Corbett 2004; Forsyth et al.; Gehl 2010) that respecting the human scale is a fundamental element in providing liveable public open spaces.

Size and shape

Due to the variation in location and context, it is difficult to specify the ideal size of a public open space. Shaftoe illustrated that fairly small spaces with *'breathe out'* design features to the surrounding areas are important (Shaftoe 2008). Squares need to be sufficiently large for the eye to roam, but not so vast that the feeling of intimate is completely lost (Levy 2008). Distances of between 18-100m in open space cross-section have been considered best (Llewelyn-Davies 2004). Sitte advised 140m x 60m for a square, whereas Carr et al. (1992) closely support Lynch's figure, stating that the most successful squares are less than 22m in length (Corbett 2004). Gehl, on the other hand, advised that a public space should not exceed a dimension between 70m to 100m (Gehl 1987). Shape is also an object of debate, as some researchers prefer formal shapes while others are in favour of those which are more organic. However, the preferable size and shape depends on the purpose of the space, with the ideal size to fit and be comfortable for users being a ratio of 1:2 and 1:3, and measuring 70m to 100m, as set out by Gehl. A rectangular shape is considered the

most robust for providing liveable spaces. Liveable squares/plazas have to consider *'social distances',* which depend on the fact that the maximum distance to be able to distinguish facial expressions is approximately 25m (Gehl 1987). In addition, the maximum distance for seeing any human movement is 135m (Shaftoe 2008).

Water features

Water features are an essential element and one of the main attractions for people to stay in public space (Whyte 1990). Their attractiveness is due to the sound they create, filtering traffic noise and creating a kind of calming ambience, while also adding a vertical dimension into the space (Corbett 2004). However, this has to be well designed and not too noisy to distract from conversation (Whyte 1990). Children find water irresistible, and therefore safety is of prime importance (Corbett 2004). Whyte (1990) finds it unfair to restrict the public from using the water, as it is an enjoyable activity in a public space. Special care in providing water features adds a beautiful focal point and welcoming atmosphere.

The previous discussion set out the social, economic and environmental dimensions necessary to achieving liveability in public open spaces. The social dimension examines concepts relating to the improvement of users' interactions with the space and with each other. The economic dimension assesses the concepts of recreational, enjoyment, management and maintenance. The environmental/physical dimension studies those principles that lead to the provision of attractive spaces. However, those dimensions are based around the different types of public open spaces that are presented in the following section.

2.4 Public open space typology in the West and its links to liveable public open space

A number of different types of open spaces are found in the West, including designed spaces and natural reserved areas. An increasing amount of literature has discussed the different types of public open spaces and their quality. However, a concept of liveable public open space has developed based on studies of the characteristics, quality and usage of different types of public open spaces.

Open space has commonly been classified as being a non-productive area. Open space includes parks, greenways, gardens, temple compounds, ceremonial grounds, outdoor markets, social places, urban spaces, gymnasia for exercise and recreation, burial grounds, hunting and wildlife reserves (The Garden and Landscape Guide 2008). Therefore, public open spaces are multifarious. Nevertheless, Lynch argued that *'the physical types of open space presently designed are astonishingly limited: the swimming beach, the roadside picnic area, the woodland with "nature trails", the grassed park dotted with trees and shrubbery, comprise the conventional range'* (Lynch 1972 p.110). Lynch compared the spaces when public open space is designed to natural open spaces. However, there is an inconsistency in this argument, as there is much more scope for variety in *'designed'* public open spaces than in overall open spaces. Indeed, this research focuses on designed public open spaces. In this thesis, public open space typology is classified into nine main different categories, mirroring those outlined in the Planning Advice Note PAN 65 Planning and Open Space produced by the Scottish Government and The Garden and Landscape Guide. These are: parks, gardens, natural and semi-natural spaces (including woodland), greenways, greenbelts, playgrounds, managed beach areas, outdoor sports areas and urban spaces. However, particular spaces might not fit neatly into one category (Scottish Government 2008 and The Garden and Landscape Guide 2008). Table 2.1 shows the Western typology of public open space.

<table>
<tr><th>Type of public space</th><th colspan="3">Design feature</th></tr>
<tr><td>Parks</td><td colspan="3">Parks are open natural or semi-natural areas, artificially bordered with a hedge, fence or wall. They are normally enclosed, managed and maintained for recreational use, or to safeguard wildlife and natural habitats. They may also contain buildings, public art and playgrounds.</td></tr>
<tr><td>Gardens</td><td colspan="3">Gardens are formal designed areas that provide a more intimate space, usually given over to dedicated managers. Unlike parks, gardens are designed spaces.</td></tr>
<tr><td>Natural & semi natural green spaces and woodland</td><td colspan="3">Environmental and biodiversity spaces for wildlife conservation. They are usually provided in the city to promote environmental awareness and serve educational purposes (Rogers 2010).</td></tr>
<tr><td>Greenways</td><td colspan="3">Greenway, green corridors or green wedges are routes for humans, animals or to allow natural processes. They are protected wild areas. They may run through an urban area instead of around it. They are provided with loose outlines or borders to prevent over development of the area and to allow wildlife to return and become established. They are conservation areas with a minimum quantity of designed elements, which are used for movement and appear as corridors.</td></tr>
<tr><td>Greenbelt</td><td colspan="3">Greenbelt is a strip of natural protected land, used to manage environmental quality around cities. It also provides a setting for the city and prevents urban coalescence.</td></tr>
<tr><td>Playground</td><td colspan="3">A playground, play park, or play area is a place specifically designed for young people to play, interact socially, and develop their physical coordination, strength and flexibility while having fun (Rogers 2010). Some playgrounds could also include facilities for informal games or adult sports or fitness equipment.</td></tr>
<tr><td>Managed beach areas</td><td colspan="3">Swimming beaches are a designed strip of landscape along the shoreline of an ocean, sea, lake, or river. They usually include sand, umbrellas, seating elements, coffee shops and restaurants. Their purpose is to create a pleasant interaction with water by providing leisure facilities for beach users.</td></tr>
<tr><td>Outdoor sport areas</td><td colspan="3">Sports area or sports fields are a designed area used for sports such as cricket, rugby, football, basketball, tennis etc. (Peters 2010)</td></tr>
<tr><td>Urban spaces</td><td colspan="3">Urban spaces are civic areas which are a part of the town’s fabric such as plazas, squares, streetscape and waterfront promenades. These spaces are predominantly comprised of hard landscaping elements that provides a focus for pedestrian activity and support connections for people with their environment (Scottish Executive 2008). Urban spaces such as streets and squares historically unify the structure of the city have a role as the principal structure for civic design and support spatial organisation (Trancik 1986). However, those spaces have lost much of their social purpose and physical value in the modern era (Trancik 1986).
<table>
<tr><td>Waterfront</td><td>Streetscape</td><td>Square/Plazas</td></tr>
<tr><td>Waterfront or seafront is a designed harbour, or promenade associated with businesses and leisure facilities. Most early trade was conducted by sea harbours and ports were ideally located on shipping routes between different European cities.</td><td>A street is a paved public thoroughfare space, edged by buildings in an urban context, where people can freely assemble, interact, and move about.</td><td>They are important elements of the city structure, which are mostly located at the heart of the traditional town for community gathering. These are usually dominated by hard landscape and consist of representative feature such as a fountain, well, monument, or statue.</td></tr>
</table></td></tr>
</table>

Table 2.1: Types of public open spaces in the West (adapted from Scottish Government 2008 and The Garden and Landscape Guide 2008).

A number of Western researchers, such as Jacob (1961), Whyte (1980, 1988,1990), Shaftoe (2008), Gehl (1987, 1996) and others, have studied liveability in different types of public open spaces, such as gardens, parks and playgrounds, with a focus on urban spaces including squares and plazas. The literature illustrates the challenges involved, enhancing concepts and good examples of liveable public open spaces. However, the evaluation of public open spaces has followed a different course in the Middle East. There are therefore different or additional social, economic and environmental characteristics to consider when studying the liveability of public open spaces in the Middle East. The following section provides a brief account of how spaces have evolved in the Middle East and their condition by reviewing the literature concerning definition, usage and concepts.

2.5 The evaluation of public open space in the Middle East context

The Middle East is part of the Arab Muslim region and has a strong united identity based on the common Arabic language, Islamic religion and a common Arabic history (Peppelenbosch and Teune 1981: cited in Germeraad 1990). The Arab Muslim region stretches from Morocco at the Atlantic Ocean to Oman at the Arabian Gulf. Despite the many sub-cultural and ethnic minorities, Arabs still share the same culture (Germeraad 1990). As illustrated in Figure 2.3, this research will identify Middle Eastern countries in accordance with Peppelenbosch and Teune (1981) and Weiss and Green (1987) as the following Arab countries: Egypt; Jordan; Palestine; Lebanon; Syria; Iraq; Kuwait; Saudi Arabia; Qatar; Bahrain; The United Arab Emirates; Yemen and the Sultanate of Oman. Israel is excluded, due to the fact that it has its own language, culture, history and religion. Turkey is excluded due to having developed its own nationalism, attempting to purify its language and culture from Arabic influence and therefore considers its culture as *'European'* rather than *'Oriental'*. In addition, Iran is excluded due to its unique Persian language, history and culture. Libya, Tunisia, Algeria, Morocco and Sudan, although Arab Muslim

countries, are excluded because they do not belong to the Middle East region (Wagstaff 1985: cited in Germeraad 1990). Section 2.6 reviews the way in which liveable public open space has been conceptualised and analysed in international literature produced in the context of the Middle East.

Figure 2.3: Arab Middle East Countries. (Source: http://psicolaranja.blogs.sapo.pt/tag/democracia)

In order to understand liveability in contemporary open spaces it is essential to understand them in the wider context of the development of the built environment. There are two such concepts in the Middle East in the Islamic era: (1) traditional Islamic urban planning and (2) modern urban design of public open spaces.

2.5.1 Traditional Islamic urban planning in the Middle East

Muslims used Sharī'ah as encoded rules to provide their built environment. Urban development in an Islamic city was controlled by both planned and spontaneous growth, which is intricate and socially regulated. This complex, yet consistent, development has been found in Islamic cities, town and villages from Spain to India. Formal planning was mainly used to define the formal layout of the location of a palace in response to military requirements and representations of power and royalty. However, such planning was not as common in the typical Islamic city as spontaneous growth. Due to the strength of Sharī'ah law, Islamic cities developed in an organic way, characterised by private communities and social groups (Kiet 2010). So rather than being designed by a formal plan, Islamic cities grew in accordance to the requirements of the populace (Ben-Hamouche 2009 cited in Kiet 1994).

Islam assimilated and synthesised all that it encountered (Germeraad 1990). During the early rapid spread of Islam between the 7th and 15th centuries in the Middle East, Muslims absorbed Egyptian, Greek and Roman urban heritage, utilising them according to their needs, and fully adopting others' civilisations and traditions (see Figure 2.4) (Germeraad 1990). In his study on Fustat, in Egypt, Kuban (1978) states that in early Islam there were no sharp differences between historical traditions and religious beliefs, and Muslims developed existing cities and initiated new developments (Germeraad 1990). Early Islamic cities (such as Cairo in Egypt and Baghdad and Samarra in Iraq) matured from mainly military camps to spectacular cities (De Montêquin 1983). Islamic urban design style is rich and cannot be defined as a homogeneous approach, due to the continuity of indigenous urban development under Islam (Kuban 1983).

Although Arabs in the Arab Peninsula had enjoyed a long literary tradition during the pre-Islamic era, they did not practice the display of physical architectural culture or a major built environment in their cities (De Montêquin 1983). The dry, warm climate and lack of water forced the majority of dwellers to live nomadic lifestyles, in homes made predominately of mud and animal hair (Germeraad 1990). Historically, water was the fundamental element of urbanisation in the region. This was exemplified in

Mecca, which was inhabited after the emergence of the Zamzam water well in 2000 BC. Consequently, early Arabs chose to invest and risk their wealth in livestock, gold and silver instead of architecture (De Montêquin 1983). Moreover, natural materials are very limited. Materials such as desert soil, limestone, mud and plants (specifically palm tree trunks) were the main materials used in construction. Such building materials gave very little chance for buildings in the region to stand the test of time. This remained the case during the early Islamic era between 622 and 850 CE. Such approach in urban planning had evolved distinctive open spaces, as discussed below. Three main principles had major influence in shaping Islamic cities: Sharī'ah, natural law and social factors (Saoud et al. 2014; Germeraad 1990). However, natural law and social factors were indirectly affected by Sharī'ah, due to the fact that any decision in relation to the built environment should not contradict it.

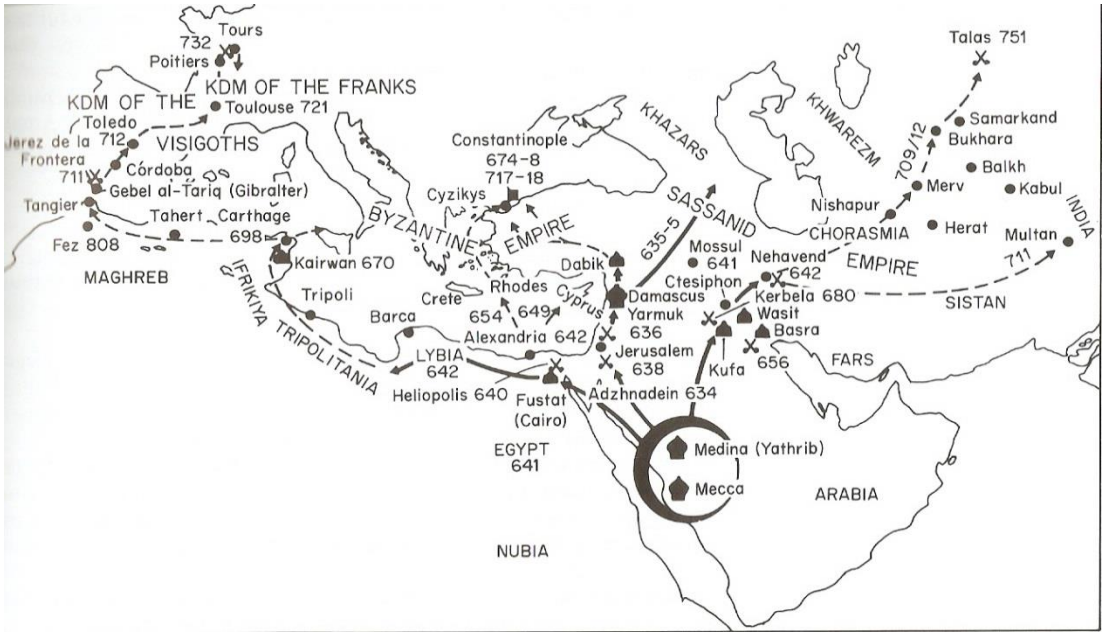


Figure 2.4: Arab expansions across the Near East, North Africa and Europe 634 to 808AD (based on Kinder and Hilgemann 1964). (Source Broadbent 1990).

Islamic law 'Sharī'ah'

In the Farewell of the prophet Muhammad in his Final Pilgrimage, he addressed Muslims saying: *'I have left among you two matters by holding fast to which, you shall never be misguided: the Book of Allah and my sunnah'*. Therefore, the Holy Qur'an and sunnah have been the two fundamental sources driving the principles and guidelines of 'Sharī'ah' Islamic law (Akbar 1984). Muslims believe the Holy Qur'an to be the book of God's final revelation, guidance and direction for humanity, as revealed to the prophet Muhammad in Arabic over a period of twenty-three years, between 610CE and 632CE. Muslims therefore consider the book to be infallible and containing a compressed source of information. The sunnah, on the other hand, is the range of Prophet Muhammad's specific words *'hadith'*, habits, practices and silent approvals, which he directly, or indirectly, directs Muslims to act upon, by mentioning the virtue of such an act (Akbar 1984). To Muslims, the Prophet Muhammad's practice, principles and lifestyle are the most practical and best exemplar of the Sharī'ah as a system of moral guidance and principles for Muslims in their everyday lives.

Muslims hold the belief that Islam is suitable for any time and place, and their daily activities must conform to Islamic standards (Akbar 1984). After the death of the prophet, Muslims faced new challenges that are not clearly addressed, either in the Holy Qur'an or in sunnah. Therefore, Muslim scholars (or ulama) developed regulations for these newly raised issues, which were also added to Sharī'ah. Sharī'ah has been carefully interpreted from the Qur'an and sunnah by the ulama. However, the ulama derived these regulations differently from these two main sources, leading to the development of six different Islamic schools during the 18th and 19th centuries (Akbar 1984). Nevertheless, having one version of the Holy Qur'an has acted as a strong pillar in limiting the differences between these six Muslim schools. Sharī'ah objectives include encouraging improvement of the natural and built environment and preventing damage, in order to maximise users' enjoyment and benefit (Germeraad 1990). This explains the strong role of Islamic law in urban design in the early Islamic era.

Until the 19th century, Islamic urban development had a specific physical structure based on the jamia'a or *'Friday mosque'* or masjid or *'mosque'*, including (as can be seen in Figure 2.5 below): citadels; souq or bazaar or market; courtyard houses; blind alleys; inconspicuous entrances to individual structures; and the trifold division of private, controlled semi-private and public space (Germeraad 1990; Kiet 2010; Saoud et al. 2014). In the Islamic era, the physical built environment, design guidelines and practical principles were inspired by the spirit of Islam, the holy Quran and Sharī'ah. Three major concepts of Sharī'ah historically regulated the provision of urban development in this era, which included privacy, the institution of waqf (a form of charitable endowment) and the responsibilities of the users, (Germeraad 1993).

1. Privacy

This concept emerged exclusively in residential units. It is local tradition, rather than pre-Islamic, found in ancient settlements in the region, e.g. Yemen (Germeraad 1993). Although the concept of classifying spaces as private, semi-private and public is an international one, it is clearly strengthened in the Middle East, due to its support of conservative Arabian culture. Moreover, in the Islamic era it was emphasised as it met the requirements for privacy in Muslim families. A Muslim woman is religiously covered from all men, apart from her husband and her mahram (an individual she is never permitted to marry because of their close blood relationship)[1] (Al-Munajjid 2014). Residential units were therefore designed to respond to such obligations. Doors and windows of different units were not to be located opposite each other. The front door was designed to form a hidden way to the family space of the house. Hence, the concept of privacy is mainly associated with transition spaces between the

[1] Mahram is a male relative, either by ties of blood (such as her father, grandfather, great-grandfather, etc., and her son, grandson, great-grandson, etc., her paternal and maternal uncles, her brother, brother's son and sister's son), or because radaa'ah or breastfeeding (such as the brother and husband of the woman who breastfed her), or because they are related by marriage (such as the mother's husband, the husband's father, grandfather, etc., and the husband's son, grandson, etc.). (Al-Munajjid 2014).

public and private spaces of residential units. However, in some countries, the concept of privacy has expanded, due to their degree of conservatism. This appears in the design of public open space between residential units in a way that provides flexibility to give an opportunity to maintain a limited amount of space that can be kept private from other users (Germeraad 1993).

2. Waqf

Waqf means *'putting aside the original property and donating its benefits for the sake of Allah. The original property is something from which benefit may be derived whilst its essence remains, such as houses, shops, gardens, etc. The benefits are beneficial produce that comes from the original property, such as crops, rents, provision of shelter, etc.'* (Aal Fawzaan 2005 p. 158: cited in Al-Munajjid 2014). It is a charitable institution in which individuals or groups place their property, not disposing of it by selling, giving or inheriting, or in any other way, so that any income or earnings are to be disposed of in the manner dictated by the person who initiated the waqf, i.e. for charitable purposes, etc. (Al-Khudayr cited in Al-Munajjid 2014). Charity is fundamentally emphasised in Islam by being the third of five main belief pillars of the Islamic religion, known as Zakat (mandatory annual charity) and Sadakah (which is optional) (Burckhardt 1976). This stresses the importance of waqf in the Islamic community. Individuals or groups use waqf to transfer ownership and assign their property (such as a building, land or water well) to be in the public interest (Burckhardt 1976). This could be either by assigning them directly to public use, or by reserving their revenues for a charitable purpose. There are two types of waqf: (1) waqf al-khairi and (2) waqf a'di or waqf ahli. The first is provided directly for public use, or to finance community buildings, such as masajid or mosques, madaris or schools, hospitals, fountains, caravanserais, public baths and houses (in which their rent is used for public benefit). The second is provided for specific groups of individuals, generally relatives of one or more families in need, or an orphan (Germeraad 1993). Waqf affects urban fabric layout in four ways: (1) it restricts the use of space; (2) it is frequently used to provide a common garden or an

open space used by extended relatives of a specific family; (3) it participates in maintaining historical buildings; (4) and it has a significant role in meeting users' needs and balancing the urban fabric of traditional cities (Germeraad 1990).

3. Users' responsibility

Users' responsibility is also known as the concept of independence in providing the built environment (Broadbent 1990). It is the traditional physical form of Middle Eastern built environment as an outcome of responsibilities enjoyed by individuals in ownership, control, adjustment and use of properties. The main tradition of the Prophet is that: *'There should be neither harming nor reciprocating harm'* and is the main discipline in judging any new issues that are raised concerning the built environment (Akbar 1984). This is based on the fact that the provision of a built environment must not harm the interests of an individual or the public (Akbar 1984). Hence, a collective decision of the parties involved generally controls the design of the space rather than any authorities. Such decisions in urban layout were thus made in a *'bottom-up'* fashion by users, within the principles of religious and ethical norms and without interference from the authorities (Germeraad 1990). In large cities, however, public open spaces were mainly formally planned initially as open areas by authorities in a *'top-down'* process, before being dramatically reformed by individuals as *'bottom-up'* processes responding to the force of growth. The *'bottom-up'* processes provided the concept of users practicing their responsibilities, which explains the organic pattern of urban areas (Akbar 1984). All types of open spaces (such as pathways, gathering spaces in markets and between residential units) were left open and undefined by the authority. However, users gradually develop activities within them, and build or reform them according to their collective needs (see Figure 2.6). In this era, the traditional design was neither purely a *'top-down'* approach by the authorities nor a *'bottom-up'* approach by individuals: it was formed instead by a combination of both (Germeraad 1990).

The senses of both smell and hearing were once highly considered in the planning of Muslims cities. According to Sharī'ah, providing a built environment should cause no damage or harm to the public, hence, odour, dust, smoke or noises (for example from blacksmiths) were considered unacceptable (Akbar 1984). Akbar (1984) undertook case studies in traditional Muslim cities, establishing the ways in which certain functions that were seen to harm others (either by causing bad smells or noises) were stopped by the authorities. Such activities were usually relocated away from residential areas and public spaces.

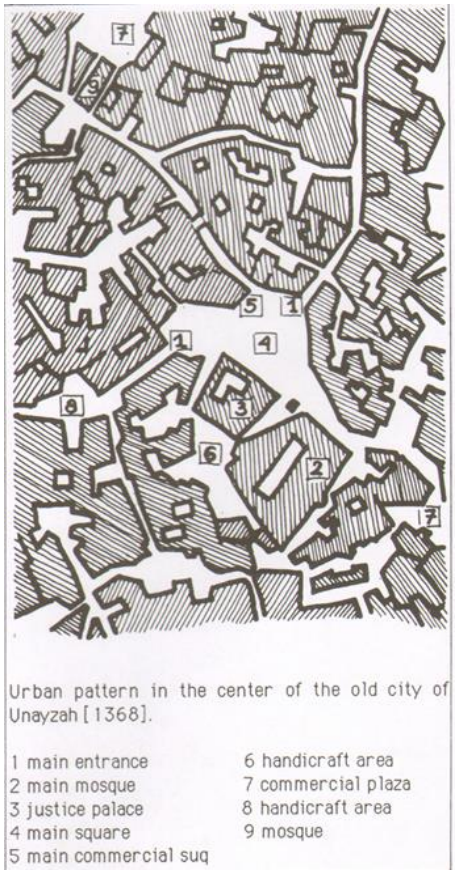


Figure 2.5: An example of urban layout of an Islamic city and its main components
(Germeraad 1990)

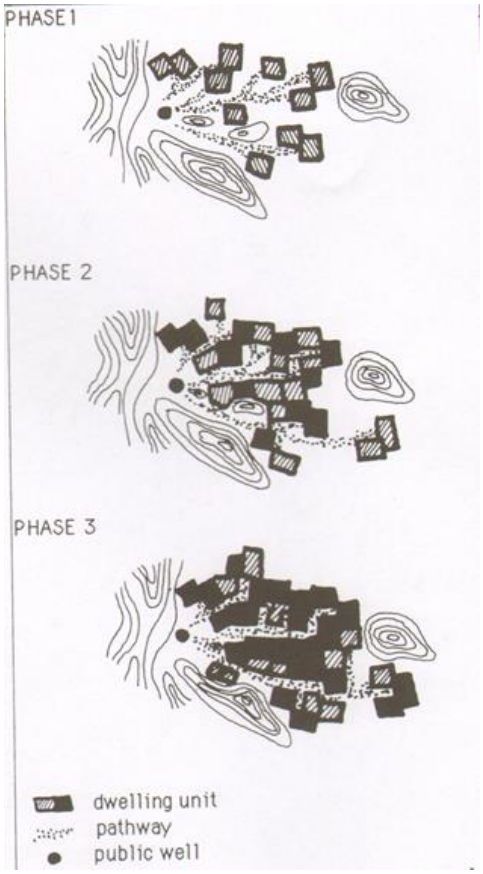


Figure 2.6: An example of the effect of users' responsibilities in reforming public spaces, in this case a pathway to public well
(Germeraad 1990)

Natural laws

Natural law involves the consideration of environmental issues such as topography; climate, water sources and agriculture resources in the built environment. It has defined much of the character of Islamic development. Since the Middle East is close to the Equator, the provision of the built environment is governed by designs to cope with hot weather conditions. A consideration of the local climate was a fundamental factor in the traditional concept of designing Islamic cities (Broadbent 1990). They were built at the scale of the pedestrian and, as such, were both dense and extremely complex (Kiet 2010). Weather conditions and topography were expressed in the adoption of concepts such as the courtyard, terrace, narrow covered streets and gardens (Saoud et al. 2014). This also affected the provision of public open spaces in the Islamic era, as they were provided in small pockets within the built environment.

There was a major concern around water in the Arabian region during the Islamic era, which included both the provision and use of water (Broadbent 1990). Water as an aesthetic feature of urban design was emphasised by the description of heaven in the Holy Qura'n. Water is described in various ways in the Qura'n, including rivers, running water and fountains, which inspired designers to use water channels in open spaces, particularly in gardens (Germeraad 1993). The built environment was highly dependent on natural resources, such as the water supply (Kiet 2010). Water features were presented in public open spaces as sabil or drinking water fountains, generally provided as waqf.

Social principles

Social organisation in Arab society was highly robust, which was a factor in urban development. It was based on social groupings of those sharing the same blood, ethnic origin and cultural perspectives. Examples of grouping in Maghreb cities included: Arabs, Moors, Jews and other groups, such as Andalusians, Turks, and Berbers. Development was aimed at responding to the social needs of such

groupings; these groups thus shaped the city as they grew in clusters, creating 'hay' or a neighbourhood for each group (Saoud et al. 2014). Hay was provided with small gate controlled by the owners' residential clusters. The residents shared an open space at the end of alleyway (Kiet 2010).

Function principle

Function and activity were the main drivers of creating space in Islamic cities. This was considered as general agreement of the existing users and those interested in utilising the open space (Germeraad 1990). This kind of growth produces usable components which are important, and not created simply because there is space available (Kiet 2010).

Since traditional urban design shaped was governed by Sharī'ah and responded to the users' needs, natural law, social and function principles, buildings were located so that they could develop and be assimilated into the existing urban fabric. In contrast to Western traditions, the exteriors of the buildings in Islamic towns are less dominant in comparison to their interiors (Kiet 2010). While in Western urban development land is subdivided to create smaller plots from a larger space, the built environment in traditional Islamic cities was created by an incremental and organic formation of subunits. Together, these made up the larger cellular parts that formed the structure of an Islamic city and influenced traditional types of public open spaces in the Middle East (Kiet 2010).

2.5.2 Traditional public open space typology and design concepts in the Middle East

Open spaces in Islamic cities are owned collectively by all Muslim users' (Akbar 1984). Germeraad (1990) stresses that streets (as an example of open space in traditional cities) were never the left-over spaces between buildings, instead they

were provided by users according to their usage. Therefore, growth shaped open spaces in Islamic cities. In towns planned by an authority (such as Baghdad), the main public open spaces were planned and shaped by the authority itself. However, this authority changed over time, resulting in the reformation of the city due to various mechanisms forming a means of growth (Akbar 1984). In some cases growth was like that of Tunis and Medina, where a new town was established near an old one. In others, like Al-Fustat and Cairo, two towns grew up separately, then connected to create one town. Expansion, however, was not generally planned by a central authority, but was rather an accretion of decisions from the mechanisms of users' responsibilities and waqf, which were at work in the decision-making process (Akbar 1984).

There is a different range of public open spaces in traditional Islamic cities in the Middle East as compared to Western spaces. All public spaces in a traditional Islamic city belonged to, and were controlled and owned by, the public and not by the authorities (Akbar 1984). The following sub-sections focus on the different types of open spaces found in traditional Middle Eastern cities differing from those of the West, as shown in Table 2.1, section 2.4.

Musalla

Musalla is large open space located just outside the city wall used as an area for prayer, mainly for the Islamic festival of Eid, twice a year (Hakim 1986). It still exists in Islamic cities, usually with a low boundary wall or stone curb with a mihrab 'niche' to indicate the direction to Mecca (Germeraad 1993). It is also used as a location for the gathering and preparation of the army for military purposes.

Courtyards

Courtyards are a section of residential buildings, which generally act as a transition area between the three types of space: private, semi-private and public. Due to the hot climate, courtyards are used extensively in Islamic urban design. They generally serve two purposes: (1) as a transition area to and from the other spaces, and (2) to cool the building by providing thermal protection (Germeraad 1990). Private courtyards in houses are beyond the scope of this study, as its focus is on public spaces. Hakim (1986) states that there are two types of public courtyard, these being:

- **Semi-public courtyard** found in a Madrasa or theological school, generally consisting of rooms centred around a courtyard surrounded by an arcade. It is used as dormitories, and it may also house a mausoleum.
- **Public courtyards** which appear in public buildings:
    - **Wekala:** a large craft and commercial building within the souq, or market area, which includes shops, workshops, warehouses and accommodation rooms.
    - **Funduk, khan or han:** a lodging building with a ground floor used as storage and housing for animals, with the upper floors used for residential purposes. Mainly used by foreign merchants who can display and sell their goods.
    - **Masjid**: most masajid *'mosques'* have large courtyards surrounded by arcades. Such arcades are used occasionally as an extension of the prayer hall when the main prayer hall is full.

Streets

The system governing the circulation of traffic was provided to ensure that the network corresponded with the character of the space and the social requirements of its users (Kiet 2010). However, over time a number of streets were transferred to thoroughfares in response to public requirements (Germeraad 1990). Streets were designed according to their purpose and classified according to their width, which

was generally measured in cubits[1] (Akbar 1984). The sequence of streets in Islamic cities established a clear hierarchy and punctuated changes through transition, which also represented changes in social behaviour and norms (Zeisel 1981: cited in Kiet 2010). There are four main types of streets:

First order thoroughfares: the main public path connecting the main parts of the network within the city (Hakim 1986). These were mainly integrated into a souq (Kiet 2010), and generally comprised sixty cubits (Akbar 1984). The network of public thoroughfares had four interchangeable terms according to their function and usage, these being: tarik Al-Muslimeen, tarik nafid, shari'a and nahj (Hakim 1986). These were built with different building materials in order to indicate their separate identities.

Second order thoroughfares: the second major public path, generally connecting the main quarters and routes (Hakim 1986) and normally comprising twenty cubits. Also known as sikah (Akbar 1984).

Third order thoroughfares: a lane of seven cubits. This could be classified as either public or semi-public, depending on the users (Hakim 1986). It accessed different areas within the quarters not serviced by second order thoroughfares (Hakim 1986). The private third order thoroughfares (known as zuqqaq) linked the centre of the city to the rahbah (public open space) (Akbar 1984).

Dead end streets: cul-de-sacs or local streets that are either planned by the owners of specific land as a solution to provide access, or which emerge over time as a result of incremental growth (Akbar 1984). These were corridors into residential neighbourhoods, and alleyways into clusters of private homes (Kiet 2010). These were generally considered by the surrounding residents as a privately owned street, meaning that any use could not cause harm to any

[1] A cubit = 0.46 metre

other residents, and any change must be subject to their collective approval. This could therefore be considered as a semi-private space (Akbar 1984).

Due to their location, some streets were used as a souq, classified into three categories (Hakim 1986), as follows:

- Streets located next to the jamia'a with a single storey structure, and therefore essentially a shopping area with covered pedestrian path.
- Streets with a linear continuous or semi-continuous souq, usually located along major thoroughfares. This souq consisted of a mixture of shops and residential units.
- Streets with a souq adjacent to both sides of the major city gates, which were probably an extension of the linear souq.

Gardens

Gardens were very popular within Muslim society. Everyone, from royalty and the privileged to ordinary people, had their own private gardens (Hakim 1986). Muslims drew inspiration for their garden designs from visualising images of paradise as described in the Holy Qur'an (Germeraad 1990). This inspired design features including running water, springs, fountains, fruit trees, fruit shrubs, trellises and seating areas. Designs were based less on theory and more on cultural diversity in deriving inspiration from images of paradise in the Qur'an to achieve gardens created for purposes of comfort, pleasure and prestige (Germeraad 1990; Al-Zahrani 1987). With gardens inspired by the Qur'an, they were also seen as perfect places for inhabitants to share and enjoy. Moreover, in order to imply perfection, designers paid additional emphasis to order and unity, which resulted in the use of geometric forms and rhythm, which remained essential elements of garden design (Germeraad 1990). Furthermore, Muslims had a facility of adopting other concepts of garden design into their own ideas (Otto-Dorn 1965: cited in Germeraad 1990). The expansion of Islam in the 9th and 11th centuries to India, Persia, Turkey, the Mongols of northern China

and the Berbers of West Africa, introduced new Muslims to the Middle East who possessed a different cultural understanding of the concept of pleasure garden design (Germeraad 1990). The garden had been the most preferred public open space by Middle Eastern people because of the comfortable atmosphere it creates within a hot climate, alongside its religious link to paradise. Germeraad (1990) argues that this concept of inspiration from the Qur'an remains a motivation for many designers in the region.

Fina

Fina is generally the location within a residential area used exclusively by the dwellers of the surrounding residential units (Hakim 1986), and can be part of a street or a communal courtyard. It is classed by scholars as a well-defined space and an observable element in the street bordering a small number of properties, used exclusively by the residents of those specific properties (Akbar 1984), and is thus considered a semi-private area. Fina did not have specific uses, this being decided by the users, including storage of possessions, herding cattle, sitting etc., so long as the user behaved according to the Prophet's directions of causing no harm or infringement of the rights of surrounding neighbours and retaining a right of way (Germeraad 1990).

Souq or Market

The souq, or market place, was located beside the jamia'a or masjid for the commercial activities of the town or city (Hakim 1986). The souq interconnected with other civic and educational buildings, and other religious and social structures. The jamia'a was the central structure of the city surrounded by the souq, in a circulation pattern (Kiet 2010). According to Bianca (2000), a market in a typical Islamic city consists of multifunctional core structures enveloping (or at least partially surrounding) the jamia'a by different layers of interconnected souq (Bianca

2000: cited in Kiet 2010). Shop units were generally spatially distributed in accordance to the nature of their goods. Sacred items, such as candles, incense, perfumes, booksellers and binders, were found in close proximity to the masjid (Marcais 1945: cited in Saoud et al. 2014). Whereas the rest of the goods were located at a further distance (Saoud et al. 2014). The souq was generally provided with different physical elements (such as different flooring and roofing materials) in order to distinguish between the different types, use and groupings of shops (Hakim 1986). There were two main public open spaces associated with a souq: maydan and sahah. These depended on the character of the space and the social requirements of the users.

1. Maydan

Maydan comprises the main open spaces at a city wide scale, generally found in front of the jamia'a or palace, such as the city of Samarra in Iraq (Akbar 1984). It was found within the dense, multifunctional core of the religious, commercial, civic, educational and social structure of an Islamic city (Kiet 2010). The maydan acted as the heart of a town and city; was used as a public open space for gathering, socialising, a location for selling as the extension of an occasional market, administration, arts and crafts (Saoud et al. 2014); and was considered as the main open space within the city. They were also found in relatively small spaces at the junction of thoroughfares (Germeraad 1990), and along streets to halt animals (Germeraad 1990). They were used for purposes of socialising, including celebrating Eid, weddings, funerals and occasional markets for festivals and Ramadhan (Hakim 1986).

2. Sahah

Sahah are usually located at a y-shaped junction of two streets dominated either by a market or neighbourhood facilities, such as a masjid, bakery or groceries (Hakim

1986). They are relatively small in size compared to maydan and often located in front of, and named after, a formal building (Hakim 1986). According to Hakim's study, a number of different terms for such spaces were used in different cities, including bat'ha, sahah and rahba. They were also found in suburban areas and used for weekly open markets (Hakim 1986). Al-Makrizi (1951) cited in Hakim 1986) defined sahah as *'a large place'* and described it as a flexible area enclosed by buildings (Al-Makrizi 1951: cited in Hakim 1986). In some cases it changed its identity as a location diminished or disappeared (Al-Makrizi 1951: cited in Hakim 1986). It could also be created by demolishing existing building(s) (Hakim 1986).

Design concepts from traditional open spaces

Before moving to the typology and design concepts of contemporary public open spaces, design concepts of traditional public open spaces in the Middle East can be summarised as the following:

1. Reflecting religious and social values, such as privacy.
2. Provided by both formal planning and users' responsibilities.
3. Responds to users' needs.
4. Considers the scale of pedestrians.
5. Provided within high density and complex urban fabrics.
6. Created for functions and activities.
7. Responds to climate.
8. Avoids causing olfactory and hearing discomfort.
9. Provided in an organic form of urban fabric and geometric patterns as an artistic decorative element in design.
10. Provides a water feature in an open space.

Although traditional concepts are associated with the Middle Eastern context in a specific era, they are to some extent similar to the contemporary concepts of liveable public open spaces found in the Western literature. As traditional concepts were developed in response to the social, economic and environmental issues of the Middle Eastern region, they provide extensive scope for learning about contemporary public open space.

2.5.3 Modern urban development concepts in the Middle East

Modern urban design concepts appeared in the mid-19th century during the colonial era, when a considerable development of Middle Eastern cities took place due to the establishment of governments, industrialisation and the on-set of the agricultural revolution (Germeraad 1990). The introduction of modern design concepts in the region was driven by a number of factors. Initially, these were developments constructed by the coloniser as a means of maintaining their colonies for political purposes (Kiet 2010). Colonisers applied Western traditions, which tended to replace the Islamic-social religious values, and society was unwillingly affected by the Western ways of living (Germeraad 1990). Design concepts were the physical representation of the nation's religious and social values, yet the implementation of Western design as an aspect of modernity contradicted traditional values. The general influence of Western civilisation in the Middle East was a turning point in the region's history, increasing Western hegemony (Elsheshtawy 2004). Western life-style dominated and characterised many Middle Eastern military, maritime, political, technological and economic aspects, which introduced new goods and developments into the region and increased the local standard of living (Germeraad 1990). As a result of colonisation, society had created new requirements, such as an increased demand for vehicular accessibility, and buildings excluding noise, dust, traffic and heat from living spaces (Germeraad 1990). Moreover, secularisation (or separating Sharīʻah from national jurisdiction) is the major consequence of social change, although to what degree varies in the countries of the region.

After gaining independence, a number of Arab Muslim countries struggled to re-define their own culture. Attempts to maintain Arab Muslim identity in the region increased after the establishment of the Arab League in 1960 (Germeraad 1990). Countries in the region took advantage of the wealth gained from oil and modern technology to establish the concept of national identity as a continuity of their history and culture. Historically, there was no conflict in using design concepts from other regions, with traditional Islamic cities utilising concepts from all different reigns (such as Greece and Roman) as previously mentioned in section 2.8.1. Concepts were restructured through the Islamic planning system component of Sharī'ah, natural laws, social principles and functional principles to conform to their needs at that particular time. This was not the case in the manner that Western ideas were adopted by Middle Eastern countries. The domination of decision-making by governments in the region reinforced a modern Western lifestyle as part of the development process, and developed new needs in society. Since Western countries were more advanced technologically, using modern technology meant using Western products, including design ideas. The process of modernisation is viewed in the Middle East as an implementation of cutting edge technologies, concepts and approaches from developed countries (Kiet 2010). The process of modernisation, and consequently Westernisation, emphasised Western ideas initiated during the colonial era and accelerated by economic and social factors (Germeraad 1990).

There are physical and non-physical factors influencing current urban design in Middle Eastern countries. Both need to be considered when providing a successful built environment (Zohadi 2012). Physical factors are environmental, ecological and geographical. Non-physical factors are traditions, religion, beliefs, and history. These simultaneously identify cultural identity and shape and the way individuals perceive both themselves and the world (Zohadi 2012). Middle Eastern cities have gradually realised urban design through becoming modern as a response to globalisation. In practice this means superimposing Western urban models on existing cities, replacing the negative concept of *'Western hegemony'* in urban design in Middle Eastern cities by *'globalisation'* as responding to global challenges (Elsheshtawy 2004). This is not a matter of *'traditional Islamic concepts'* against *'modern Western*

design concepts', it is rather the way in which Arabs in the Middle East have used modern knowledge to produce their contemporary urban designs, including those for public open spaces. Today, the Middle East considers implementing Western urban design as a developmental necessity in catching up with international development.

2.5.4 Contemporary public open spaces in Middle Eastern Cities and the introduction of square and plazas

Public open space has played an essential role in Islamic Middle Eastern cities (Hakim 1986). The understanding of public open spaces has recently been transformed in the region in terms of design concept and usage. As noted previously, public open spaces in Islamic countries were shaped by Islamic principles. Cities have been used for generations, but recent generations in Middle East have not experienced using traditional open spaces due to major changes in their urban design, and having lost the value of place-continuity in time, as discussed below in 2.6.1. However, Middle Eastern governments have imposed Western concepts on the built environment in cities, including green belts, natural and semi-natural reserves, playgrounds, managed beach areas, outdoor sport areas, waterfronts, streetscapes, squares and plazas, as part of the modernisation process. However, squares and plazas are key examples of Western spaces that have been transferred to the Middle East due to their influence in social life, economic contribution and environmental or physical improvement.

Western concepts of the square and the plaza have been imported, as previously discussed. Their concepts overlap, and in the West are not clearly distinguished. Thus, these two concepts are even less clear in the Middle East. Historically, various aspects close to the concept of a city's square or plaza were used in different Islamic cities, such as maydan, bat'ha, sahah and rahba. In order to nationalise the adopted concepts of *'squares'* and *'plazas'* in the region, they have been translated as *'maydan'* and *'sahah'*. Maydan has a wide range of meanings, such as field, square, domain, area, sphere, place, province and line. Sahah, on the other hand, means yard,

square, field, site and piazza. Due to the overlapping linguistic meanings and the fact that the concepts of square and plaza are imported, there is confusion in the use of these two terms in the Middle East. The introduction of the idea of the square and plaza neither represents the Western tradition, nor does it develop Middle Eastern traditional ideas. Those terms have been used in an exchangeable way. A clear example of this is Al-Sahah Al-Khadra in Tripoli, which changed after the revolution into Maydan Al-Shuhadaa. These spaces were introduced by an American consultant as part of their urban development. Unlike traditional city spaces, they were provided by the regional authorities, with the majority of the introduced examples of squares and plazas being unnecessary to meet user requirements and inappropriate to meet the requirements of the climate. We return to the suitability of squares and plazas as liveable public open spaces after the next section, which considers current thinking on liveable public open space in the Middle East in general.

2.6 The concept of liveable public open spaces in the Middle Eastern context

There is evidence in the literature of the rising need to provide sufficient public open spaces in the Middle East, that people can use and enjoy (Mandeli 2010). The need identified by various authors is to develop a new design approach for public open spaces in the region, based on Islamic traditions and the local environment, economic situation and social values, alongside modern social requirements. In recent years, there has been an increasing amount of literature concerning design concepts, which have provided successful contemporary public open spaces in the Middle East. Researchers have revealed a set of concepts that promote quality in public spaces and enhance their liveable usage. Such researchers include: Germeraad (1993); Abdel-Hadi et al., (2009); Mandeli (2010); Ravazzoli & Toso (2013); Shayya (2012); Salama (2012); and Fraser (2012).

These concepts are classified below into social, economic and environmental dimensions, as defined earlier in section 2.3 with concepts from Western literature.

However, there is much less literature and information in this area when it comes to the Middle East than there is in the West, which is reflected in the content of this section. The majority of published research attempts to study the role of public open space design in achieving the culture and setting of the Arab-Muslim region in the Middle East. These studies have summarised a number of urban design criteria that need to be considered in order to provide a suitable contemporary approach for public open spaces in Middle Eastern cities.

2.6.1 Social dimension

As discussed in section 2.3.1, the social dimension is concerned with the way users interact with the space. Contemporary public open spaces disregard the social factor in their designs for public open spaces in the Middle East (Germeraad 1990). Abdel-Hadi et al. (2009) state that socio-cultural senses of belonging, security, privacy and safety are intermediary variables in the provision of usable space, while Islamic values and guidelines are major factors in providing liveable public open spaces, due to their embedded influence on people's lives and beliefs. Therefore, these values need to be integrated and considered in the design of new urban spaces (Zohadi 2012).

Consideration of social ethos

Public open spaces in the Middle East have become prestigious projects of beautification, with an emphasis on being visually pleasing, rather than liveable places, which satisfy the requirements of the users (Akbar 1984). Under the flag of modernity, public open spaces in the Middle East appear more as a product of an urban design process controlled by the economy and Western concepts, rather than a mixture of historical and modern achievement (Aga Khan Award for Architectural, seminar proceedings 1978-1986: cited in Germeraad 1990). Although adopting Western concepts emphasises economic wealth, it neglects the ethical and the aesthetic values strongly rooted in the user culture. Consequently, these spaces have

been abandoned. Germeraad (1993) concluded that the causes for the emphasis on the man-made in urban design stem from the adoption of the form of Western concepts, rather than the needs of local users and their social and religious values. Consideration of the cultural ethos needs to be approached with sensitivity, because it is not a fixed issue and it has been dramatically transformed by modernity. It is also not equivalent in all Middle Eastern countries, as it even differs between towns and villages within the same country.

Middle Eastern society consists of a mixture of different ethnicities, languages, customs, traditions and belief systems. Despite the fact that there has been a large percentage of migrants living in Arab countries for decades, their cultural identity has been neglected in the current planning system (Zohadi 2012). Public spaces in GCC cities (see section 4.5) have failed to draw users from all community groups and ethnicities (Salama 2012). Public open spaces lack a provision of suitable conditions that contribute to the achievement of diversity (Salama 2012). Zohadi stressed that there is a requirement to consider that the unique characteristics of all groups within society are taken into account and symbolically represented in the built environment (Zohadi 2012).

Spatial identity

The analysis of spatial identity has provided evidence that identity factors (such as nationalism and religion) appear to be more deeply embedded in humans than political and economic ideologies or systems (Van Boven and Van Loon 1989: cited in Germeraad 1993). Human beings ascribe meaning to any space, and through cultural and social meanings, they re-think its physicality. This socially created meaning in public open spaces has developed as a *'space of belonging'*, a *'space of cultural sharing'* and strengthens the *'sense of community'*, which emphasises space liveability. This has been demonstrated in Tahir square (among others) in Egypt during the January 2011 Revolution (Ravazzoli & Toso 2013). Moreover, this cultural practice adds a new spatial social representational symbolism, which is later

associated with national history, as in the case of Tahrir Square (Ravazzoli & Toso 2013).

Value of place-continuity in time

The value of place-continuity in time is the value that time adds to any space in which it creates meaning to the user and promotes liveability. Contemporary public open spaces in Middle Eastern countries are no longer based on Islamic and regional traditions (Germeraad 1990). The value of place-continuity in time, in connection with the past, remains unrecognised, due to the fundamental configuration of buildings in the urban core, which were replaced by modern Western designs as part of the modernisation process (Germeraad 1990). The past of the urban physical environment is reshaped by Western influence (Germeraad 1990). However, contemporary public space must include contemporary forms of open space design in which Islamic ideals are expressed in both its use and physical structure. Holod (1986) states that for successful implementation of a modern design concept in the Middle East, proper consideration of social-religious expectations drawn from the Qur'an and Sunnah is needed. The inherited tradition in this context is therefore considered as the reference frame, but seen through the *'eye-glasses of the future'* (Kuban 1978).

Users' needs

Liveable public open spaces are those which meet the requirements of its users. Although this concept is fundamental in traditional Islamic open spaces, it is generally disregarded in contemporary spaces in the Middle East (Aljabri and Smith 2013b). Research conducted in Saudi Arabia has demonstrated that public open spaces do not respond to those for whom they are designed, and are without any socio-cultural value, such as privacy and territoriality (Al-Abdullah 1998). For example, in public open spaces in Dammam, the grassy open flat area is never used

in the manner for which it was designed, with cars, chairs and personal belongings used to provide vertical barriers in order to create private spaces for picnicking (Al-Abdullah 1998).

Tahrir Square in Egypt after January 2011 is a further example of the considerable gap between the ways planners design a public space, and its use in practice. During the protests, users redesigned the square into a liveable space, informally adding structures such as cafes, tea stands and food stalls. Shops were extended outside their premises and there were temporary street vendors, alongside informal use of parking lots (Ravazzoli & Toso 2013). Within the space of three months, protestors in Cairo constructed the Al-Mi'timdija Exit, which is a 45-mile-long ramp that connects directly with the Ring Road. The New York Times (2013) stated: '*In the absence of functioning government, they built ramps from dirt, sand and trash. Then they invited the police to open a kiosk at the interchange*' (Kimmelman 2013 p. A1: cited in Ravazzoli & Toso 2013). In this sense, new interventions in the planning of Middle Eastern cities need to be grounded in an alternative conception of legality that considers users of the space, rather than on the recognised definition of legality (Ravazzoli & Toso 2013).

Social engagement

Providing social engagement which promotes enjoyable discoveries, public art and physical challenges for all community groups, is important in the promotion of liveable space (Abdel-Hadi et al. 2009). People are attracted to spaces that provide alternative engagement and that respond to social needs (Shayya 2012). People in the Middle East no longer use public open spaces as part of their daily activities, and therefore, creating programmed events and activities both during the day and in the evenings would help users in developing new experiences (Abdel-Hadi et al. 2009).

Meeting space

Research conducted in different case studies in Cairo resulted in a conclusion that users prefer spaces that act as an area to meet friends, make family outings, socialise with others, and eat and drink (Abdel-Hadi et al. 2009). Shayya (2012) found in his three case studies in Beirut, that people enjoy most of their socialising, free time and political and cultural deliberations in areas of consumption, such as cafés and restaurants, on the street, in open spaces or inside shopping malls. In order to promote liveability, a public open space needs to provide opportunities for users to meet and socialise.

Personal distance

As noted earlier, personal distance varies between different cultures. In the Middle East, personal distance is influenced by the culture of gender segregation. While it ranges between 1.26- 3.8 metres within the same gender, it widens up to1.69- 6.53 meters with those from opposite genders (Farah 2001). Such cultural issues need to be considered carefully when designing public open spaces, in order to create a comfortable layout for users.

Safety

Safety from anti-social behaviour and vehicles is one of the main elements of a good open space, not only in the Middle East but as a global standard. Perceived problems of teenagers and the unemployed hanging around have been identified as major concerns from users, and a factor keeping them from enjoying some public open spaces in Cairo (Abdel-Hadi et al. 2009). Safety is essential in order to provide a liveable open space.

2.6.2 Economic dimension

Economic factors act as a connection between urban design and social practices. They help shape a contextually adapted understanding of places. Therefore, providing a public open space with the potential for mixed use is a fundamental factor in enhancing its liveability (Shayya 2012).

Mixed use space

Multi-use gives a reason to congregate and socialise. In a study undertaken in Cairo, users viewed shopping as the main factor of liveable space (Abdel-Hadi et al. 2009). There is a need to implement this concept in order to enhance the liveability of open spaces, and thus meet users' needs (Shayya 2012). Moreover, in his study on three open spaces in Beirut, Shayya (2012) concluded that the ideal example of liveable space is not one that has simply adopted Western models, but rather one that has commercial activities which have always have been rooted in the region's traditions. Although commercial activities were used in traditional spaces in the Middle East, they are not usually well provided for in contemporary public open spaces (Shayya 2012) and (Aljabri and Smith 2013b).

Place management

The majority of spaces in the region could easily decrease in quality, because their long-term funding management is not considered, or due to the transferring of their budgets to fund other projects (Mandeli 2010). Mandeli 2010 attempts to address the Western concept on public open space management in Middle Eastern cities, taking Jeddah as a case study. Research has revealed that using commercial and leisure activities in promoting long-term management plans is highly effective when it comes to the continuity of liveability in a space (Mandeli 2010).

Food and drink

The consumption of food and drink is a basic human need that gives users an excuse to both visit and remain in a public space. Cafes, tea stands, food stalls, and temporary street vendors are all considered major attractions for users, and contribute to creating a liveable open space in the region (Ravazzoli & Toso 2013).

2.6.3 Environmental/physical dimension

As discussed in section 2.3.3, the environmental/physical dimension consists of the overall appearance and quality of the built environment of the space. It is concerned with the design concepts that make its use appear inviting. A number of concepts relating to the environmental dimension have been drawn from Middle Eastern literature, as discussed below.

Car free or car management space

Liveable open spaces need to be designed for pedestrians, and therefore be less polluted and less noisy. Modern design concepts tend to come from cities where accessibility is mainly based on vehicular movement (Germeraad 1990). Due to the domination of roads and issues of car parking, public open spaces tend to make a small and non-positive contribution to the urban fabric (Taylor 2012). Most have been built as a *'space in-between buildings'*, and are largely identified by streets. The lack of public space has been caused mainly by giving priority to traffic, privatisation and budget shortages (Ravazzoli & Toso 2013). Ravazzoli & Toso (2013) claim that this could eventually cause social segregation (Ravazzoli & Toso 2013). Bianca (1988) predicted that this process could eventually cause over-development of enclosed shopping malls on the outskirts of cities, which would gradually isolate the historical buildings and lead to a lack of understanding when it came to preservation (Germeraad 1990). Public open space is hence often deprived of its social and

commercial role (Bianca 1988: cited in Germeraad 1990). This creates disorientation and less comfortable open spaces. Shayya (2012) disagreed with Sorkin's description of the end of public space in light of the emergence of a mall culture: he believes that public spaces still have potential in Middle Eastern countries, as they demonstrate a vibrant political sphere, in addition to retail and leisure activity, as is the case of Beirut.

Micro- Climate conditions

Climatic and geographical factors have a great effect on types of urban design and lifestyles and are highly influential when it comes to providing liveable spaces in the Middle East. Broadbent (1990) states that climate considerations are deeply embedded in the Arabian tradition and were assimilated by Islam (Broadbent 1990). Nevertheless, the recent design of open spaces in the region has ignored the climate and there is absence of clear spatially defined open spaces (Germeraad 1990), (Kiet 2010) and (Aljabri and Smith 2013a).

The ideal design concepts for creating thermal comfort for users in public spaces include shade and smallness of scale, which encourage not only walking, but for users to remain for a considerable length of time. Providing shaded areas with protected shelter from the sun is helpful in creating a comfort zone within the space. In addition, using different types of greenery and plants assists in cooling and circulating the air (Hassaan & Mahmoud 2011). Researchers found that trees provided in regular repetition have a positive impact on microclimate during the day and reduce the penetration of solar radiation on surfaces, due to the partially shaded areas (Hassaan & Mahmoud 2011). The Estidama Pearl Rating System in Abu Dhabi is a promising example of designing open spaces with consideration for the climate (Fraser 2012). The success of such a project would introduce a good contemporary example of climate consideration in public open spaces. Materials also play a fundamental role in achieving thermal comfort. There is evidence of the effect of using high albedo (i.e. low heat absorption) materials in cooling down the atmosphere (Fraser 2012).

Good design in water elements, alongside the greenery, can play a dramatic contribution towards providing a pleasant thermal environment for users (Abdel-Hadi et al. 2009).

In a major study on public open spaces in Egypt, Hassan & Mahmoud (2011) set out a number of fundamental recommendations to assess the provision of landscape elements in creating human comfort in hot arid regions. These recommendations include:

1. Shade should be provided close to a water feature, so as to combine the effects of shading and evaporative cooling;
2. In the case of parks, deciduous trees are suggested in order to provide shade in summer and permit solar radiation in winter;
3. Light structures (such as pergolas and kiosks) are suggested, as they provide shade and their design can control the angle and direction of the solar radiation according to careful study of the solar chart;
4. Surface albedo is a crucial consideration in designing for an open space. Cool materials on large surfaces are highly recommended. Asphalt and dark finishings must be avoided in order to reduce the urban heat island effect; and
5. Control of wind is an essential factor in landscape design. Human beings are usually exposed to wind in outdoor spaces where there are few barriers. The design of tree groupings and various layers of vegetation can play a major role in maintaining higher levels of satisfaction in outdoor spaces in hot and arid environments (Hassaan & Mahmoud 2011).

Accessibility

Good access facilitates a liveable square (Ravazzoli & Toso 2013). Integrated transport systems promote different modes of travel, such as bus, metro, walking and cycling. A successful transportation system encourages use of open spaces. There

have been a small number of attempts to achieve this, such as Dubai's metro and the adoption of these concepts in Abu Dhabi strategies to apply a coherent pedestrian and cycle network across the entire Emirate. Moreover, in Qatar, the adaption of an integrated multi-trip transport network is being proposed as essential for tourists to the 2022 World Cup (Fraser 2012). However, implementing such concepts is highly challenging in the Middle East region, due to its thermal conditions. The hot weather in the region during midday in the majority of the year is the barrier against walking and cycling. In addition, pedestrians suffer from the poor continuity and condition of footpaths (Taylor 2012).

Visual complexity

Visual complexity comprises an immediate attractiveness that invites use of a space. In the study of Abdel-Hadi et al. (2009), users stressed that the visual beauty of the built environment and natural spectacles are one of its main attractions. A high quality of frontages and the spatial aspect is also one of the factors encouraging use of the space, including well designed street furniture, seating spaces, lighting, signage and landscape (Abdel-Hadi et al. 2009).

Islamic patterns/Geometry

Authors such as Jairazbhoy (1964), Sardar (1985) and Fathy (1983), argue that geometry is a key Islamic physical ordering principle for public open spaces. Nevertheless, Akbar (1984) claimed that the Islamic concept of designing open spaces using geometry is a hypothetical concept developed by Muslims scholars, and for him does not have sufficient evidence from Islamic traditional settlements. Other scholars besides Akbar (1984), such as Haider (1986), Grabar (1983) and Germerraad (1990), stress that geometry has not been a design principle for public open spaces in the Islamic world, but it is certainly an artistic means of symbolising specific basic Islamic values. Geometry was used intensively as an artistic decorative

element for pavements, walls and fountains. As authorities began to recognise the loss of identity due to the modernisation process, they began searching for national identity using a design language to reinforce such identity, rather than the meaning of the local design ethos (Germeraad 1990). Islamic geometric patterns have also been used as one of the design principles in contemporary public open spaces in the region (Fraser 2012). Governments in the region have continued to impose Western design concepts, but this time incorporating local design features in an attempt to maintain the local identity, which tends to use geometric and architectural elements (for example arches and domes). The authorities have not implemented the core traditional concepts in considering social, economic and environmental/physical issues in providing the built environment.

Water features

Due to the region's dry conditions, water is a valuable element, particularly in the Arabian Peninsula. It is therefore used in contemporary urban design as an element that expresses wealth (Germeraad 1990).

Reflections on the liveability concept in the Middle East

Development in Middle Eastern countries needs to be greatly improved to consider both the region's environment and culture. Modernisation has negatively affected contemporary public open spaces in the Middle East, due to their contradiction with the ethos of their social context, and lack of consideration for their environment (Germeraad 1990). Adopting Western concepts in the Middle East has been superficial, as it has disregarded both the local social environmental and economic factors.

Implementing modern planning concepts has created alienation between public open spaces and their users. Designers and planners need to evaluate the new in the

context of the existing in order, so as to provide successful public open space design in the region. According to Germeraad (1990) a well-designed open space in Arab-Muslim countries must integrate contemporary forms of Islamic life within the urban environment, based upon the Islamic conception of life in which traditions such as privacy, the institution of waqf and user responsibility together with ethical and aesthetical considerations, play a major role (Germeraad 1990). Therefore, contemporary public spaces have also to apply contemporary forms of design, in which Islamic ideals are expressed both in their use and physical structure.

2.7 Squares and plazas as a focus for exploring liveability of contemporary public open spaces in the Middle East

'A square or plaza is both an area framed by buildings and an area designed to exhibit its buildings to the greatest advantage' (Moughtin 2003 p.87).

Town squares, civic centres, city squares, urban squares, market squares, public squares, plaza, piazza, place and town greens are all forms of open space in urban areas (Talviste 2010). A city-focused approach to places emerged in Greek and Roman times, resulting in the archetypal public spaces that are known today as: piazzas (Italian), platz (German), place (French), plaza (Spanish), or square (English) (Neal 2010).

The square is considered one of the most ancient forms of open space; consequently it is usually found in the heart of traditional towns or cities (Woolley 2003). Corbett (2004) considered squares to be the most intensively used public open spaces (Corbett 2004). Plaza is the original Spanish word for a square, and it was at the centre of community life. It is a term frequently used in literature, and there is general consensus that it refers to a significant large urban space designed for one purpose or another (Woolley 2003). It is usually associated with three main elements: the cathedral, the administrative centre, which might lead to a governor's palace, and

a law court. It could also serve as a military parade ground. Both the terms 'square' and 'plaza' are used to refer to spaces with hard-landscaping in predominantly public open areas. Despite variation between them, most of these spaces share similar basic features: a large, open, and paved space, anchored at the centre by a monument, fountain, or other architectural feature. Moreover, they are often located at the centre of the town, often in front of buildings with public significance, such as a courthouse or city hall, and enclosed by other structures that mark their edges (Neal 2010). The characteristics of a square or plaza not only depend on the design of the space itself, but are also affected by the heights of any enclosing buildings, and the activities on their ground floors (Lang 2005).

The concept of the plaza was introduced to America through Spanish colonisation (Woolley 2003). It was then adopted by US city planners. Since 1961, in New York, developers who provided an open space were given bonuses of ten square feet of commercial space, over and above the amount usually allowed by zoning, for each square foot of plaza. Consequently, this created plazas in association with apartments and office buildings. The idea of a *'plaza'* was reused in new urban design criteria in the USA and was exported worldwide, through this American influence. Henceforward, square and plazas were understood as terms for different open spaces.

Today, European squares have become liveable privileged spaces, which attract tourist beside their commercial and leisure function. Some squares in Europe have achieved fame, not only nationally but worldwide (see Appendix A). However, providing liveable square or plaza requires deep understanding of public domain and liveability concepts. Different researchers have viewed liveability from different angles of urban design. Reviewing the key literature in the research area resulted in classifying liveability concepts into a threefold dimension, including social, economic and environmental. Implementing these concepts promoted spaces into liveable open places. However, these concepts have been drawn from research developed in the West.

The colonisation, modernisation, westernisation and globalisation movements in Middle Eastern countries have created large-scale transformation and produced new

contemporary societies and cities. The new societies combine religious, social and traditional values with modern lifestyles. Introducing a Western version of open spaces, such as squares and plazas, to Middle Eastern countries does not necessarily ensure liveability in them due to social, economic and environmental differences. Nevertheless, liveability in squares and plazas in the Middle East must examine both Western and Middle Eastern social, economic and environmental dimensions through in-depth study of examples from the region. It is also necessary to evaluate liveability by assessing the implementation of dimensions in the planning process for public open spaces planning. The following sections will examine to what extent the planning system promotes liveability in the Western and the Middle East contexts.

2.8 Western planning processes in providing liveable public open spaces

This section discusses an example of a planning and urban design approach that has developed around providing liveable public open spaces in the West – that of the UK. There is a new global trend in planning processes towards providing extra integrative, holistic institutional frameworks, which has led to a shift towards integrated planning (Illsley et al. 2010). Recently, there has been considerable concern around the changing nature of governance, and the extent to which planning systems can deal with current worldwide challenges, i.e. sustainable urbanisation (Hajer & Wagehaar 2003; Albrechts 2006; Vigar 2009: cited in Illsley et al. 2010).

Open spaces in the West are directly connected to the issue of urbanisation and therefore one of the dominant planning topics (Koomen et al. 2008). A study was conducted by Carmona et al. (2008) on open spaces in eleven cities, based in developed countries chosen due to their skills in articulating their open space policies. They examined plans that varied in their spatial scale and level of detail, and found that they all presented the function and value of open space planning. Moreover, their planning system was clearly instrumental in securing adequate provision and protection of public open space in their cities (Carmona et al. 2008).

However, Western countries implement different planning systems. Therefore, this research addresses Western systems in general and focuses on the British system, as this is the one that has been adopted in Oman, and is the case study of this research (as discussed in Chapter 4, below).

2.8.1 Development of planning practice in the UK

In Britain in the nineteenth century, poor sanitary conditions and the prevalence of disease motivated the British government to commission Edwin Chadwick to deliver a new investigation of sanitation. His report for the Poor Law Board of 1842 inspired the delivery of the Public Health Act of 1848, and the establishment of the regulations regarding drainage and sanitary facilities. This was followed by 1875 Act, which was concerned with the quality of the built environment (Broadbent 1990). Later, Sitte's publication of *City Planning 'According to Artistic Principles'* (1889) had a great influence on urban squares, plazas and streets in European cities (Levy 2008). According to Bentley (1976), in the 1970s professional planners began to analyse the process of developing the built environment in order to improve the quality of urban design (Carmona et al. 2003).

The next notable city planning approach was '*The City Beautiful'* movement in America in the 1890s. In the early 1900s, Europe experienced a number of planning initiatives, including Howard's Garden City and Le Corbusier's Ville Radieuse (Broadbent 1990). Le Corbusier then based his vision in planning the city skyscrapers of New York, a planning concept based on transport. According to Le Corbusier *'a city made for speed is made for success'* (Le Corbusier 1987 p.179). He proposed that public facilities (such as restaurants, cafés, theatres etc.) be located on terraces. Zoning was developed as post-Corbusean planning. In his planning concept, cars and skyscrapers were given priority. Public open spaces were to move from being at the heart of the city and elevated to the terraces of buildings. His perspective captured the imagination of architects and planners worldwide, and his concepts spread all over the world.

The 1990s saw the beginning of understanding planning as political decision-making process. This is where values such as constructed and contested social information are pertinent to planning (Jenkins et al. 2007). This creates negotiation and dialogue as primarily tools for participatory approaches to planning (Jenkins et al. 2007). This led to the provision of a list of urban design principles that in some cases created conflict between planners and architects in the mid-1990s (Morris 1994). By this time, a new trend was emerging in Britain, in an attempt to bring together urban design and plans in the planning system. The idea of urban design at the strategic level was introduced to the British style of traditional town planning from America. In the mid-1990s, urban design become one of main concerns of the UK planning system, leading to the initiation of a number of new agendas in policy and control (Punter 2007). Those new trends in planning (which led to a sense of protection of space due to environmental concerns) are a factor in sustainable development and provide a strategic view of urban design as having a role in forming the city, alongside increasing concerns over the character of urban regeneration.

2.8.2 Development of urban design in the UK

In 1909 the term *'civic design'* was established in the UK, when Liverpool University opened a course in civic design (Cuthbert 2007). In 1970, this term was considered outdated, due to its connection to the civic centre, which was viewed as too restrictive (Cuthbert 2007). Kevin Lynch favoured the use of the term *'city design'*, believing it to be a more comprehensive term (Cuthbert 2007). City design as a concept had a considerable influence over several generations of architects and planners. It focuses on the spatial design and pattern of temporary human activity and its physical settings, taking in to account its socio-economic and psychological effects. The form of the city is seen to play an active role in creating human environments (Bannerjee & Southworth 2009), but the word 'city' raised issues when it came to understanding the concept, because the word *'city'* does not precisely represent either the concrete meaning, or the scale of the urban (Cuthbert 2007). The term *'urban design'* was coined in the late 1950s in North America

(Carmona et al. 2003). The emergence of the term was reinforced in the United States by Harvard University through the establishment of an urban design programme in 1960 (Cuthbert 2007). Henceforth, urban design became a popular term and its use became well established. Between 1980 and 1990, a new urban design movement emerged following the growth in awareness of its importance in society (Morris, 1994). Through raising concerns of social values, urban design has become a significant issue within the UK planning system (Carmona et al. 2003).

Urban design is viewed from different perspectives around the world. It tends to have uncertain boundaries in the West, however, achieving high-quality urban design is an essential target of the legislative planning system in the UK (Rowley 1998). It is an interdisciplinary practice (Moudon 2003), acting as a joined up activity, deeply concerned with improving the urban environment (Carmona et al. 2003). There has been a significant increase in awareness of good urban design in recent decades (Madanipour 1996), with a clear division between urban design and planning in the 1970s. Urban design was taken over by architects and designers who had weaknesses in social and economic areas (Morris 1994), whereas planning received greater attention. Planning was taken over by geographers, economists, social scientists and town planners who did not possess a three dimensional awareness (Morris 1994). British urban design focused on designing pedestrian streets, urban spaces and town centres, but was not involved in larger scale, or redevelopment, schemes. The British urban designer was forced to design on a small scale between building and spaces already produced to ensure the functionality of towns (Morris 1994). However, urban design in the UK has since developed into a broader practice.

2.8.3 Current planning and urban design practices in the UK

Although planning and urban design still form different practices in the UK, they overlap and together shape a comprehensive planning system. Currently planning is concerned with city structures, development process and decay, and the study of the geographic, social, political, and economic issues that have caused its formation

(Krieger 2009). However, planning should not attempt to create the wholeness of the city (Alexander et al. 1987), as it is more concerned with the spatial strategy of a broad area, whereas urban design functions on an intermediate scale between architecture as individual buildings, and planning as settlement (Carmona et al. 2003). Urban design is not simply the creation of a built environment or an integrated activity: it is rather the production of places for people concerned with social, environmental and economic values (Carmona et al. 2003; Urban Design Group 2013). It is a process and a product of creating successful places, including designing the buildings, spaces and landscapes, and creating the procedures in which to promote good quality spaces (Madanipour 1996). Carmona describes it as *'the process of making better places for people than would otherwise be produced'* (Carmona et al. 2003 p.3). Thus, both the practices of planning and urban design act as essential twofold factors in producing successful spaces. According to this research discipline, planning and urban design are concerned with a system of promoting quality in providing and managing public open spaces, and which enhances the quality of both their spatial and social life: it is the art of creating places.

UK planning practice is by nature discrete, and so provides for flexibility which allows the planning system to meet different needs, and to resolve continually changing issues (Cullingworth & Nadin 2006). However, it could be argued that such discretion of flexibility in the planning system creates a measure of uncertainty, as its documents restrict predominantly aesthetic concerns and subjective design issues. Planning and urban design in the UK have developed from overlapping to large degree, to the development of a large gap between them. To Madanipour (1996), there is a requirement to provide a socio-spatial approach at town planning level, in order to stress social and spatial relationships in close connection to each other, in order to fulfil the gap between planning and urban design (Madanipour 1996).

The planning system in the UK differs from other European and US systems in its management through a framework of constitutionally protected rights, i.e. it embodies caution and the significance of history and culture (Cullingworth & Nadin

2006). The system is supported by planning policies influenced by public, political and market forces. The system is based on three key elements: development planning, development control or management, and enforcement (see Appendix B). Due to the variation within the UK, the research now focuses on practice in Scotland as an example.

2.8.4 The planning system in Scotland

The Scottish government has autonomy over planning issues, and has developed a stronger strategic approach in comparison with the English and other European systems (Newman & Thornley 1996). In Scotland, the planning system has been developed at two levels: national and local. Planning at a national level is forward planning, covering the overall planning for the country, whereas, at a local level it is a good deal more focussed on detailed local planning. This section discusses assuring liveability in public open spaces in both planning levels of the Scottish planning system.

National level

In 2010, The Scottish Government and a range of stakeholders collaborated in improving the efficiency of Scotland's planning system, ensuring that planning enhanced the sustainability of the economy (Scottish Government 2010). There are three types of plan in this category: Scottish Planning Policy (SPP); National Planning Framework (NPF); and Circulars. Scottish Planning Policy (SPP) is the Scottish Government policy statement of its national plans concerning the use of significant areas of land, and is a set of policies for Scotland in general. The National Planning Framework (NPF) is the Scottish Government's strategy for Scotland's long-term spatial development. It has been created in order to control development at the strategic level, and operates between SPP and local level planning. It is also established to justify the authorities' policies, the general strategy and land use, to the

public. Moreover, it states national policies in terms of planning for land use, and provides the framework for the local plan to control development at a local level. Circulars contain the Scottish Government's policy on the implementation of legislation or procedures (Scottish Government 2010).

Providing liveability in Scotland at a national level

Carmona et al. (2008) found that in best practice in developed countries, open space policy hierarchy began at a high level (such as the national or state plan) and worked its way down to the lower levels of government, and sometimes vice versa in a two-way process (Carmona et al. 2008). At a national level in Scottish planning, public open space is identified as spaces with social, economic and environmental value. The Scottish strategic plan has emphasised the provision and quality of public open space, and provided strategies for maintaining and promoted good practice for such space in Scottish cities (Scottish Government 2010).

In cities within the context of a strong national policy, the open space policy is generally established through national statutory planning regimes and links back to spatial planning policies (Carmona et al. 2008). In Scottish practice, an agreement must be made between the local authority and its strategic partners on the strategy development and implementation process. It needs to clarify the strategic framework and a vision outlining the partners' aims for open spaces in terms of distribution, quality and the functions they are expected to fulfil. This sets the policy, strategic and practical contexts within which the open space resource is audited, and quality and fitness for purpose are assessed and strategic decisions taken (Scottish Government 2010).

Participatory planning is a vague term, one which can cover differing degrees of involvement from different groups of the population. Cities face different difficulties in involving their communities in the process of providing public open spaces. However, involving communities in the provision and management process of public

open spaces is essential in providing liveable spaces. It does not only help to improve the quality of a public open space, but rather helps to raise users' awareness of their surroundings and establish better lines of communication between providers and the community. Community involvement can sometimes fail to include all groups in the community (such as minority ethnic groups) in decision making, lead to it being demand-led rather than planned (Carmona et al. 2008). Feminist writers, such as Richter (1982), claim that cities have been provided and organised by men throughout history. She states that women, children, the working classes and the poor have been marginalised in 19th century planning and urban design in the creation of public spaces (Richter 1982 cited in: Madanipour 1996).

The Open Space Strategy in Scottish planning allows local authorities and their strategic partners to provide a structured, accurate analysis of open space supply, along with its type, accessibility, quantity, and quality. Public spaces that exhibit these characteristics are likely to be of high quality, and to be safe, to contribute to the surrounding environment, and therefore well used. Architects, planners, landscape architects and urban designers are encouraged by the system to achieve this. Communities need, and desire, effective public open spaces. Such places need to be inspired by, and attract the interest of, all sections of the community, including: ethnic minorities; those who are vulnerable; women; children; older people; and those with disabilities. The planning process plays an important role in the wider community's aspirations towards open space strategies. A public participation and consultation process is used to assist the strategy to draw out the priorities and needs of the community in relation to their space. By increasing the freedoms and flexibilities of community to assist in the development of open spaces, the quality of such spaces are increased (Carmona et al. 2004).

Providing liveable open space is a collaborative process. In order to enable all stakeholders to collaborate in the provision process, a strategic vision for open spaces must be shared between city government departments, residents and politicians, along with more visible connections to other policy frameworks and responsibilities (Carmona et al. 2008). Open space strategy in Scottish planning offers a useful

means of co-ordinating the policies of the different council departments with responsibilities for open space, and of focusing connections and partnership working between relevant public, private and community interests (Scottish Government 2010).

Place-making is an essential concept that meets the economic strategies of planning at a minimum of two levels, these being local and regional. At the regional level, public open space becomes a unit responding to global economic pressure. At the local neighbourhood level, the public open space approach is to target resources focusing on areas of industrial decline and poor neighbourhoods, the casualties of economic restructuring (Madanipour 2007). A comprehensive monitoring of the performance of management systems has made a considerable effort to develop the criteria to feed into the system (Carmona et al. 2008). A clearly defined and properly resourced maintenance plan provides the tools for organising, coordinating and delivering maintenance routines. Such a plan offers connections between daily maintenance routines and long-term management. It also assists in structuring programmes, better use of resources, quality control and policy priorities.

The planning system in Scotland has developed *'Designing Places'*, a Policy Statement setting out the Scottish Government's aspirations for higher design standards and which re-emphasises the fact that design is a material consideration in determining planning applications. According to the Scottish Executive (2008), the duty of designers, planners and managers is to enhance the quality of open space environments and provide on-going, attractive places of which society can be proud. In order to achieve this, public spaces are required to be well designed with good connections to the adjacent buildings already in existence, their uses, and the movement among them (Scottish Government 2008). Providers of spaces must create an environment that can be accessed by all community groups, particularly the elderly, parents with pushchairs and the disabled (Scottish Government 2008). Places appropriate for those with special needs can be certain of being suitable for other groups within society. Excellent management and maintenance of space design are key factors in high quality open spaces (Scottish Government 2008).

Local level: Local plan

The Local Development Plan is an adopted development strategic plan that sets out strategic policies for councils. Connecting local public open space agendas to wider national policies and priorities helps to enhance a significant raising of the profile of the quality of public open spaces (Carmona et al. 2008). In Scotland, councils have used the national planning audit of policies to develop a strategy for their local open spaces, after first analysing the provision, circulation, needs and future growth of such locations. This has been followed by the provision of the development plan and creation of a vision (Scottish Government 2010). This includes a set of documents addressing the policies and proposals of the local authority in relation to future development and use of land in their area. It guides and controls day-to-day decisions in providing planning permission. This system has been identified in Scotland as development control, or development management. However, the plan needs to be adopted by the authority only after public consultation (Scottish Government 2010). As every council develops its own local development plan, the following section will focus on public open spaces in the Edinburgh Local Development Plan, as an example.

Edinburgh Local Development (LDP)

This was produced by Edinburgh Council and outlines detailed policies and proposals to guide development within Edinburgh. A new Proposed Local Development Plan, and its supporting documents, was approved by the Planning Committee on 19 March 2013. The Council currently has two local plans to guide development: the Edinburgh City Local Plan, and the Rural West Edinburgh Local Plan. They aim to protect and secure the provision of increased open space for recreation, amenities and other social needs (Edinburgh Council 2010).

In the Local Plan, public open spaces must be publicly accessible. Only urban open spaces (such as squares) are accepted by policy Os3 as suitable of being provided in

the city centre, urban areas, and smaller developments. The policy expects provision of useable open spaces in larger non-residential schemes, in less central locations, and which will contain large numbers of staff (Edinburgh Council 2010). In providing open spaces, the council and its partners wish to promote healthy lifestyles, mitigating and adapting to climate change, and making good use of land to enhance strategic priorities.

Providing liveability at the Scottish local level

Liveable concepts examined in the literature (such as accessible, safe, welcoming, appealing, distinctive and well-connected) are now considered at the local level. Public spaces must be accessible in two ways: physically and socially. Physically refers to constraints such as distance, degree of personal mobility required and any need to cross roads, railways or similar barriers. Socially refers to cultural constraints, such as fear of crime and other concerns over personal safety. This requires the provision of spaces that can be used by everyone, regardless of age, gender or disability. This is implemented through design criteria such as location, designed, effective management and adaptability.

Public open spaces in the UK planning practice

An examination of the system of provision in the UK, starting from planning through to detailed design and construction, reveals that it allows for very little flexibility in providing public open spaces and produces spaces that are rigid in their usage (Shaftoe 2008). However, in working together, urban design and planning practices in the UK are playing a significant role in providing liveable public open spaces that encourage people to make increased use of its facilities during their spare time. The British government emphasises the quality of urban design, by giving increased control, and therefore responsibility, to the designer and client in order to create a better quality of urban design (Punter 2007). The planning system can only set out

regulations, policies and strategies, and therefore shares the responsibility to provide liveable public open spaces with the organisations, individuals and local authorities who all directly influence the creation of liveable open spaces (Carmona et al. 2004).

2.9 Contemporary Planning in the Middle East

This section explores the planning and urban design approaches that have developed around the provision of liveable public open spaces in the Middle East. Modern Middle Eastern urban planning is not yet a well-established system, and still lags behind those in developed countries when it comes to its approach towards urban development and design. There is no clear differentiation in the Middle East between urban design and planning when it comes to their practices, professions and literature. Most planning principles are located under the umbrella of urban design. The provision of the built environment in Middle Eastern countries has not been structured by the Western integration of planning and urban design.

Little research has been undertaken into Middle Eastern planning, and the majority of the literature attempts to view urban development as a conflict between *'traditional Islamic planning'* and *'modern Western planning principles'*. It is the success of the actual implementation of planning system in addressing the social, economic and environmental challenges that needs to be examined. This should include an evaluation of the capability of the Middle Eastern cities to produce a contemporary planning system that promotes liveable public open spaces, which are not simply reflections of Western or traditional concepts, but are an exclusive response to contemporary needs. This is partly addressed in this section, followed by a more in depth analysis of the planning process in Muscat in Chapter 4, as example of Middle Easter planning. This section presents general overview concerning the decision-making and practice in providing public open spaces in the Middle East, classified into national and local levels.

2.9.1 Public open spaces at Middle Eastern national level

The acquisition of enormous wealth and current political reform has ensured that almost every aspect of urban design in the Middle East has become challenging (Zohadi 2012). The rapid growth of the economy, as a result of oil, has emphasised the centralisation in decision-making in public services, including in the provision of public open spaces. Specialised ministries and executive departments have gradually taken over the authority of decision-making from community associations and kin groups (Germeraad 1990). Due to such rapid development, decision-making has become a more ad hoc process, based on the nature and the urgency of the problem, rather than an ideological process based on consideration of availability of resources. Government control of the decision-making has constrained the potential for adopting essential design ideas to fulfil society's requirements (Germeraad 1990).

Contemporary urban design has been closely linked to the expanding power of government authorities and foreign consultants in environmental decision-making without user involvement (Kiet 2010). Middle Eastern countries have been governing as a *'super-guardian'*, taking control over all decision-making as a political approach in order to provide better conditions, and planning is therefore generally provided at the national level. This approach of decision-making using the *'top-down'* process has dramatically affected the quality, pattern, physical form and usage of public space (Germeraad 1990). Public open spaces thus represent the value and norms of the decision-makers, whether these are those of the authorities or a foreign consultant (Akbar 1984), so influencing the design of open spaces where users' interests are completely absent.

2.9.2 Public open space at local level

Zohadi (2012) claims that the recent built environment in the Middle East has been created with good intentions towards modernity by all decision-makers (Zohadi 2012). However, they are mainly based on irrelevant prototypes of urban design,

which is comprised of their cost effectiveness, longevity and historical value. This will lead to a burdening of their governments with long-term urban infrastructure energy waste, and high operation and maintenance costs, while generating significant urban pollution (Zohadi 2012).

Since the 20th century, governments in the Middle East have adopted a functional zoning concept in the urban design of their cities. This isolates integrated functions from each other, including the residential, the commercial and small workshops (Germeraad 1990). The manner in which the master plan created zoning gave priority to the road network over pedestrians, with the unintentional result of separating civic structures as individual isolated buildings from the urban fabric, i.e. public open spaces. Moreover, the design of a large grid pattern with major axial roads cutting through the urban fabric created large exposed areas that were not suitable climates for public open spaces. This has isolated public open spaces from the urban fabric and led them to be abandoned. Such implementation also limits the physical and social diversity of existing urban areas (Kiet 2010). This contains the consequences for the decline of social life pointed out by Jacob (1961) in relation to American cities. There is an urgent need for an urban design that demonstrates understanding of users' needs, in order to provide spaces that improve quality of life within the city (Ravazzoli & Toso 2013). Since this priority is absent at national level, urban design in the Middle East generally disregards users' requirements at a local level. Public open spaces in Middle Eastern countries do not correspond well to either the users or local issues.

The absence of micro-spatial planning and management of open spaces causes many to be unused (Mandeli 2010). According to Germeraad (1990), the lack of a national planning and a local urban design system in the Middle East has led to an absence of public open spaces such as parks, squares and plazas within the urban fabric. Moreover, he illustrates that there is a lack of understanding and defining of public open spaces, and in the awareness at these levels of the importance of having such spaces. This eventually leads to their absence. Germeraad (1990) classifies design factors in the Middle East as tradition, economic, political and natural environment.

Germeraad (1990) illustrates in his study that there is a substantial requirement for a dialogue between the public space user, designers and decision-makers, in order to develop meaningful and coherent public open spaces.

2.10 Conclusion

Public open spaces and the means by which they may, or may not, comprise a liveable sphere within a city are fundamental issues. Squares and plazas play a considerable role in shaping the lives of citizens in the West. The concept of liveability in public open spaces has been a concern in the West since 1961, and comes under the umbrella of providing good quality space. This has been presented in a wide range of literature focussing on liveability from social, economic and environmental viewpoints. In the Middle East, there has recently developed an increasing awareness of liveability, which has been promoted as a criterion of successful urban design. From the above discussion, it could be concluded that there are principles and disciplines in providing liveable spaces that are similar to those drawn from the Western experience, including users' needs and engagement, maintenance, mixed-use, safety, microclimate, etc. The Western experience has been advanced in developing concepts that not only provide good open spaces, but sustain liveability within them, such as social justice, inclusiveness, active engagement, place making, place keeping and walkability.

Creating liveability in such spaces in the West has been embedded in the planning process. Each of the Western countries has developed a different planning approach due to economic, environmental, political and local factors. However, urban design and planning generally overlap with practice in the UK, specifically in Scotland. The Scottish planning system represents two levels: firstly the national (which deals with abstract national forward planning) and secondly the local (which deals with strategic and development plans for local areas). Together, these play a significant role in providing liveable public open spaces. Liveability in a public open space is carefully addressed at a national level and structured down the hierarchy to the local levels.

The provision of liveability is supported by regulation, policies and strategies. Local authorities, organisations and individuals collaborate in the system of provision.

In the Middle East, the major role in creating the built environment is provided by governments, due to their monopoly in decision making. Yet concepts regarding the social ethos, requirements of users and climate specific to the Middle East, were used in traditional open spaces, but are currently missing in contemporary spaces, and this is an issue that needs to be addressed to provide liveability. Due to the rapid modernisation of Middle Eastern society, there is a need to develop unique contemporary public open spaces, which are not necessarily reflective of any traditional or Western concepts, but which are exclusive responses to contemporary needs. The main challenge for urban planners and professionals in the Middle East is to consider innovative and supportive policies and to be able to re-consider and restructure their current planning system in order to provide liveable public open spaces in a constructive manner.

This thesis concludes that liveable public open spaces are a crucial element in the structure of a city. Although there already exists a good deal of research in this area, insufficient emphasis has been placed on the Middle Eastern context. There is an urgent need for research to be undertaken into the current position of such spaces in the region and an evaluation of their provision process. In order to implement an in-depth study, a case study of Oman has been selected. This research bridges the gap in providing liveable public open spaces, specifically squares and plazas in Muscat.

The evaluation criteria of liveable public open spaces has been drawn from both Western and Middle Eastern experiences. The analytical framework to study the provision of such space, and the research methodology strategy, will be discussed extensively in the following chapter.

Chapter 3: Research Strategy

3.1 Introduction

This chapter discusses the research strategy of this research. It includes the analytical framework and the research methodology. It starts with the analytical framework of the research, which has been derived from the theoretical perspectives covered in the literature review. This part draws on the literature in Chapter 2 and focuses on different approaches, concepts and methods to analyse public open spaces which have been developed by key authors, as well as concepts for analysing their production process from the urban design and planning perspectives. The later part of this chapter deals with the research methodology developed to meet the analytical framework of this research. This part contains the theoretical considerations that underpin the choice of research methods, research design, selection of case studies and data collection techniques.

3.2 Analytical framework

Diverse theoretical aspects were embedded in this study in order to understand theoretical explanations along with their practical implications. This research is comprehensive and explanatory in nature, as its objective is to understand the context of public open spaces in Muscat within an international theoretical and empirical perspective. As stated in Chapter 1, this research assumes that planning and urban design can greatly contribute to the provision of good quality liveable public open spaces. In this sense, in Chapter 2 the study has looked at the concepts, methods, theories and good practice of providing liveable public open spaces from Western literature, and, in order to understand the context of the case study, literature on the Middle-East in general and Muscat more specifically was also reviewed. Evidence of Western hegemony was found in the concepts and processes that have provided the basis for the urban design of contemporary public open spaces in the Middle East, as far as these have been documented (see Figure 3.1.).

The analytical framework developed in this section draws on the knowledge gained from the literature to identify concepts and criteria to be measured in the empirical work. This analytical framework is presented in graphical form in Figures 3.1 and 3.2. The literature review on public open space has shown that liveability is a composite phenomenon that includes different concepts and disciplines. Figure 3.1 is therefore classified around the three key dimensions of public open space liveability identified in Chapter 2. In order to evaluate liveability, the concepts learned from the literature were structured into two user requirements and built environment/physical quality categories. Those two main categories are classified into sub-categories, which represent criteria that include a set of indicators used to analyse squares and plazas in Muscat. These provide a basis for understanding the liveability of public open space and are used in the assessment of the cases studies in this research, though not directly in the order presented here, as is explained later in this chapter.

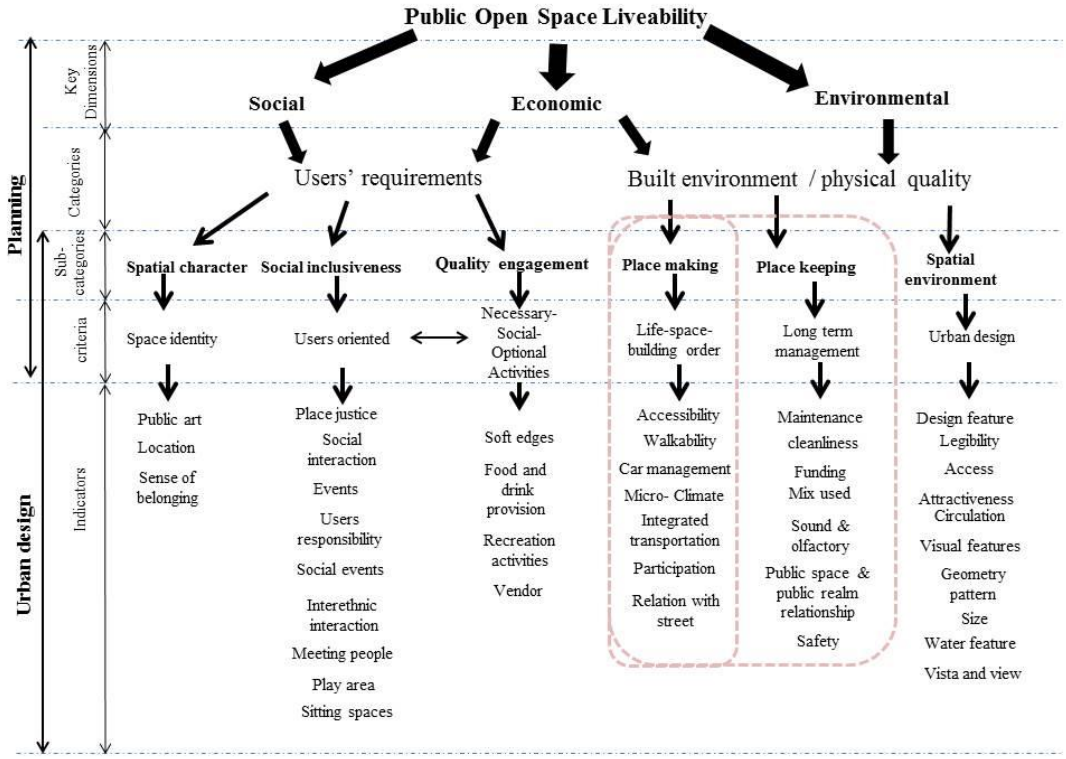


Figure 3.1: Analytical framework (1): dimensions, concepts and evaluation criteria

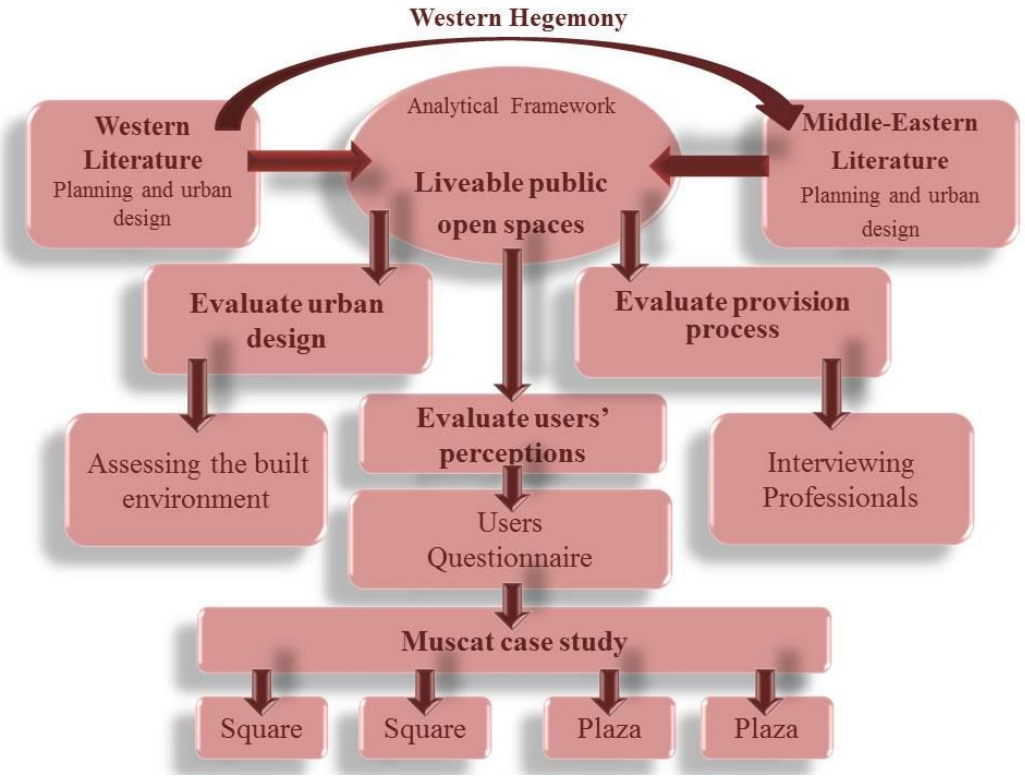


Figure 3.2: Analytical framework (2): relationship between research components

Figure 3.2 shows the research components used to answer the research objectives and questions set out in Chapter 1. This identifies the three key areas evaluated in the research process: the urban design (the product), users' perceptions and the provision process. This classification has been also used in structuring the three evaluation chapters (Chapters 5, 6 and 7). Evaluation of each of these components involves considering a range of concepts and indicators right across the three dimensions shown in Figure 3.1. The dimensions and concepts in Figure 3.1 do not map vertically onto the three research components shown in Figure 3.2. Rather, in some cases a given indicator may be found in each component, but seen from a different perspective (e.g. planners' perception, on-the-ground professional assessment, and user perception), and in other cases a given indicator may be more relevant to one component than another (e.g. partnerships may be a key concern of the public space providers in the public space provision process, but the operation of the partnership

may still affect the product and user perception). Each of the following subsections provides a brief description of the key focus of each component shown in Figure 3.2.

3.2.1 Evaluating the urban design of public open spaces

The literature review in Chapter 2 identified a wide range of concepts and indicators that must be considered when evaluating the quality of the built environment in public open spaces in order to assess liveability. Jacobs (1961), Newman (1973) and Carmona (2010) stressed the influence of built environment. Other researchers, including Gehl (2007, 2010 and 2011), Jacobs (1961), Copper Marcus and Francis (1998) have pointed out different concepts in urban design that can promote liveable public space. These include the location of the space, accessibility, availability, appearance, human scale, visual complexity, micro-climates, transitions, boundaries, subspace, size, circulation, pedestrian, seating, urban furniture, activities, age group and movement. These concepts and indicators range across all three dimensions shown in Figure 3.1.

Two key objects of study emerge from the wide-ranging literature referred to above: (1) the nature and characteristics of the place (or open space in this case); and (2) human behaviour within the space being studied. Addressing this research component therefore, entailed two modes of enquiry (see Section 3.6.2):

1. Application of open space evaluation tools, drawing on established methods that can be applied by professionals (or others), which cover a range of indicators mentioned above.
2. Observation of human behaviour in the case study spaces using well-established techniques.

3.2.2 Evaluating users' perception

Liveability is all about people being able to use the space positively. Sets of concepts and indicators that may be used in the assessment of users' needs when evaluating the liveability of public open spaces have been drawn from the literature review in Chapter 2. Criteria relate to how users perceive the quality of the built environment in the space and how they perceive the space responds to their needs. This research views liveable public open spaces as a product of the planning and urban design processes. The success of any product must be evaluated on the basis of the opinion of those are targeted by the design, in this case the whole community. This analytical framework was designed to use criteria from the literature such as spatial quality, attractiveness, cleanliness, maintenance, users' activities, accessibility, users' facilities and planning participation – in order to assess liveability from the users' point of view. These concepts and indicators range across the three dimensions shown in Figure 3.1.

3.2.3 Evaluating the provision process

The provision process component in the analytical framework is concerned with how professionals evaluate the process of providing public open spaces. In Chapter 2, a wide range of theories relating to the influence of planning and urban design in providing liveable public open spaces were discussed (Albrechts, 2006; Vigar, 2009; Curry et al, 2010, cited in Illsley et al. 2010; Gehl 2010). The review of literature on Western and Middle Eastern countries identified a set of what are considered good urban design and planning principles in relation to public space provision. As explained in Chapter 2, liveable public open spaces are those that are well used. Planning and urban design can influence on this through appropriate consideration of the social, economic and environmental dimensions (Figure 3.3).

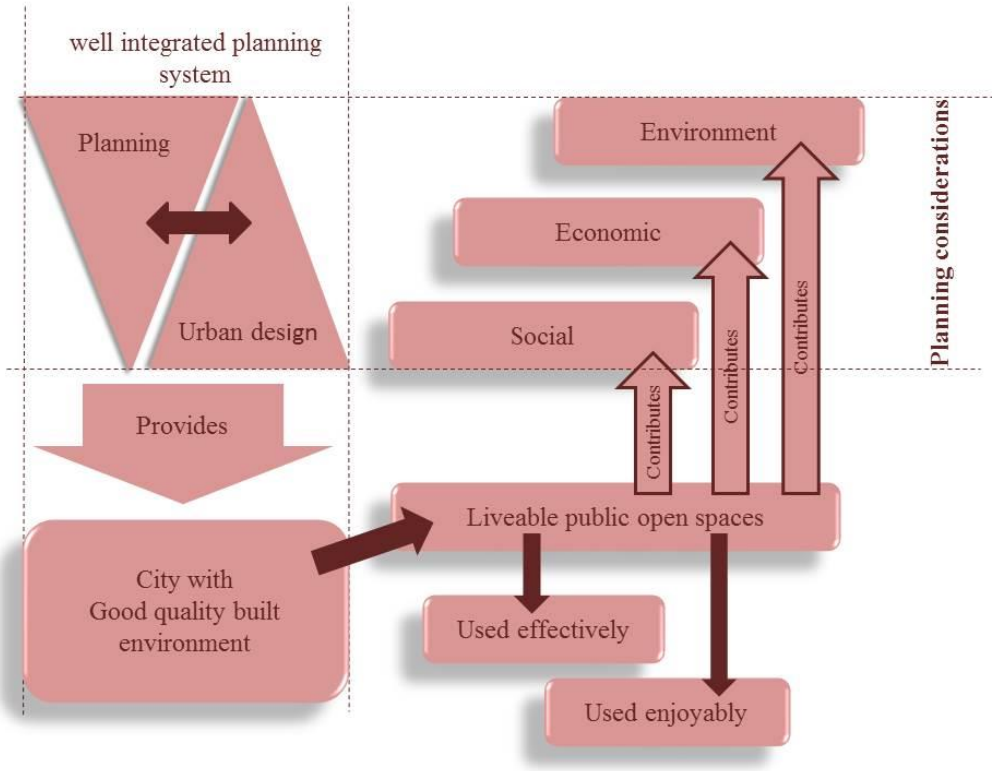


Figure 3.3: Relationship between the planning system and liveable public open space

The nature of the planning system can therefore have an impact on the provision of liveable public open space. In addition, it is important that people involved in the planning system understand the nature, importance and contribution of public open spaces to cities if they are to incorporate these aspects into policies and strategies, the implementation of which will affect the provision of liveable public open space. The literature review in Chapter 2 provided an overview of how a planning system that is perceived to be effective has developed in the West, specifically in the UK. In this case, the consensus is that in order for such a system to be effective, it must have well-established objectives that are set through a hierarchy of plans – e.g. a national comprehensive plan (e.g. in the cases of Scotland and the Netherlands), local plans and development plans. Generally, in such systems higher level objectives can cascade down to more local level plans and development initiatives. In relation to the provision of liveable public open space, the aspiration would be to set the latter as a higher level objective. Figure 3.4 shows an example of a planning system (based on

how it operates in the UK), which illustrates the various levels in the hierarchy of decision-making at which public open space could be considered.

As is explained in Chapter 4, the planning system in Muscat is based on the UK system (hence the relevance of considering a system such as that shown in Figure 3.4), and has been in place for a relatively short time. Evaluation of the process of providing liveable public open space in Muscat has therefore involved two lines of enquiry:

1. Examination of the nature of the planning system in Muscat in practice, and of the extent to which it explicitly addresses the provision of liveable public open space, through desktop study as well as some input from interviews with professionals involved in the operation of the planning system (see Section 3.6.4).
2. Exploration of the perceptions of liveable public open space among the professionals involved in the operation of the planning system and in the planning and design of public open space. This exploration covered relevant indicators from Figure 3.1. See also Section 3.6.5 later in this chapter.

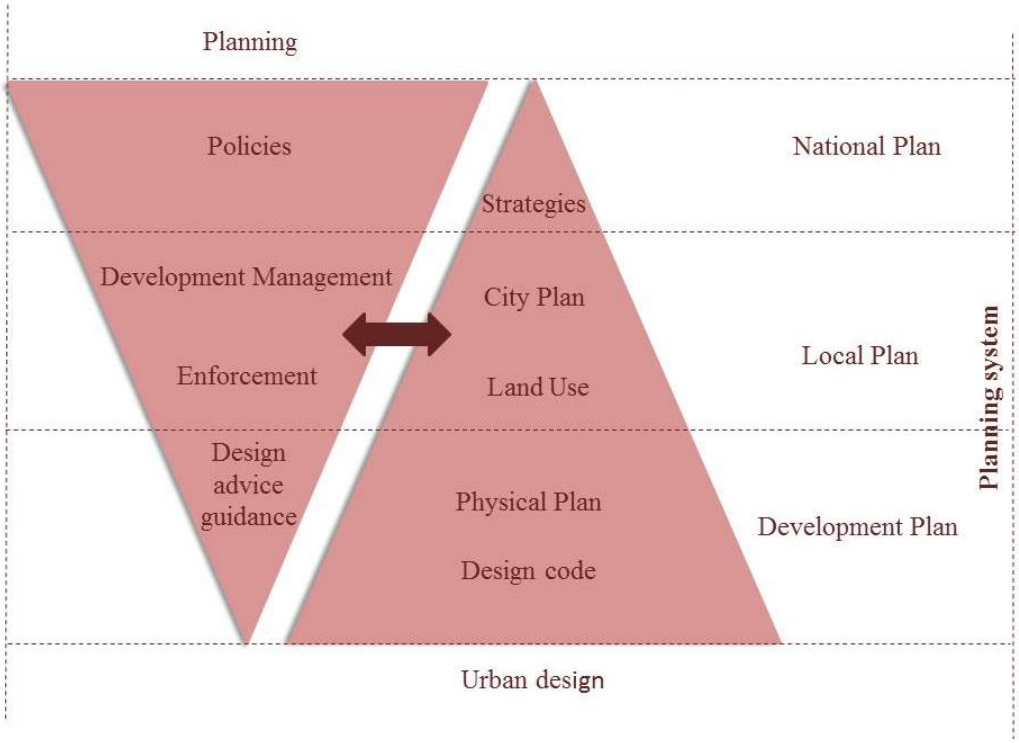


Figure 3.4: Example of an effective planning system based on UK experience

3.3 Research approach

This section discusses the wider issues of relevance to research approaches in order to justify and locate the research methodology adopted in this study. It covers three main topics: research ideology, theoretical perspective, and research design. Research must identify its position between the antinomies of thought and languages, nature and culture, reason and emotion, theory and practice, white and black, men and women (Crotty 1998). In order to justify the method chosen for this research inquiry, four elements of the process must be clarified (as shown in Figure 3.5). These are epistemology and ontology, theoretical perspective, methodology and methods (Crotty 1998).

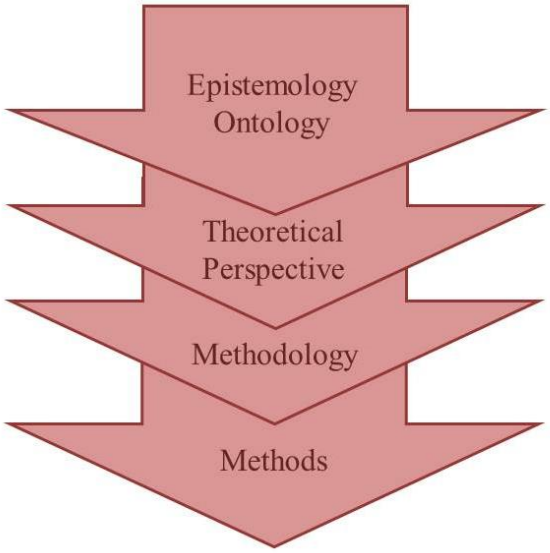


Figure 3.5: The four elements in developing research process (Crotty 1998).

3.3.1 Epistemological issues

Epistemology is the consideration of the appropriate theory of knowledge embedded in the theoretical perspective as a discipline according to the nature of the research area. Furthermore, it includes the approaches used to assess this knowledge, obtain claims to truth and the extent of truth that could be achieved by the knowledge

(Crotty 1998). Epistemological approaches, namely the way in which reality is understood, include objectivism, subjectivism or something in between.

Objectivism as a concept has long been used in research. It understands reality as 'existence exists' and states that things are what they are independently of what might be thought about them. In this concept, the world exists independently outside of individuals' minds and the nature of things is objective (Crotty 1998). Individual thoughts cannot therefore change reality. Epistemology in objectivism views knowledge as completely true facts that enter the human mind and provide a foundation for other knowledge. Objectivism states that whilst individuals can create concepts, these concepts are objective and freely produced away from any external force such as the influence of society (Bryman 2008). However, logic is the personal understanding of knowledge based on absolute truths, whereas emotions and intuitions are not part of knowledge.

In contrast, subjectivism views the truth as an abstract value where nothing can be known for certain since it is viewed through the experience of individuals. The truth is inside everyone's mind. Individuals have radically different perceptions of the world for genetic or historical reasons (Crotty 1998). This extends to all individuals' senses and thinking due to the changing of their thought patterns by their interaction with their environment. People vary in terms of their neurological and biochemical make-up, which have an essential role in forming their individual experience of our outside world. Everyone is therefore unique in his or her thoughts. In subjectivism, all knowledge about everything is incomplete and reality, logic, emotion and heuristics are biased. The thinking error perspective argues that individual recall of memories changes depending on expectations and recent experiences. Conscious or unconscious human thinking is influenced by human experience and does not work in abstract, rational and logical ways. Conflicting experience, abstract morals and religious perspectives lead individuals to view everything differently due to the variation in their knowledge (Bryman 2012). This creates millions of different views, with no-one having the mental power to judge what is real and not influenced by their own experience. This has eventually led to a subjectivist approach that questions whether anything is 'real' in the world. According to this epistemological

approach, there are no absolute morals because individuals interpret moral issues differently.

3.3.2 Ontological issues

Ontology is the study of being (Crotty 1998). It is the way of understanding things, the nature of existence and structure of reality (Crotty 1998). Together with epistemology, ontology governs the theoretical perspective adopted in any research. Each and every theoretical perspective has its own understanding of epistemology and ontology (Crotty 1998). In social research, the ontological refers the consciousness of the nature of social entities. Social entities are thus viewed in objectivism as objective entities, whereas in subjectivism social constructions have a role in defining the social actors. This research suggests that different planning and urban design factors influence the public open spaces in Muscat. Moreover, the research provides categories which emphasise the understanding of the nature of provision processes for the existing public open spaces in Muscat. The evaluation of this is conducted through the perceptions of both professionals and users. The research assumes that the evaluation gathered from human observations and beliefs is varied. The truth in this sense is not absolute and social actors' roles affect the way in which the humans involved view realities. A predominantly subjectivist ontological approach is a suitable governing approach for this research (see also Section 3.3.3).

The different approaches to ontology provide the basis for different research paradigms, of which two are key: positivism and interpretivism. There are differences in the epistemology of positivist and interpretive paradigms (Hennink et al. 2011). Researchers must have a clear awareness of the dominant paradigms of their academic discipline and the extent to which these influence the formation of their research (Hennink et al. 2011). Babbie (2007) states that, paradigms are bases for understanding which outline both what we observe and how we realise it (Hennink et al. 2011). The positivist paradigm represents the scientific approach to research. Such an approach places great emphasis on objective measurements of

social issues in the social sciences. A distinction is made between facts and value and research is seen as value-free. This approach has been criticised in social research due to its failure to acknowledge the interactive and co-constructive nature of data collection within human beings (Hennink et al. 2011).

On the other hand, the interpretive paradigm intends to understand society from the perspective of people. This approach is based on interpretation and observation in understanding the social world (Hennink et al. 2011). It is essentially based on the experiences of people (Marshall & Rossman 1999). Research is not value-free and the researcher has some influence on data collection or interoperation. Despite the seeming differences between the two paradigms, these are not distinct. Positivism and interpretivism are the base paradigms of quantitative and qualitative research respectively (Hennink et al. 2011).

In order to determine the influence of planning and design in public open spaces, a distinction must be made between people and objects and the study of the subjective meanings of social action. In this sense, subjectivism is an appropriate ontology to understand this kind of phenomenon, whilst interpretivism is the matching epistemological approach to provide the appropriate knowledge for this research.

3.3.3 Theoretical perspective: Social Constructionism

Social research is a term used in social science fields, such as sociology, human geography, social policy, politics and criminology (Bryman 2008). Moreover, it is a type of research that draws on social science for conceptual and theoretical inspiration (Bryman 2008). Social research tends to be motivated by potential developments and changes in social areas, as is the case in this research. The rationale for adopting a social research approach for this piece of work is the central question of the effect of planning practice (a social process) in creating liveable public open spaces, which are social outcomes A major dilemma in the philosophy of social science is that it differs from the *'hard'* sciences (physical and natural) because of the different ways of viewing and measuring social reality (Bryman

2012). Social research is to a large extent interlinked with society. The way in which the research topics and issues are formulated and in which findings are interpreted are core differences between social and natural science research (Bryman 2012). The growing belief in the failure of the 'science of man' concept of obtaining scientific laws for human behaviour was the main reason for the revolution by social researchers against positivism, such as Comte's and the historical materialism of Marx and his followers. In addition, research philosophies have multiplied widely in the last two decades, providing researchers with many alternatives for research design.

Of the varied philosophical stances and research approaches, social constructionism has emerged as a theoretical perspective that is appropriate for this research. In constructionist opinion, the truth cannot be described solely as objective or subjective. In constructionism, the ontology is constructed and interpreted by individuals. Meaning in this sense is not created, but is rather constructed. Constructionism pulls together objectivity and subjectivity as human experience (subjectivism) cannot isolated from the object (Crotty 1998). This research is grounded on individuals viewing their built environment and evaluating its provision process. In research of this nature, the object or spaces cannot be isolated from the subject or the way in which individuals experience it. A constructionist philosophy has thus been incorporated into the design of this research methodology.

The theoretical perspective plays an essential role in forming the point of departure in research. From a realist perspective, the natural and social sciences must utilise the same approach to determine the reality that already exists. There are two main types of realism: empirical realism and critical realism (Bryman 2008). Empirical realism assumes that there is a perfect or very close correspondence between reality and the way in which it is understood (Bryman 2008). This approach fails to identify the enduring structures and generative mechanisms behind that underpin the understanding of social events (Bryman 2008), whereas critical realism conceptualises the way in which reality is understood. Unlike empirical realism, critical realism argues that there is a separation between reality and the term used to

describe it. Critical realism identifies the generative mechanisms and allows the potential to initiate changes in the situation.

Constructivism, however, argues that knowledge is constructed by human mental activity (Jackson 2006). Reality is constructed by people themselves by perceiving and interpreting their mental activity. Individuals' minds produce mental models differently, based on physical and social experiences, individual conceptions and unique aspects of knowledge of the world (Morgan and Smircich 1980). Its epistemological concern is how humans develop this meaning and knowledge of their world. The truth cannot be identified as having a single meaning (Molteberg and Bergstrøm 2000). Gradually individuals expand their mental manipulation of representative objects within the realm of a hypothetical world that is separate from the world of actual objects and local contingencies.

On the other hand, social constructionism states that social reality is created by the ways in which individuals and groups of individuals interact with each other. In this sense, humans initiate, institutionalise and reform social phenomena by a continuous dynamic process of perceiving and interpreting knowledge. Knowledge is therefore a continuing active and creative process in which individuals construct mental models of their world. In other words, individuals are the creators of discursive perspectives on reality. The individual engagement with themselves or others facilitates the construction of updated knowledge. Knowledge and identities are constructed in discourses that categorise the world and bring phenomena into sight. Since this research aims to explore the reality of urban design and planning practice of public open spaces, quality and vitality have been tested from the perspectives of users and providers. It emphasises the way in which knowledge is shaped and changed within specific contexts, shaped and expressed though different media, and processed in different individuals' minds. The social constructionism concept was therefore used as a theoretical perspective for data collection and analysis.

3.3.4 Research design

Theories are essential to guide data collection and analyse findings in order to address the research objective, as illustrated in Figure 3.6 (Bryman 2008). Theory is important for social research as it provides the rationale and the framework within which the social phenomena can be understood and the research findings interpreted (Bryman 2008). In a deductive theory, the hypotheses are deducted from theory at the very early stage of the research, which directs the process of data collection (see Figure 3.7). At the end of the research, the findings are used to contribute to the theory as reverse action in order add to the body of knowledge (Bryman 2008). This strategy is often associated with quantitative research. However, in inductive theory, the theory is as outcome of the research. This approach is usually used in qualitative research as in this study. The theory here is at a very end stage of the process and acts as an outcome. As shown in Figure 3.8, theory emerges as generalisable inferences out of observation, as is the case of this research. The research strategy in this study aimed to draw out a generalisable interpretation about public open spaces by observing the quality of squares and plazas. Moving back and forward between data and theory is a general strategy to establish linkages between theory and data, which is known as an iterative approach. This approach is evident in grounded theory (see Figure 3.8), which could be used as alternative strategy to combine the theory with empirical research by weaving back and forth between data and theory (Bryman 2008).

Grounded theory is now extensively used in qualitative research as a framework for analysing data (Bryman 2012). The concept of grounded theory, which is based on emerging theory from the data, was first introduced by Glaser and Strauss in 1967. However, grounded theory is more likely to be considered as the generation of categories rather than actual theory (Bryman 1988). This research is concerned with planning and urban design practices that lead to liveable public open spaces. Criteria from existing theoretical approaches were selected to apply them to the case studies. The collected data governed the development of the outcome theory of this research. The objective was to use the Muscat case study to develop grounded theory by drawing concepts from findings in three different observation contexts: the physical

environment, users and professionals in order to generate a formal theory about public open spaces in Middle-East.

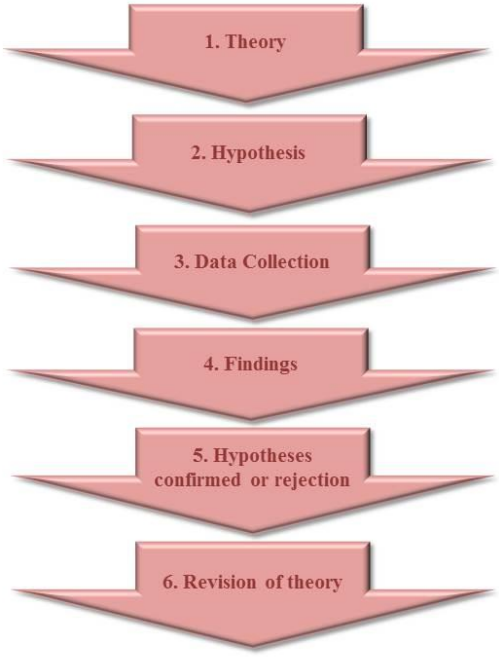


Figure 3.6: The process of deduction (Bryman 2008 page 10)

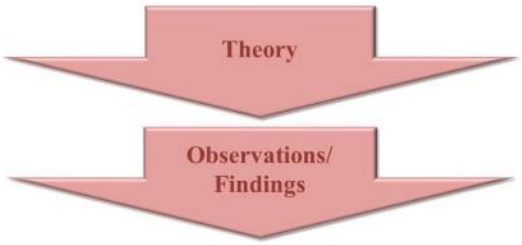


Figure 3.7: Deductive approach

(Bryman 2008 page 11)

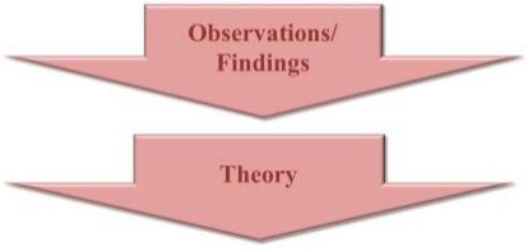


Figure 3.8: Inductive approach

(Bryman 2008 page 11)

3.4 Research methodology

This section reviews the suitable leading approach based on the theoretical perspective of the research. There has been considerable debate comparing and contrasting qualitative and quantitative social science research (Bryman 1988). Quantitative research is, in general, exemplified by social surveys and experimental investigation, whereas qualitative research is associated with participant observation and unstructured, in-depth interviews (Bryman 1988). The qualitative approach, the predominant approach used in this research, may simply be defined as an approach to research on the social world, which intends to describe and analyse the culture and behaviour of humans and their groups (Bryman 1988). The most essential element characteristic of qualitative research is that it expresses the viewing of the event, action, norms and values from the perspective of those who are being studied (Bryman 1988). Behaviour has to be set in the context of values, practice and underlying structures of the appropriate entity (Bryman 1988).

Qualitative research is associated with several different approaches of data collection. One of these approaches is the social survey, which embodies the main features of quantitative research (Bryman 2008). This research draws on multiple methods in order to understand the social setting of investigation and intends to go beyond pure description to conduct an intensive analysis of the examined environment. Multiple methods have been widely used in social science for years (McNeill and Chapman 2005). However, there are potential constraints in using several methods, as is there is a difficulty in analysing the immense amount of data produced. There is also the problematic potential of ending with contradictory findings (McNeill and Chapman 2005). To avoid these problems, this research was conducted with a highly explicit focus on the interpretation of social reality.

Epistemology												
Objectivism												**Subjectivism**
Theoretical perspective												
Positivism	Postpositivsm	Empiricism	Constructionism	Realitivism/ relativism	Idealism	Critical inquiry	Interpreativism (symbolic interactionism , hermeneutic, reading and literacy theory)	***Social Constructivism***	Advocacy/ Participatory (feminist perspective, racialized perspective, critical theory, queer theory			
Methodology												
Quantitative												Qualitative
Performance data	Attitude data	Observational data	Census data	Statistical data	Open ended questions	***Interview data***	***Observation data***	Document data	***Audio or visual data***	***Text and image analysis***		

Table 3.1: Relationships between the embedded epistemological, theoretical concepts and methodological tools (Source: adapted from a lecture on a Framework for Research Design in the Research Philosophy and Design module by Prof Ya-Ping Wang at School of the Built Environment in 2011-2012).

Three major problems are associated with the implementation of qualitative research: the ability of the researcher to see through other people's eyes and to interpret events from their perspective; the relationship between theory and research; and the extent to which it is possible to make generalisations about qualitative research obtained from case studies (Bryman 1988). In order to overcome the disadvantages of the qualitative approach, the data was first analysed from the perspective of participants and through understanding of the meanings that influence their behaviour in relation to events or objects. Secondly, different approaches may be taken to resolve the

linkage dilemma between theory and the grounded theory of qualitative research. Case studies are of most relevance to this research. Case studies have been shown to be useful in generating and testing hypotheses (Flyvbjerg 2004). Moreover, Walton (1992) argues that a case study is likely to produce the best theory (Flyvbjerg 2004). It is an essential method used to understand complex issues associated with a study area (Flyvbjerg 2004). However, Creswell stresses the use of theories to shape the direction of the in-depth analysis of multiple case studies (Creswell 1998). Research questions were considered as a suitable theory to govern the case studies used in this research. Thirdly, it was essential to explore an illustrative unit in the form of a case study, which reflects the general characteristics, in order to make generalisations about the research findings. A mixed method approach is beneficial if the advantages of both qualitative and quantitative approaches are to be realised (Creswell 2003). Qualitative methods were used to explore the existing situation and to discover variables for in-depth detailed study. The quantitative approach was used to examine the variables in a wider context. In order to generalise the phenomenon, quantitative techniques were applied. The findings were generalised and then developed into an in-depth meaning of the phenomenon.

Combining the two research traditions helped strengthen the research findings as it allows the same issue to be investigated in greater depth. In terms of structure and process of this research, the qualitative method provides a perceptive view of social life, whereas the quantitative method provides a statistical account. It has constrained the problem of generality by monitoring researchers' impressions by using simple counting techniques. Furthermore, this combination enables the gap between macro and micro levels in the research to be filled.

As mentioned earlier, constructionism research fits somewhere between objectivism and subjectivism (see Table 3.1). Constructionists may require both qualitative and quantitative approaches to be implemented in order to understand social phenomena (Crotty 1998). 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 in order

to answer the research questions. The approach used in both methods was executive and results were analysed under the umbrella of social constructionism.

3.4.1 Case Study Approach

Case studies allow the exploration of different populations and activities to determine data samples from specific locations (Bryman 1988). However, researchers argue that there is a limitation on the extent to which the selected case study could represent the whole of the population and then to what extent it could be generalised in such research. The generalisability of case studies is useful in terms of theoretical propositions rather than for the population or universal studies (Bryman 1988). The only solution to this dilemma has long been to use more than one case study (Flyvbjerg et al. 2004). However, cases could instead be selected that are typical and representative of a cluster of characteristics (Bryman 1988). It is possible to generalise on the basis of a single case study, and there is potential for presenting a case study central to scientific development via generalisation as a supplement or an alternative to other methods. However, formal generalisation is overvalued as a source of scientific development, whereas the influence of example is underestimated (Flyvbjerg 2004). The author considers Muscat to be a critical case in the following sense: if the quality of public open spaces was weak in Muscat, they would most likely be weak anywhere else in Oman; as Muscat is the political and economic capital of Oman, urban planning and design should be stronger there than anywhere else in the country. The research findings could therefore be generalised in Oman. However, a positive evaluation from the case study of Muscat spaces could not be generalised to Oman, as the presumption of weaknesses in Muscat's spaces formed the starting point of this research.

Flyvbjerg (2004) states that a strategic selection of even a single a case study could firmly increase its generalisability. The case study spaces in this research have therefore been selected according to their validity rather than by using random samples. Furthermore, examining an extreme case study has greater potential to provide a wealth of information compared to a typical case as it activates extra actors

and extra basic mechanisms in the research situation (Flyvbjerg 2004). Choosing a few cases to select for their validity is therefore more appropriate than using random samples (Flyvbjerg 2004). As will be discussed in the following section, four case studies were selected in Muscat: two squares and two plazas. Karl Popper argues that the *'Falsification test'* could be illustrated by observing the example of a *'black swan'* within examples of *'all swans are white'* to falsify the proposition and to clarify general significance, before stimulating further investigation and formulating a theory (Flyvbjerg 2004). The selected squares were the only ones in existence, whereas the plazas were chosen from among the very few existing in the city. The research classified each pair into an *'extreme case'* (black swan) and a *'typical case'* (white swan) within the Omani context, as discussed in the next section. Despite the lack of samples, these spaces represent the quality of urban spaces that exist in Muscat in particular and Oman in general. By developing a more in-depth understanding of the meaning of the phenomenon in the represented selection of the case studies, the findings could potentially be generalised to Oman and the Middle East.

3.5 The rationale for the selection of the case studies

Muscat has a mixture of traditional and contemporary public open spaces. However, traditional public spaces have almost disappeared. This study argues that there is a shortage of urban spaces, such as waterfronts, streetscapes, squares and plazas in the city. A list of all existing spaces in each urban space category is given below:

- ***Waterfront spaces:*** Although the city is linear along the coast, there are few recognised waterfront spaces, which include Muttrah Corniche, A'Seeb, Almouj and Shati Alqurum.
- ***Streetscape spaces***: A modern version of streetscape has been introduced into the city. Few are exist such as Ruwi Central Business District, Alqurum Business District Street, A'Seeb Market Street and Alkhoud Street
- ***Squares:*** This is a new concept introduced to the city. Only two exist: Palace Square and Municipality Square.

- ***Plazas:*** This is also a new modern concept introduced to the city. Only a few have been established, such as Hay-Almina Plaza, Souq-Althalam, Shatti Alqurm, Ministries Plaza and Muttrah.

Most of the listed urban spaces have been located within the old developed areas, as illustrated in Figure 3.10. Due to the research length limitation, this study is focuses only on two types of the urban spaces, which are squares and plazas.

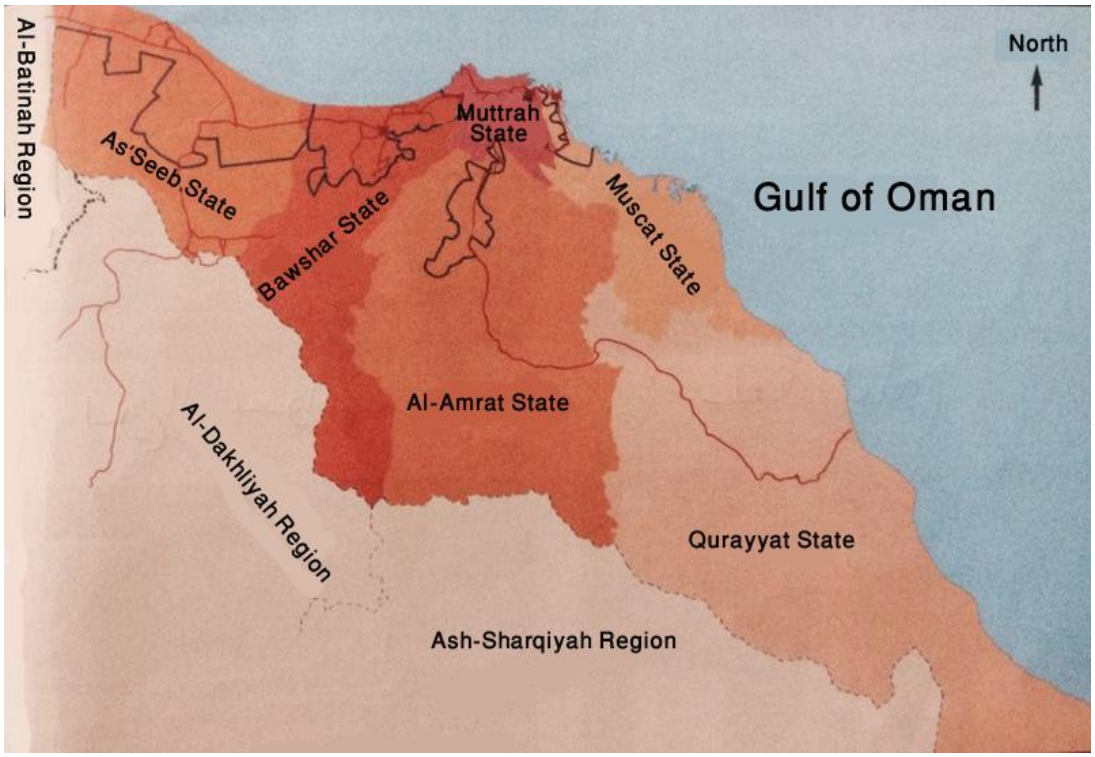


Figure 3.9: The states in Muscat governorate

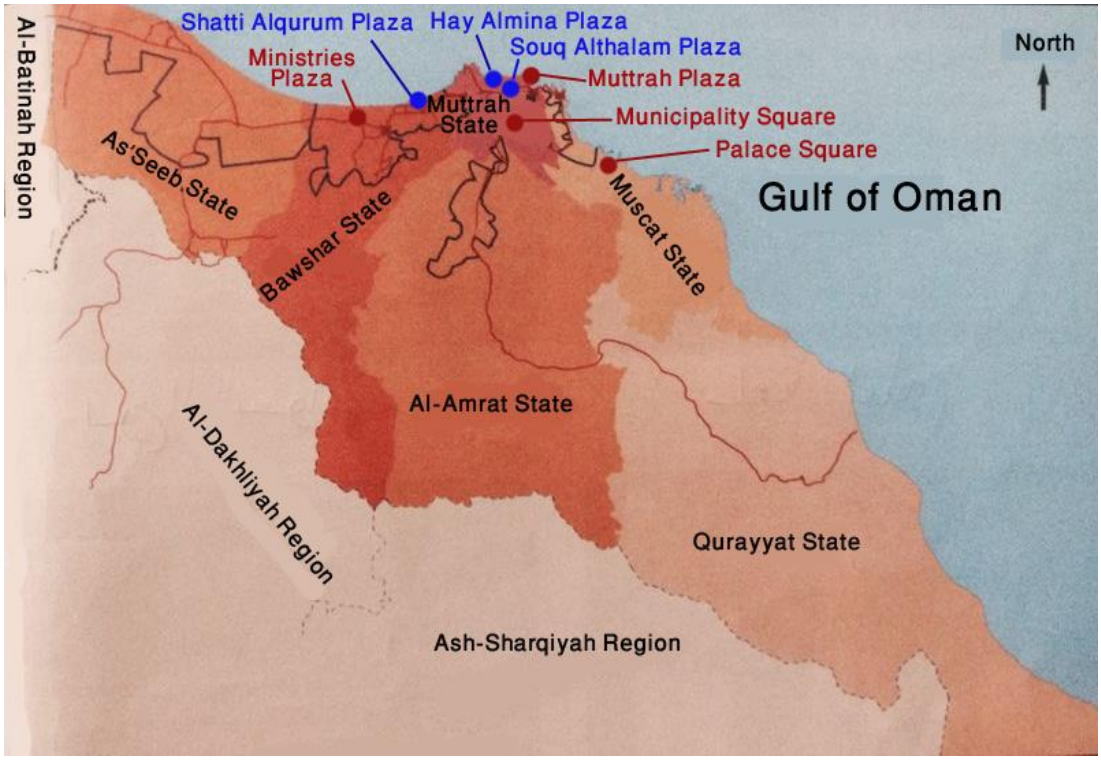


Figure 3.10: Location of squares and plazas in Muscat (case study spaces shown in red).

As previously noted, this research focuses on squares and plazas, with two case studies of each. However, there is clear absence of such spaces in the city. They are all located in either historic, commercial or administrative districts. None of them could be considered to be located in a residential area. The squares in this study are the only ones in the entire city and were both built after 1970. However, Municipality Square was selected and considered as a typical square in the Omani context because of its urban value and location. It represents the 1970s renaissance landmark and showcases the Sultanate's obligation towards modernisation in Oman. Palace Square, however, was selected and considered as an extreme example of a square in the Omani context as it is located in the centre of ancient Muscat in front of the Alalm palace, which is used as the royal ceremonial palace.

In the plaza category, there were only a few spaces from which selections could be made. Although the Muscat governorate comprises six states, only two of them have plazas (see Figures 3.9 and 3.10). Two case studies from different states were therefore selected. Hay Almina, Souq Althalam and Muttrah Plazas are all in Muttrah State. Hay Almina plaza was initially selected for its location and urban

value but was unfortunately demolished for a redevelopment of the fish market. Souq-Althalam Plaza was excluded, as it is a small area linking market paths, rather than a public space. Furthermore, it lacks some of the main elements of a plaza, such as a sense of enclosure, fountain and setting spaces. Muttrah Plaza was therefore selected as it has proper plaza elements, such as a sense of enclosure, landscape features, different setting benches and a fountain. It is considered a typical example of a plaza in the Omani context due to its urban value and location within the ancient part of the city.

Shatti Alqurum Plazas and Ministries Plaza are located in Bawsher State. Shatti Alqurum Plazas was excluded as it lacks the significant plaza elements that are present in the Ministries Plaza, such as a sense of enclosure, landscape, different seating elements, a fountain and event hosting. Ministries Plaza is located next to the ministries buildings and therefore has considerable social value in a unique functional setting. This plaza is therefore was considered an unusual example of a plaza in the Omani context. Further details of the case study spaces are illustrated in Section 4.8 in the following chapter.

3.6 Data Collection

Different methods are associated with qualitative research, such as case studies, examination of documentary materials; unstructured and structured interviews; postal questionnaire surveys; behaviour observations; dialogue; personal experience; introspective, historical, audio and visual assessment and texts and images that describe routine and problematic moments and meanings from the individual's point of view (Creswell 1998). A wide range of research methods exists and it is important to choose the most appropriate one to gather the most relevant data (Bryman 2008). This research involves a combination of several different data collection methods: secondary data, reviewing literature and documents; and primary data by fieldwork on case studies, which includes urban design audit, urban design inventory, visual assessment, observation, behaviour mapping, questionnaire and structured interviews. Since this research is embedded in social constructionism, the meaning

of reality is socially generated by individuals and groups. 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 emphases, seeking to produce different types of findings with which to answer the thesis questions (see Table 3.3). The use of multiple methods provides different lenses for potentially understanding in a critical evaluation of findings. These methods are briefly described below.

3.6.1 Literature Review

An extensive literature review on the research topic was conducted at a preliminary stage of this research. The majority of the work in the first year involved reviewing formal, informal, recent relevant publications in books, journals, websites, newspapers, online documents and official policies. It was a fundamental step to clarify the research direction and determine the gaps in knowledge that this study was to address. This part was twofold: western experiences and theories and Middle-Eastern experiences, which helped achieve the first objective of the research.

3.6.2 Methods for evaluating the quality of built environment

As shown in Table 3.3, two questions were developed in order meet objective 3. The first question is associated with assessing liveability in public open spaces in Muscat, using the analytical framework. Assessing liveability in the product was conducted in two ways, first by assessing the liveability concepts in the physical built environment of the space and second by assessing liveability in the nature of users' interaction in the space. For the first part, which was related with the quality of physical built environment, a set of tools was selected to fulfil this part of this study including urban design audit, urban design inventory and visual assessment. For the second part, which was associated with assessing users' interaction in and with the space, observation and behaviour mapping tools were selected.

Urban design audit, urban design inventory and visual assessment tools were used to produce a critical evaluation of the quality of urban design used to promote liveability in the case study spaces. Each method was respectively selected to evaluate the design from a specific position: the first focused mainly on the layout of the space such as imageability, enclosure, human scale, transparency and complexity; the second one is more concerned with urban design features and qualities related to how the space appears; and the third focused on visual issues such as colour, complexity, and dominance. Together they construct a solid assessment of the design, contributing to explore the extent to which it supports liveability of the space. These three tools are designed using scoring sheets and ticking checklists about concepts related to perception of the surrounding environment. These methods were applied by visiting each of the selected case study spaces and scoring and ticking the sheets. The methods were developed and tested in several metropolitan areas by Measurement Instrument for Urban Design Qualities Related to Walkability and by the Active Living Research Program. Using these three tools, Forsyth et al. (2010) found a strong correlation between the visual appearance of urban design and the way people used their three case studies. They found that using multiple techniques to study one space potentially creates a very rich evaluation that values visual qualities, urban design character, and user responses to the space (Forsyth et al. 2010). These tools explore perceptions, and are therefore subjective. In order to validate the data from such tools a team comprising the author and three other built environment professionals applied the tools individually and separately from the rest of the team.

Finally, evaluating the quality of users' interaction in and with the space formed part of addressing research question 3.1. Behaviour mapping was found to be a suitable tool to assess people activities and the way they use the space. This method was also conducted in the case study spaces. More detailed information about each tool and how it was applied is provided below.

1. Urban Design Audit

The urban design audit sheet is officially called the Measurement Instrument for Urban Design Qualities Related to Walkability (Ewing et al. 2005a, 2006: cited in Forsyth, et al 2010). It was initiated for the Active Living Research Program by the Robert Wood Johnson Foundation (Forsyth et al 2010). This research aims to evaluate urban design of public space to assess its liveability. The analytical framework of this research includes walkability as a concept of promoting liveability. This tool was selected to evaluate liveability in open space because, along with other methods, it is sufficient to assess the design concepts. It was chosen because it focuses particularly on evaluating the layout of space by measuring the concepts from Chapter 2 that enhance liveability. These include imageability, enclosure, human scale, transparency and complexity. Each design concept in the sheet was given a weighted score to allow the comparison of each specific concept (see Appendix C). The advantage of this tool is it comes up with an overall weighted score for each urban design concept, making it easy to directly compare between the different spaces. It was helpful in measuring fairly multifaceted urban design concepts in a clear and comprehensible way. As mentioned earlier, this method is inherently based on personal judgment; therefore it was applied by a team of four professionals for validation. Each member of the team evaluated each case study space by visiting the space and scoring its imageability, enclosure, human scale, transparency and complexity. For the purposes of validation the team members visited the spaces and undertook this assessment separately.

2. Urban Design Inventory

This checklist sheet was used to evaluate the urban design and environmental features and their attractiveness. Similar to the urban design audit sheet, this method was produced by the Robert Wood Johnson Foundation as a sponsor for the Active Living Research Program in order to evaluate relative space walkability (Forsyth et al. 2010). From the analytical framework, walkability is an integral part of the liveability concept which this research focuses on. This tool is longer than the urban

design audit because it looks at the existence and quality of urban design features. It deals in depth with the functional aspects of the space such as circulation and safety. It consists of around 100 questions which focus on a variety of matters such as accessibility or ease of movement, pleasurability or overall attractiveness, and the perceived safety with regard to barriers, bicycle lanes, buildings, dogs, drive ways, freeways, land uses, lighting, maintenance, olfactory character, parking, safety, sidewalks and crime (Forsyth et al 2010). The questions refer to the presence of urban features and their relative quantities (e.g. some, few, none) and are 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 far easier and straight forward to answer than those of the urban design score sheet and helps increase reliability (see Appendix D). This was done by a professional team for the purposes of validation. The team consisted of the researcher and three other architects. Each member of the team conducted the assessment separately.

3. Visual Assessment

Visual assessment was firstly developed in US by Richard Smardon and Donald Appleyard institutions for the Bureau of Land Management (Sheppard and Newman, 1979 cited in Forsyth et al. 2010). This thesis used an adapted version by Forsyth which was focused on substantiation of the relation between the visual quality of urban design of open space and the way people use the space (Forsyth et al. 2010). It was used to assess the design criteria of the case studies. This score sheet is shorter than the urban design inventory. This technique involves the use of different score sheets and assessment tools (see Appendix E). It is designed to evaluate eight key elements of visual character in each case study space. It aims to give extra consideration to a number of purely visual matters, such as colour, line, form and texture. It also examines the dominance, diversity of scale and continuity of elements. As the previous two tools, it was conducted in the case study spaces by a professional team for validation. Each member of the team conducted this in the space alone.

4. Observation and Behaviour Mapping

It is essential to test the user interaction with the space after evaluating the quality of the urban design of open space in order to evaluate its liveability. As mentioned before, observation and behaviour mapping were selected to cover the second part of research question 3, which was associated with assessing users' behaviour in the space. Observation is a very well-known method used in built environment studies to understand people's behaviour in spatial settings. Behaviour, environment, time, observer and record of observation are the main elements of this method (Bechtel et al 1987). It helps in attaining a substantial perception about the actual use of designed space (Copper Marcus & Francis 1998). Ittelson et al. (1970) initiated a recording technique to support observation method which illustrates people's activities in built environment known as behaviour mapping (Ittelson et al. 1970). Behaviour mapping is a method used widely since then by researchers to understand the human behavioural dynamics in any built environment by recording the location of subjects and measuring their activity levels simultaneously (Cosco et al. 2010). Evaluating the liveability of the selected case study required insight into users' behaviour. Therefore, both observation and behaviour mapping were selected in conducting empirical work to 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 the participants' behaviours (Bryman 2008). In this research it was controlled in the sense of pre-defining what to observe and how to record it over a predetermined time by applying the same method each time. On other hand, behaviour mapping was employed to illustrate the activities locations on the map of each case study spaces. The researcher spent an hour recording notes on pre-prepared sheets and maps about the users' behaviour twice in the morning, afternoon and evening during weekdays and weekends in each location. The recording sheet was designed first to record general issues of the visit such as location, date, time, temperature and weather; and then detailed description of users' behaviour, actions, were recorded. Sketches of the activities that were taking place such as walking, playing, sitting, cycling, sporting were marked on the map. Users' movement throughout the space were also sketched on maps. Furthermore, counts of

users' age group, gender, apparent ethnic background and their activities were taken (see Appendix F). Taking note of all activity was not an issue since spaces were not busy and generally users spent a short time in the space, excluding Muttrah Plaza during weekend evenings.

3.6.3 Questionnaire

The second question in addressing objective 3 is to evaluate the liveability of the case study spaces from a user's perspective. A questionnaire method was chosen for the empirical work to evaluate the liveability of the spaces from users' perceptions. Furthermore, it is the most appropriate tool that could be used to get a representative sample of users which could be generalised (Bryman 2012). Since the data collection targeted users in the space, the intention was to create random sampling and, due to time limitation of fieldwork, the questionnaire was administered as a face-to-face interview. A face-to-face questionnaire was designed to explore a comprehensive users' perspective of the place, using straightforward closed questions. To explore specific issues regarding users' requirements, a few open ended questions were added to the questionnaire. This method aimed to explore their perceptions about the case study spaces. 120 users participated in the questionnaire – i.e. 30 in each case study space. Questions were designed covering their visit, their evaluation of features linked to liveability of the space and their personal details (age, gender, nationality, etc.). The questionnaire was designed leaving the personal questions at the very end to allow trust to build up between the researcher and the interviewees, which helped them to open up and answer critical personal questions such as the one related to their the income (see Appendix G). A random selection of users was achieved by approaching every fifth person entering the space at a given point after completion of the preceding interview. To make this possible and accelerate the work, this part of the research was done by the researcher with help from three planning students from Sultan Qaboos University. In Municipality Square a language communication problem appeared as major issue, with many of the space users being Asian labourers who had limited command of Arabic or English, as will be discussed later in Chapter 6. Data were input into a SPSS programme to generate

correlations and relationship diagrams between the different variables in order to analyse them and produce findings.

3.6.4 Document review

Objective four of this research aimed to investigate and explore planning practice in Muscat. As will be discussed later in Chapter 4, the modern planning system in Omani is very young and not well established. Therefore, reviewing documents is one of two methods were used to meet this objective. Archival material, documents, governorate strategies and reports about planning practice in Muscat were reviewed and analysed in Chapter 4. The process that produces the current public open spaces in Muscat was examined. The main actors involved in the governance process of the case studies spaces, their roles and their responsibilities were assessed. The interactions of the involved actors within the practice system were studied.

3.6.5 Semi-Structured Interviews

The fourth objective of the research was to explore the effectiveness of planning and urban design practice in providing liveable public open space. It is a complex matter and required in depth explanation from specialists in the field to assess it. Therefore, semi-structured interview was selected as a tool to achieve this objective after reviewing relevant documents. Face-to-face interviews were designed to explore the effectiveness of urban design and planning practice in providing liveable public open space in Muscat. A comprehensive perspective of the place was examined through detailed case study spaces of selected squares and plazas. The intention was to meet professionals in urban design, architecture, planning and community representatives so that they could answer a set of questions about their perception on the effectiveness of the Omani planning system in promoting liveability in the public open spaces focusing on the selected squares and plazas. The questions was designed to cover certain issues of public open space in Muscat from historical, contemporary

understanding, importance, economic value, environmental value, political value, social value, urban design, planning practice and ending with general recommendations (see Appendix H). Questions were designed as open ended and each interview lasted around 45-60 minutes. Meeting arrangements were made in advance and a confidential letter was sent to each interviewee.

Table 3.2 shows all the 22 professionals and community representatives who were interviewed and a brief description of their positions. All interviews, except one, were audio recorded, which made it easy to capture and transcribe information later. Interviewees included both those who took part in the design of the selected locations and those in charge of urban design and planning in departments within government, private and education sectors. The survey questionnaire was targeting the case study space users; this raises the question of the perception of those in the community who do not use the spaces. In order to reach them, community representatives were interviewed to explore why they are not using the spaces. One of the Vice Chairmen from Majlis Al-Shura (Parliament Council) was interviewed to understand the decision making process. This method aimed to explore professionals' knowledge of good quality public open spaces and influence of planning and urban design practice in producing them in Muscat.

Interviewee	Position
Academic	A professor from the Department of Civil and Architectural Engineering, College of Engineering, Sultan Qaboos University.
	Two lecturers from the Planning Department, College of Arts and Social Sciences, Sultan Qaboos University.
	Four lecturers from the Architecture Department, College of Engineering in the High Technical College, Muscat.
Architect	Two architects from the Oman Tourism Development Company with long experience in Muscat Municipality. One of these was one of the senior architects and part of provision process of three of the selected case study spaces.
	Three architects from Central Design Directorate, Muscat Municipality.
	A senior architect from the project management department, Diwan of Royal court affairs.
Planners	Two planners from Muscat Planning, the General Directorate of Planning at the Ministry of Housing.
	A senior authorised architect from Muscat Planning, the General Directorate of Planning at the Ministry of Housing.
	A professor in planning from the Urban Planning Directorate, the High Supreme of Town Planning.
	An senior planner from the Urban Planning Directorate, the High Supreme of Town Planning (the High Supreme of Town Planning was cancelled and replaced by the Supreme Council for Planning in 2012; these interviewees have become part of the new authority)
Policy maker	Authorised policy maker from *Majlis Al'Shura* (the Parliament Council).
Community representative	Three community representatives who are elected by the community to represent them in *Majlis Al'Shura* (the Parliament Council).

Table 3.2: The interviewed professionals and community representative.

As previously discussed, different types of methods were selected to meet research objectives and answer the research questions. Data collection tools were designed to evaluate liveability concepts in, public open spaces learned from the literature review. Table 3.3 provides a brief overview of the research objectives, their related questions, the chosen method, participants in each tool, methods and the expected outcome of the findings from each method.

Research objective	Research question	Data collection	Participants	Methods	Expected Data Finding
Obj.1: To review the concept of liveable public open space and the planning and urban design systems underpinning its provision.	R.Q.1.1: How has liveable public open space been conceptualised and analysed in international literature produced in the West? R.Q.1.2: How has liveable public open space been conceptualised and analysed in international literature produced in the Middle East context? R.Q.1.3: What planning and urban design approaches have developed around providing liveable public open space in the West? R.Q.1.4: What planning and urban design approaches have developed around providing liveable public open space in the Middle East?	Literature review and official documents (secondary data)	The researcher	Reviewing relevant books, articles, journals, conference papers and websites.	A general understanding of international (with focus on Middle East and Oman) experience in developing good public spaces, especially squares and plazas. Finding the gaps in knowledge in the research area where this research focuses on.
Obj2: To develop an analytical framework for liveable public open space from the Western and Middle-Eastern experience.	Q.2.1. How can the concepts of liveable public open space be analysed in a Middle East context?		The researcher	Categorising the concepts learned from the literature review.	Producing an analytical framework
Obj3: To examine the extent to which liveable public open space is being provided in the Middle East, in particular in Muscat, using the above analytical framework.	R.Q.3.1: To what extent are the current public open spaces in Muscat liveable, from a professional's perspective?	Urban design audit check list tool. (primary data)	Professional team of 4 experts	Site visits to tally presence, absence or degree of selected urban design features on score sheets. (Quantitative)	Final scores based on weighting systems in the audit
		Urban Design Inventory check list tool. (primary data)	Professional team of 4 experts	Site visits to tally presence, absence or degree of selected Urban-design features on score sheets. (Quantitative)	Final scores based on weighting systems in the audit
		Visual assessment (primary graphical techniques)	Professional team of 4 experts	Analysis of built environment. (Quantitative)	Final scores based on weighting systems in the audit.
		Observation and Behaviour mapping (primary graphical techniques)	The researcher	Users behaviour pattern. (Qualitative)	Understanding of Behaviour pattern
	R.Q.3.2: To what extent are the current public open spaces in Muscat liveable, from a user's perspective?	Questionnaire (primary data)	30 space users in each case study	Closed structured question face-to-face interview. (Quantitative/Qualitative)	Users' perception of case study spaces

Obj.4: To examine the effectiveness of planning and urban design practice in providing liveable public open space in Muscat through detailed case studies of selected squares and plazas, applying the above analytical framework.	R.Q.4.1: Why is public open space in the Middle East the way it is? R.Q.4.2: What is the process whereby public open space is provided in the Middle East? R.Q.4.3: What are the weaknesses in the planning and urban design to provide liveable public open space in the Middle East?	Document review	The researcher	Reviewing and analysis of archival materials, documents, governorate strategies and reports gathered about planning practice in Muscat.	Comprehensive knowledge about the planning process in Muscat.
		Semi-structured interview (primary data)	Local professionals (architects, urban designers, planners) and decision-makers	Semi-structured interview using open ended questions with urban design professionals involved in developing case study. (Qualitative).	Comments and written submissions from participants about their perception on the provision system
Obj. 5: To draw lessons from the Omani case study and recommend guiding principles to enhance the existing and the future development of public open spaces in Middle-Eastern cities.	R.Q.5.1: To what extent are conditions for liveable public open space specific to an area, eg. the Middle East?		The researcher	Synthesis of the main findings.	Highlight the weaknesses in the current public open space and its provision processes.
	R.Q.5.2: What improvements can be made to the planning and urban design systems in Oman to achieve appropriate liveable public open space?		The researcher	Draw lessons from the case studies	Recommendations to improve the public open spaces in Oman and other Middle Eastern countries.

Table 3.3: Methods of inquiry to meet the research objectives and questions

3.7 Ethical issues

Ethical principles are fundamental considerations in producing 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 Grandall categorise these principles into four main parts (Bryman 2008): firstly ensure that there is no physical, mental or social harm to participants and researcher; secondly, check whether there is 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 2008).

With respect to causing no harm to participants, no pressure was impose in any way on participants to be part of the research. As the research involved spending long periods of time in public spaces, risk for the researcher as a woman was a consideration; therefore the researcher made all visits to the case study spaces, either for questionnaire or observation purposes, accompanied by a family member. In both interviews and questionnaire, sensitive issues that could cause potential complications were avoided. The author tried to facilitate all conversations sticking to the designed questions whenever the discussion drifted off the course of the research purpose. Regarding informed consent, participants' name or any personal question that may lead to their identity being disclosed was avoided in the questionnaire. Interviewees' personal identity was kept anonymous in both interview transcripts and recordings to avoid these data being accessed by anyone but the researcher. Regarding ensuring there is no element of deception to participants in this research, all participants were informed of the author's position as a PhD researcher, brief of the topic, the purpose of their research and the value of their contribution. Interviewees received a letter from the researcher explaining their contribution. In order to ensure there is no invasion of privacy, the interview transcripts and recordings were coded using numbers or pseudonyms when referred to in analysing the data and reporting.

3.8 Limitations

The process-oriented aim of this study is to explore weaknesses in providing liveable public open spaces in Muscat, not for the sake of criticism itself but to enhance the system in practice. Implementing of the selected data collection methods of this thesis faced several limitations. One of them was that some people in Oman treated topics related to government as very sensitive. An interviewee from the Ministry of Housing answered the semi-structured questions very conservatively, and another cancelled the meeting at the very last minute because they felt uncomfortable talking about the provision process, as for them this is a confidential issue. Some participants in the questionnaire survey appeared to feel uncomfortable answering a question about whether the space is provided for them or to please a high authority.

Another limitation was regarding language of communication. As discussed in Section 4.3 there are different ethnic groups in Muscat. Asian labour is one of them, who barely talk Arabic or English. This was an issue in using the questionnaire with users from such group in the case study spaces. As explained earlier, the researcher had set a strategy for selecting survey participants randomly as every fifth person entering the space from an allocated point. However, this was not always the case as the researcher had sometimes to skip some potential participant due to the language barrier, especially in Municipality Square. Another general limitation was related to the fact that this research was conducted abroad and the empirical work was restricted by funding and time available for fieldtrips.

3.9 Conclusion

This chapter presented an analytical framework based on the main planning and urban design concepts in providing liveable public open spaces from Western and Middle-Eastern experiences in order to apply it to the empirical cases studied in this research. This research is predominately based on subjectivism as an interpretive epistemological paradigm. Social constructionism is the theoretical perspective of

this study. Qualitative and quantitative approaches were combined in selecting methods for collecting data. Case study spaces were selected to implement the empirical work, the findings and analysis of which are presented in the following four chapters.

Chapter 4: Oman Profile

4.1. Introduction

This chapter provides an introduction to Oman, setting out the background against which the research case studies can be both understood and analysed. There is also an analysis of the planning and urban design systems in Oman and Muscat, which contributes to meeting research objective 4. Firstly, there is a discussion of the geographic location, climate and society of Oman and Muscat. This is followed by a more detailed examination of the history of its urban development, along with the contemporary planning system and the current situation regarding public open spaces in Muscat. It concludes with the identification and description of the selected case study spaces.

4.2. Geographic location and climate conditions

Geographically speaking, Oman occupies the extreme east and south-east of the Arabian Peninsula, as shown in Figure 4.1. To the north it borders the United Arab Emirates, with Saudi Arabia to the west and Yemen to the south-west. The Gulf of Oman separates Oman from Iran in the north. A detached segment of the country in the north (known as the Musandam Peninsula) is separated from the rest of Oman by an 80km wide strip of land belonging to United Arab Emirates. The country has over 1,600 kms of coastline bordering the Indian Ocean (UN 1987). The total area of the country is 309,500 sq km (Dean 2004).

The country can be geographically classified into four major regions: the coastal plain (which is largely inhabited); the plateau (which is mainly a cultivation area around oases); a range of mountains, all of which are barren apart from the Jabel Akhadar in Nazwa; and a mountainous area in Dhofar, which is geographically distinct from the northern part of the country (UN 1987). The Rub al Khali, (or the Empty Quarter Desert) is a large, inhospitable area of 650,000 square km, which lies

mainly in the south-east of the country. The majority of this desert is found in south-eastern Saudi Arabia, although small parts of it are in the Yemen and Oman.

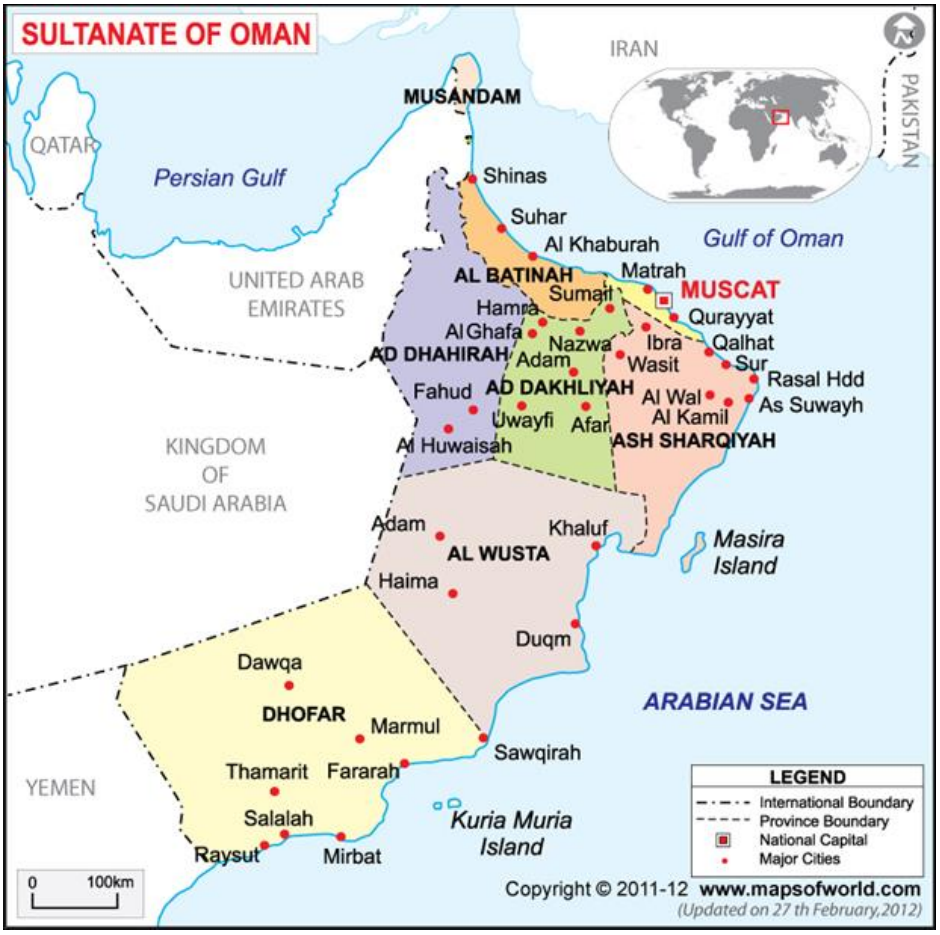


Figure 4.1: Oman map (Source: http://www.mapsofworld.com/oman/map.html)

Due to its geographical location on the south eastern side of the Arabian Peninsula, the climate in Oman can be classified as one that is subtropical dry, i.e. an exceptionally hot desert climate, with low annual rainfall combined with high humidity. It also experiences a wide range of temperatures between maximum and minimum in the summer, particularly in the interior of the country (Federal Research Division 2010). Throughout the country, including Muscat, the summer begins in mid-April and lasts until October. During this time there is no rainfall, while

temperatures can exceed 50C in the shade and humidity reaches 90%. The Dhofar region in the south of the country, however, has a light monsoon climate due to the cool winds originating from the Indian Ocean, with a 26C average temperature and a high rainfall average during the summer months (Federal Research Division 2010). Winter is the coolest period in both Muscat and the major part of Oman, with temperatures between 15C and 23C during the day, accompanied by short, but heavy, cloudbursts and thunderstorms (see Table 4.1). Spring and autumn are warm, mainly dry and comfortable for the inhabitants, with 25C to 35C during the day and 15C to 22C at night (Federal Research Division 2010).

Month	**Temperature C 2012**	
	Minimum	**Maximum**
January	16.7	25.1
February	17.8	26.4
March	20.3	29.5
April	24.2	34.7
May	28.7	39.6
June	30.3	40
July	30.1	38
August	28.2	35.6
September	26.8	35.6
October	24.2	34.6
November	20.8	30.3
December	18.3	26.8

Table 4.1: Temperature average in Muscat (Source: Meteorological affairs DG of Meteorological and Air navigation, Public Authority for civil aviation)

The climatic conditions have had considerable impact on the urban design of traditional human settlements in Oman. An understanding of the climate is therefore an important aspect of understanding the physical layout and the patterns of the built environments in such settlements (Ching 2011). However, questions arise in relation to the extent to which contemporary urban design in Oman (including the design of open spaces) continues to respond to climatic conditions. This aspect is explored further in the following chapters.

4.3. Society in Oman, with a focus on Muscat

The history of Omani society is that of a strong tribal structure, with long feuds and wars between the separate tribes. Officially, Omanis are those who speak Arabic and belong to tribe. Since the late 19th to the early 20th century, Oman was a moderate regional power, having formerly possessed a sultanate extending across the Strait of Hormuz to Iran and modern day Pakistan, and south to Zanzibar, on the coast of south-east Africa (see Figure 4.2).

The emergence of Al-Nahda, the 'Omani Modern Renaissance Era' in 1970 is a milestone in the history of Oman. An increase in the diversity of languages and ethnic groups within the country was created through both the return of Omanis who had moved elsewhere in previous generations, and the influx of other migrants. Despite their small size, the groups of returned Omanis, possessed political and commercial influence, while the non-Omani migrants also gained commercial influence. Since 1970, the government has been integrating into society all ethnic groups with some claim to Omani origin, through the concept of *'Omani citizen'*. This aims to create a contemporary and just society. Moreover, Omani nationality has also been given to Omani immigrants who possessed strong evidence of their descent from certain Arab tribes. This has created citizens of Oman with a wide variety of ethnic backgrounds. It is not seen as politically correct in Oman to classify Omanis according to their ethnicity, and no official data or statistics are recorded on the subject. However, the large inflow of expatriates in the last 40 years (due to oil-related development) has created a social fabric of even greater complexity, particularly in the capital, Muscat.

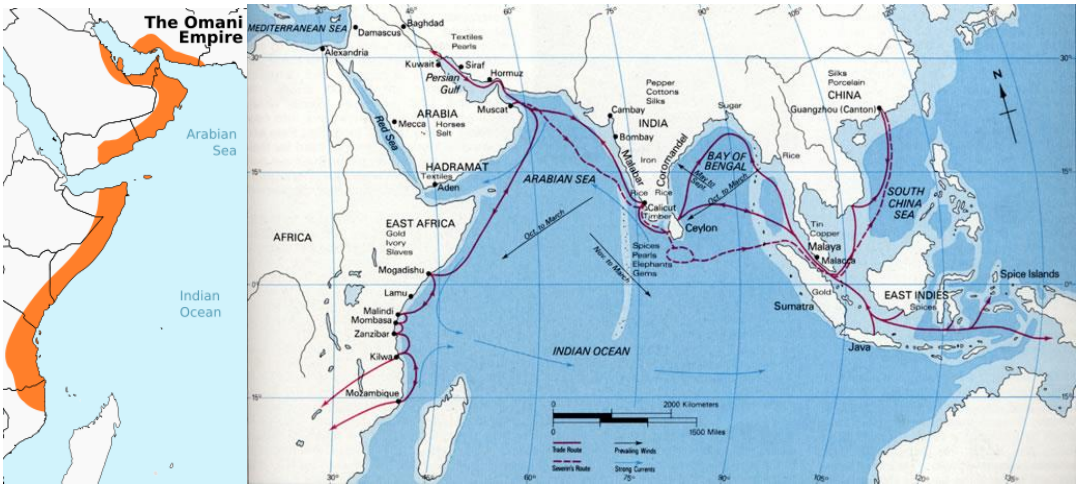


Figure 4.2: The Omani empire and trade routes in the late 19th and early 20th centuries (Sources: http://www.answers.com/topic/oman and http://www.seaceramic.org.sg/events/agm07/john_guy.html)

4.3.1. Demography

A general knowledge of the demographic features of the population of Oman is essential for the later comparison in the following two chapters of the collected data concerning the type of the current users in the case studies. This research uses the statistics of the latest General Census of Population, Housing and Establishments 2010, published by the Ministry of National Economy and The Statistical Year Book (2011). This is based on the 2010 census issued by the National Centre for Statistics and Information. At the time this census was conducted, Oman was divided into four governorates or Muhafazah: (Muscat, Musandam, Al-Buraymi and Dhofar) and five regions (Al-Bathinah, Adh-Dahirah, Ad-Dakhliyah Ash-Sharqiyah and Al-Wusta) (see Figure 4.3). However, this division was modified in 28 October 2011, when all regions were changed to governorates and both the Al-Bathinah and Ash-Sharqiyah regions were divided into north and south governorates. Contemporary Oman is therefore divided into eleven governorates.

According to the 2010 census, the total population of Oman had risen to 2,773,479 (see Table 4.2). The statistics indicate that Omanis represent 70.6% of the total population, with expatriates making up 29.4%. The capital city of Muscat has the

largest population, this being recorded in 2010 as 775,878 (see Figure 4.3). As shown in Tables 4.2 and 4.3, the Muscat governorate has the highest number of residents in Oman, with 28% of the total population. 52.46% of these are Omani and 47.54% expatriate. The majority of expatriates are temporary workers, mainly from India, Pakistan, Bangladesh, Morocco, Jordan, Sudan, Egypt and the Philippines (The Official Web Portal of the Oman Census Administration 2011). The Muscat governorate has six states: Muttrah, Bawshar, A'Seeb, Alamrat, Muscat and Qurayyat. In the Muscat State (the location of Palace Square), the population of Omani residents is more than double that of expatriates, as shown in Table 4.4. The same table, however, reveals the opposite ratio between the Omani and expatriate population in Muttrah State, where Municipality Square and Muttrah Plaza are located. Ministries Plaza is located in Bawshar State, where Omanis make up slightly over half the expatriate population (see Table 4.4).

The Omani male population of Muscat Governorate is higher by 2.8% than the female (see Table 4.5). Despite a difference in actual ratios, this is the case in each of the three states in which the four selected case studies of this research are located (see Table 4.5). The expatriate male population in Muscat Governorate is considerably higher than female. Muscat State demonstrates a considerable difference between the genders in terms of population, with nearly six times as many male expatriates as female. The female expatriate population is just over half the male expatriate population in Muttrah State, and less than half in Bawshar State (see Table 4.5).

The considerable demand for development (combined with a shortage of skilled manpower amongst the native population) has led the Gulf Cooperation Council (GCC) countries (see section 4.5) to be dependent on expatriate labour (Kawach 2011). The main expatriate community in the GCC is made up of Asian workers from India, Pakistan, Bangladesh, Afghanistan, Sri Lanka, Indonesia and the Philippines. A study conducted by the International Organisation for Migration (IOM) estimated that there were over 16 million expatriates living in the GCC in 2005. The study further indicates that Saudi Arabia has the largest number of

expatriates in the GCC, these being estimated at around 8.4 million. UAE (over six million foreigners), while the rest are based in Kuwait, Qatar, Oman and Bahrain (Kawach 2011). Asian expatriates are temporary male workers who work for the lowest incomes and occupy the lowest social hierarchy in GCC (Malecki & Ewers 2007: cited in Naithani 2008). They therefore immigrate without their families, thus creating the lack of balance between the genders.

Statistics also reveal an imbalance between urban and rural populations. In 2010, the urban population of Oman was up to 71.7% of the total population, while the rural population dropped to 28.3% (Trading Economics 2014). This phenomenon is highly visible in Muscat, due to the fact that it is the capital city and it is considered as the main commercial, economic and administrative centre in Oman (Alrbdawi 2010). Immigration to Muscat from other parts of the country has been vastly increased during the last 40 years, due to the fact that cities offer improved job opportunities, along with better health services, education, lifestyle and other facilities (Alrbdawi 2010). There is no data available, but from the observations of residents, such immigrants mostly remain in Muscat during the week, with the majority leaving for weekends and holidays. This is due to the fact that this internal migration is still in its first generation, and therefore strong links remain to both their families and tribes in their original villages.

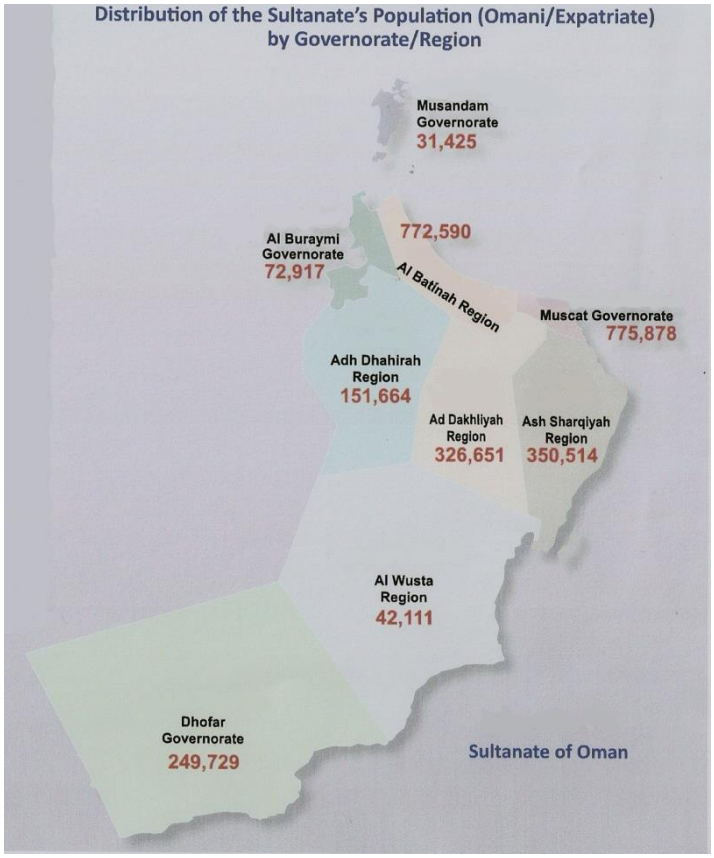


Figure 4.3: The distribution of the Sultanate's population (Oman/ Expatriate) by Governorate/ Region. (Source: Adopted from General Census of Population, Housing & Establishments 2010, Ministry of National Economy)

Governorate/ Region	Omani				Expatriate				Total			
	2003		2010		2003		2010		2003		2010	
	%	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%	NO.
Muscat Governorate	21.4	381,612	20.8	407,006	44.8	250,461	45.2	368.572	27.0	632.073	28.0	777,878
Al Batinah Region	31.7	564,407	31.7	620,950	15.9	89,098	18.6	151,640	27.9	653.505	27.9	772,590
Musandam Governorate	1.2	20,324	1.1	21,898	1.5	8,054	1.1	9,527	1.2	28.378	1.1	31,425
*Adh Dhahirah Region	8.3	147,689	6.1	118,877	10.6	59,326	4.0	32,787	8.8	207,015	5.5	151,664
Al Dakhliyah Region	13.2	235,337	13.7	269,069	5.7	31,803	7.1	57,582	11.4	267,140	11.8	326,651
Ash Sharqiyah Region	14.8	264,369	15.0	293,394	8.8	49,392	7.0	57,120	13.4	313,761	12.6	350,514
Al Wusta Region	0.9	16,861	1.0	19,043	1.1	6,122	2.8	23,068	1.0	22.983	1.5	42,111
Dhofar Governorate	8.5	150,959	8.4	164,073	11.6	65,001	10.5	85,656	9.3	215,960	9.0	249,729
*Al Buraymi Governorate	-	-	2.2	43,026	-	-	3.7	29,891	-	-	2.6	72,917
Sultanate	100	1,781,558	100	1,957,336	100	559,257	100	816,143	100	2,340,815	100	2,773,479

Number and Percentage Distribution of population (Omani/Expatriate) by Governorate/Region (2003 - 2010)
* The Al Buraymi Governorate was instituted in 2008 as separate from the Adh Dhahirah Region

Table 4.2: Number and percentage distribution of population (Omani- Expatriate) by governorate/ region (2003-2010) (Source: Table 4: General Census of Population, Housing & Establishments 2010, Ministry of National Economy)

Governorate/Region	Omani			Expatriate			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Muscat Governorate	209,062	197,944	407,006	266,084	102,788	358,872	475,146	300,732	775,878
Al Batinah Region	313,404	307,546	620,950	120,629	31,011	151,640	434.033	338,557	772,590
Musandam Governorate	11,408	10,490	21,898	7,057	2,470	9,527	18,465	12,960	31,425
Adh Dhahirah Region	59,716	59,161	118,877	27,728	5,059	32,787	87,444	64,220	151,664
Al Dakhliyah Region	134,448	134,621	269,069	47,507	10,075	57,582	181,955	144,696	326,651
Ash Sharqiyah Region	146,363	147,031	293,394	43,436	13,684	57,120	189,799	160,715	350,514
Al Wusta Region	9,753	9,290	19,043	22,241	827	23,068	31,994	10,117	42,111
Dhofar Governorate	84,021	80,052	164,073	66,350	19,306	85,656	150,371	99,358	249,729
Al Buraymi Governorate	22,415	20,611	43,026	20,789	9,102	29,891	43,204	29,713	72,917
Sultanate	990,590	966,746	1,957,336	621,821	194,322	816,143	1,621,411	1,161,068	2,773,479

Table 4.3:Gender distribution of population (Omani/ Expatriate) by governorate/ region (2010) (Source: Table 5: General Census of Population, Housing & Establishments 2010, Ministry of National Economy).

Wilayat	Omani				Expatriate				Total			
	2003		2010		2003		2010		2003		2010	
	%	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%	NO.
Muttrah	14.8	56,506	11.7	47,487	38.7	97,020	27.8	102,637	24.3	153,526	19.3	150,124
Bawshar	18.6	70,791	17.9	72,977	31.8	79,629	32.3	119,285	23.8	150,420	24.8	192,235
As Seeb	42.6	162,522	45.4	184,909	24.3	60,927	32.0	118,083	35.4	223,449	39.1	302,992
Al Amrat	9.3	35,548	11.3	45,643	2.2	5,590	3.5	12,757	6.5	41,138	7.5	58,400
Muscat	5.4	20,732	4.7	19,266	1.7	4,161	2.2	7,950	3.9	24,893	3.5	27,216
Qurayyat	9.3	35,513	9.0	36,724	1.3	3,134	2.2	8,187	6.1	38,647	5.8	44,911
Muscat Governorate	100	381,612	100	407,006	100	250,461	100	368,872	100	632,073	100	775,878

Table 4.4: Number and percentage of population (Omani/ Expatriate) in Muscat governorate by Wilayat (State) (2003-2010) (Source: Table 8: General Census of Population, Housing & Establishments 2010, Ministry of National Economy).

Wilayat	Omani			Expatriate			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Muttrah	25,284	22,203	47,487	67,564	35,073	102,637	92,848	57,276	150,124
Bawshar	37,656	35,321	72,977	86,242	33,016	119,258	123,898	68,337	192,235
As Seeb	95,234	89,675	184,909	88,755	29,328	118,083	183,989	119,003	302,992
Al Amrat	22,944	22,699	45,643	9,716	3,041	12,757	32,660	25,740	58,400
Muscat	9,857	9,409	19,266	6,762	1,188	7,950	16,619	10,597	27,216
Qurayyat	18,087	18,637	36,724	7,045	1,142	8,187	25,132	19,779	44,911
Muscat Governorate	209,062	197,944	407,006	266,084	102,788	368,872	475,146	300,732	775,878

Table 4.5: Gender distribution of population (Omani/ Expatriate) in Muscat governorate by Wilayat (State) (2010) (Source: Table 9: General Census of Population, Housing & Establishments 2010, Ministry of National Economy).

For the purposes of comparison with data from the questionnaire (see Chapter 6), the statistical data relating to age (see Appendix I) was simplified and restructured in Table 4.6, being classified as the following: Young People, 0-14 years; Adult, 15-64 years; and Elderly, 65 and over. Moreover, an additional division of the same data (to be compared to observation and behaviour mapping data – see Chapter 5) is presented in Table 4.7 as: under 15; 15-19; 20-29; 30-39; 40-49; 50-64 and over 65 years. The population age distribution details reveal that 27.8% are children, 69.5% adults and 2.7% elderly. The population in Oman is therefore youthful, with the age structure dominated by young people (see Figure 4.4). Young people below the age of 15 years represent approximately one third (35.3%) of the total Omani population (i.e. excluding expatriates). The adult age group of 15-64 years is 61.2% of the population, again excluding expatriates. The statistics indicate that elderly people aged 65 years and over make up only 3.5% of the total Omani population. On the other hand, the statistics illustrate the expatriate age structure as 9.9% children, 89.4% adult and 0.7 elderly. For the population of Oman as a whole, including Omani and expatriate, the adult age group of 15-64 years forms 69.5% of the population (see Tables 4.6 and 7.7).

Age group	Omani		Expatriate		Total
Young people (0-14 years)	35.3%	Boys 51.0%	9.9%	Boys 51.9%	27.8%
		Girls 49.0%		Girls 48.1%	
Adult (15-65 years)	61.2%	Male 50.4%	89.5%	Male 79.0%	69.5%
		Female 49.6%		Female 21.0%	
Elderly (65 and over)	3.5%	Male 51.2%	0.6%	Male 60.0%	2.7%
		Female 48.8%		Female 30.0%	
Total	100%		100%		100%

Table 4.6: Group age adopted from the total population in the Sultanate by nationality. (Source: The Statistical Year Book (2011), National Centre for Statistics and Information).

Age group		Omani		Expatriate	Total
Under 15	35.3%	Boys 51.0% Girls 49.0%	9.9%	Boys 51.9% Girls 48.1%	27.8%
15-19	12.5%	Male 51.3% Female 4.9%	1.7%	Male 53.3% Female 46.7%	14.2%
20-29	22.8%	Male 50.8% Female 49.2%	30.6%	Male 81.7% Female 18.3%	53.4%
30-39	13.0%	Male 50.1% Female 49.9%	31.7%	Male 76.7% Female 23.3%	44.7%
40-49	6.7%	Male 49.7% Female 50.3%	17.5%	Male 79.5% Female 20.5%	24.2%
50-64	6.2%	Male 48.1% Female 51.9%	8.0%	Male 82.0% Female 18.0%	14.2%
65 and over	3.5%	Male 51.2% Female 48.8%	0.6%	Male 60.0% Female 40.0%	4.1%
Total	100%		100%		100%

Table 4.7: Age structure percentage adopted from the total population in the Sultanate by nationality. (Source: The Statistical Year Book (2011), National Centre for Statistics and Information).

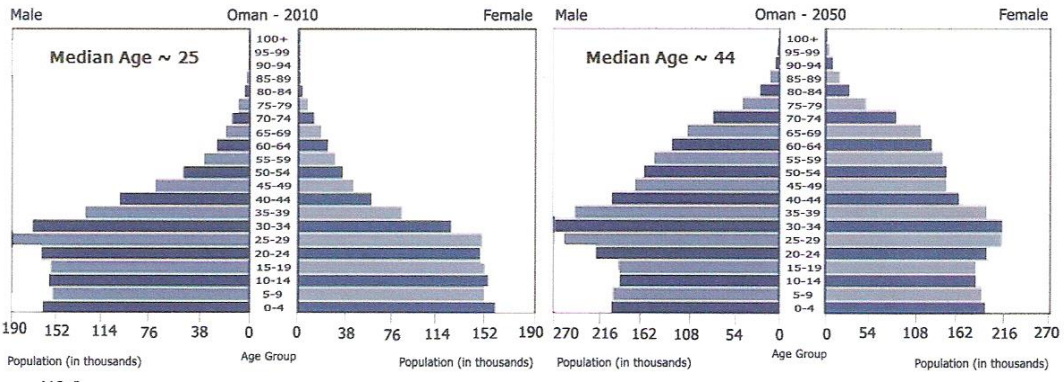


Figure 4.4: Population pyramids 2010/2050 (Source: Raghu 2012)

4.4. Urban development in Oman and the evolution of public open space

As shown in Figure 4.5, the different eras of Oman have dramatically influenced the character of its urban development. This process began with the indigenous inhabitants five thousand years ago, followed by the Sumerian era during the third century. Arabs then moved in from Yemen around the second century. This was followed by the Islamic era. In the sixteenth century, Oman was colonised by the Portuguese, followed in the eighteenth century by the golden age of the Omani empire. Finally, the current 'renaissance' era emerged in 1970. There are two main types of urban development in Oman, including both coastal and oasis, as will be discussed below.

Urban development in Oman can be divided into three main periods. Throughout the history of Oman, up until the Islamic era, urban settlements were shaped by social and climate factors. Settlements emerged through what is now seen as a process of informal urban growth. From the early Islamic era in 800 AD until the renaissance era, urban settlement was shaped by Sharī'ah, rather than by formal planning. As an Islamic country, urban development in this period was provided by the users in a 'bottom-up' system. The nature of urban growth in this era tended to be organic in nature (see Chapter 2). This was manifested primarily through two types of urban development, including coastal and oasis, as will be discussed below. Little has been documented concerning the nature of public open spaces during these pre-modern periods. It was only in the 1970s, during the renaissance era, that formal planning regulations and procedures were first introduced (see Figure 4.5).

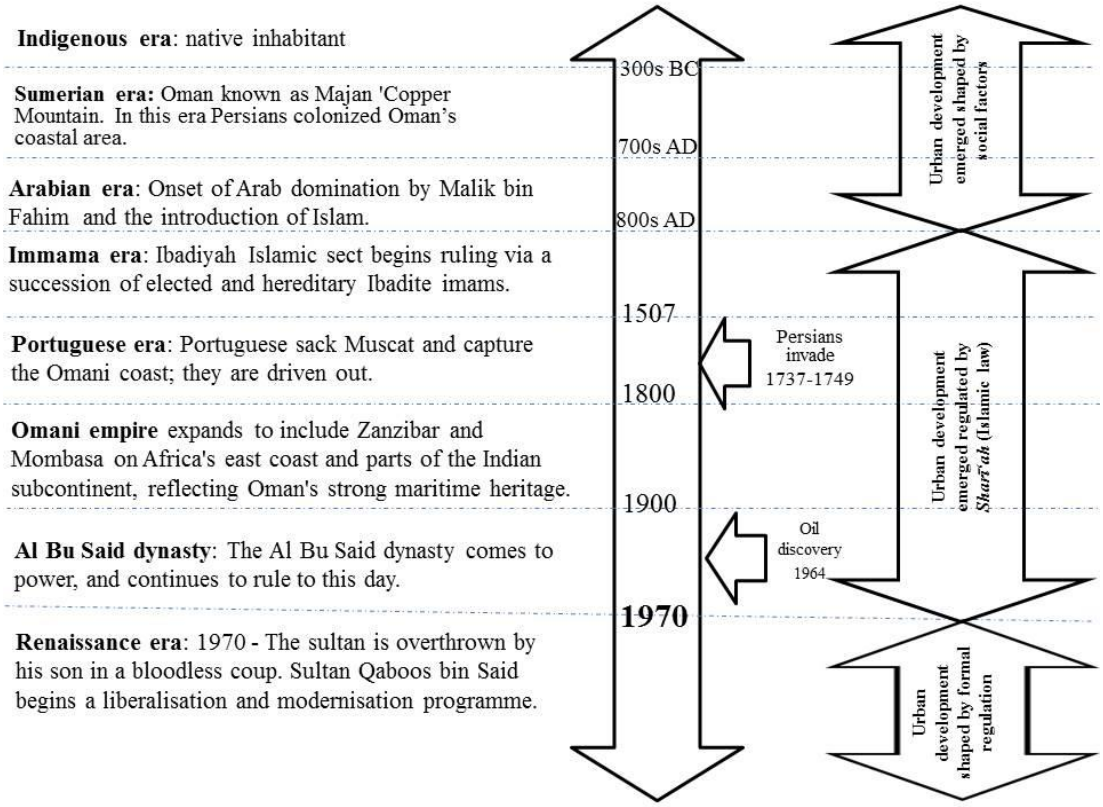


Figure 4.5: A chronology of key events (Source: Adapted from: BBC News Middle East, Oman profile)

During the Sumerian era, Oman was known as Majan *'Copper Mountain'*. Archaeologists believe that modern day Sohar is the ancient Majan, which existed in the 3rd millennium BC (Dean 2004). It was during this time that the Persians colonised the coastal region of Oman, and consequently their rulers influenced the cultural and trading environments of the region (Kechichian 1995). They influenced Oman's built environment in two areas: firstly by introducing the irrigation system of the falaj. This uses the topography of the land and the mechanism of gravity to run underground water up to the ground surface in channels for irrigation by excavating through a series of vertical wells, with a spacing distance of 1.5m diameter and at 15-30m. As shown in Figure 4.6, these vertical wells are connected through a series of tunnels with diameters of between 0.5-1m (Costa 2001). Secondly, they assisted in establishing trade connections with Africa, India, and China. This led the Omanis to become pioneers and leaders of the sea trade in the Oriental world (Clements 1980).

Iram (dating from 3000 BC), is an example of a town from this era. It was discovered by NASA in Rub' al Khali (The Empty Quarter Desert) in Oman in 1984 (El-Naggar 2002).

Urban development as it is understood today is closer to the process that occurred in Iram and towns of this era. The American archaeological team working in the area were forced to postpone their work and any further research in Iram due to the Gulf War (El-Naggar 2002). However, it has been established that the key urban development of Iram was centred on an octagonal castle, surrounded by an organic development (El-Naggar 2002). Ancient Sumeria housing arrangements and access routes were generally organic in form (Morris 1994).

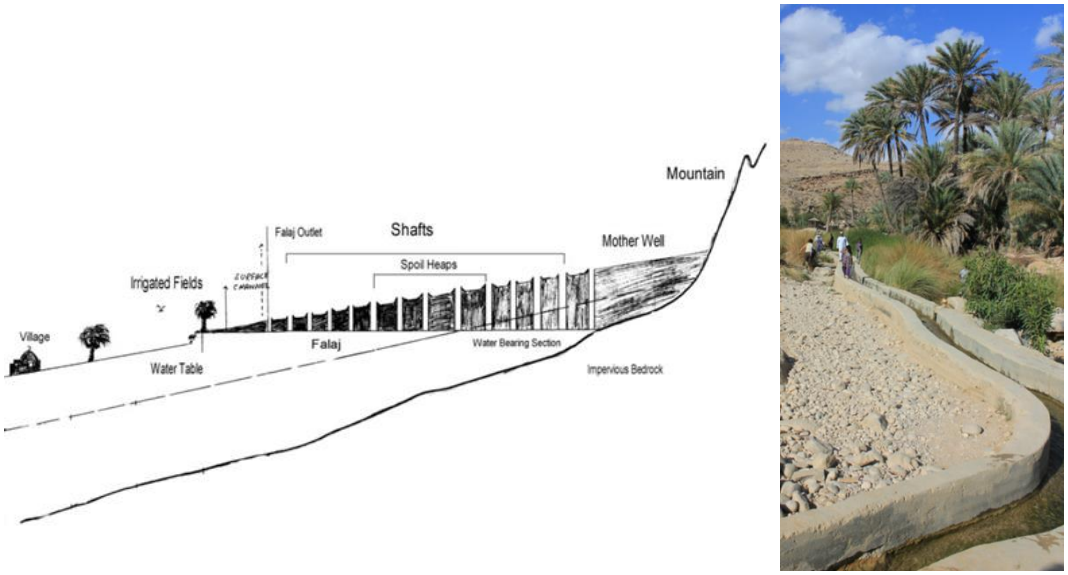


Figure 4.6: Falaj system (Sources: http://tectonicablog.com/?p48431&paged=127 and http://andyinoman.com/tag/famous-wadis-oman/)

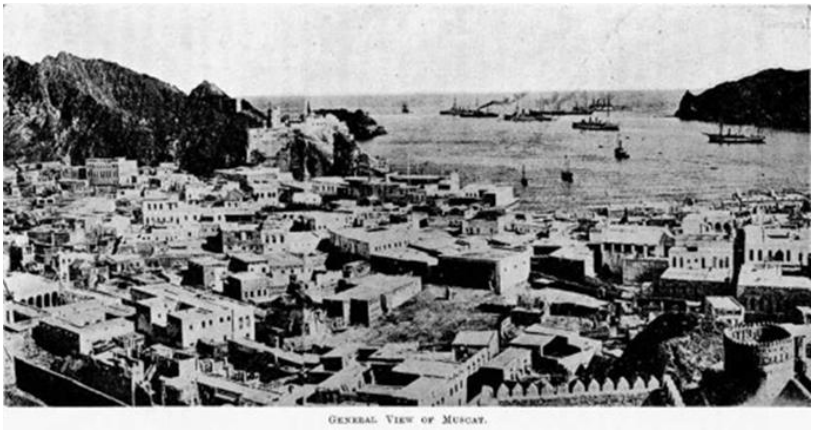
Ma'arib Dam (or the Dam of Arim) was constructed around the eighth century BCE to block the Wadi Adhanah (dry river of Adhanah) in the valley of Dhana in the Balaq Hills in Yemen. It was built during the Kingdom of Sheba for water supply and irrigation, and was 15 metres high and nearly 600 metres long (see Figure 4.7). When the dam collapsed in the first or second century AD, the resulting flood caused Arabs to migrate from the region of southern Arabia to the rest of Peninsula. Malik

bin Fahim al Azdi was the first invader of note, establishing Manah as his first settlement (Dean 2004). Harat al-Bilad in Manah is an example of a town from this era. It has an organic layout with two forts for defensive purposes (Al-Abdulsalam 2002). Archaeologists have established that this village was based on a town built by Malik ibn Faham when he first arrived in Oman (Al-Abdulsalam 2002). As mentioned previously, during this era a town was developed through organic growth regulated by social rules (Al-Abdulsalam 2002). Figure 4.8 shows architectural features and the urban character of Harat al-Bilad, the principal settlement of Manah, an important oasis of central Oman.

Figure 4.7: Ma'arib Dam or Dam of Arim (Sources: http://patentpending.blogs.com/patent_pending_blog/2005/09/the_marib_dam_o.html and http://arabian-archaeology.com/arch3iron.htm)

Figure 4.8: Historical village of Harat Al-Bilad Manah(Sources: http://www.oman-tours.com/about-oman/culture-overview-crafts-architecture-music-arts/architecture-overview/, http://home.kpn.nl/lilian_jan_schreurs/oman/Manah.htm, http://main.omanobserver.om/?p=74594, http://www.y-oman.com/2014/01/manah-fortress-fiqain/ and http://venture2doha.blogspot.co.uk/2010/11/nizwa-pre-eid-preparations.html)

In the early period of Islam, the Al-Azd tribe were the rulers of Oman (Dean 2004). In the 10th century, coastal cities developed, including Sohar, which (due to Omani mariners trading as far as China) is thought to have been the largest and most significant city in the Arab world (Dean 2004). Muscat, Muttrah and Hormuz also became major cities in the region, due to their geographical location (Morris, 1994). As a Middle-Eastern country, Oman implemented Islamic principles regarding decision-making about each aspect of life by evaluating, judging and criticising (Elsheshtawy 2004). Towns in this era were regulated by Islamic disciplines. As mentioned previously, Sharī‘ah influenced urban growth, which created an organic process of growth for towns and villages (Morris 1994). Figure 4.9 shows Muscat in 19th Century, closely resembling the way Muscat would have appeared during this era.



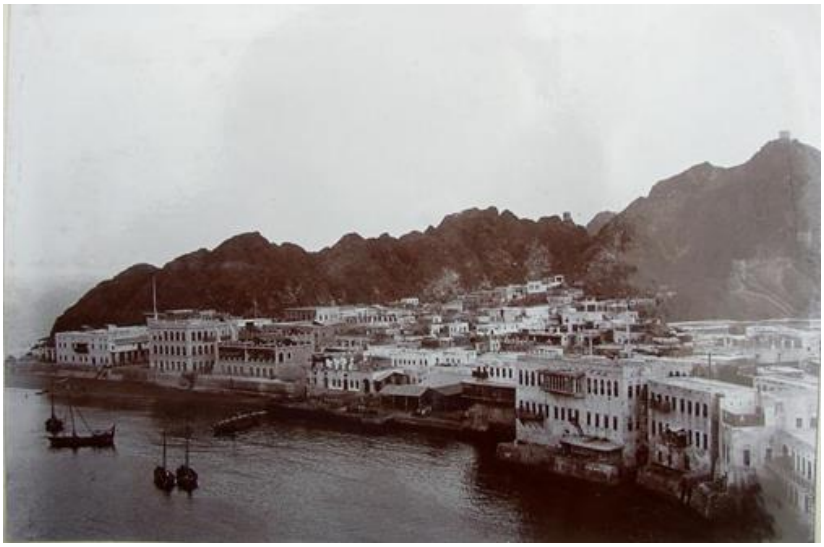


Figure 4.9:Muscat ancient city (Sources: http://en.wikipedia.org/wiki/Muscat,_Oman and http://www.heathcaldwell.com/hh_sultan_taimur_bin_turki_1913)

Muscat, Muttrah and Sohar are examples of coastal towns. Costal urban design layout was influenced by the proximity to the sea and related maritime activities (such as fishing). The theme of such development was found in a continuous strip of connected settlements (Ragette 2003; Bandyopadhyay 2006). The city centre, the suoq and masjid and the residential areas were linked by, and surrounded with, walls. Similar to other Middle Eastern cities, public open spaces were within the city centre, and were associated with the masjid and souq (or market), where residents gathered and socialised (see Chapter 2). As in Muscat and Sohar, agricultural land was beyond

the city wall. Local inhabitants made use of these gathering areas, which served as a meeting place for all residents to chat and exchange news (AL-Ruheili 2011).

Figure 4.10: Sohar castle today is the only remaining feature of the ancient town (Source: http://www.indiatravelite.com/oman/nakhalcastleoman.htm)

In 1507, the Portuguese established themselves in the Omani ports of Sohar and Muscat (Darke and Shields 2006). The Portuguese described Muscat as a beautiful city with mansions and a fortress (Peterson 2007). In the 15th Century, and up to the mid-16th Century, conflict and struggle took place in Oman, due to the Portuguese attempts to bring it under their control (Elsheshtawy 2004). The emergence of the Yaaribah dynasty encouraged the Portuguese to strengthen their defences by constructing a wall and watchtowers. Other popular cities at that time were Muttrah, Bawshar and Quryat (Peterson 2007). Figure 4.10 shows Sohar castle, which is the only element remaining from this era. As mentioned previously, urban growth was irregular in this era, with an emphasis on defensive constructions (such as forts) due

to colonialism and general power struggles in the region (Peterson 2007). The space in front of the castle had a role as a main public open space of the settlement. It was used for occasional gatherings and seasonal markets. Spaces associated with the masjid and those situated next to the souq were used for daily socialising and gathering.

In 1650, during the Yaarib Dynasty, Oman was a powerful empire and the country flourished, expelling the Portuguese from Muscat and the rest of Oman (Dean 2004). Later, the Omanis extended their power base, and by 1730 had conquered the Portuguese settlements on the east coast of Africa and the areas of Mogadisho, Mombasa and Zanzibar (Dean 2004). During this era, the region was under threat from European competition in the western Indian Ocean, which influenced the construction of towns in the Arabian Sea and the Gulf, resulting in ambitious defensive systems (Peterson 2007).

An important stronghold, significant for Islamic religious studies in this era, was Nizwa. As shown in Figure 4.11, the fort and the masjid (representing power) are located in the centre of the town, with the souq situated next to the fort and the surrounding residential area, following an organic pattern of growth (Peterson 2007). Nizwa is an excellent example of oasis urban settlement in Oman. It also represents elements of the Islamic city in terms of routes, irregular layout and privacy (Peterson 2007). The layout of the town is provided by an organic emergent growth of urban development controlled by Sharī‘ah. Traditional open spaces and their usage in Nizwa have largely remained unchanged. There are three main spaces: firstly, the open space near to the masjid and the fort is used for daily gathering, socialising and occasionally for celebrations; secondly, the open space next to the souq is mainly used as an extension for the market and vendors; thirdly, there is a dedicated space used for selling animals (see Figure 4.12).

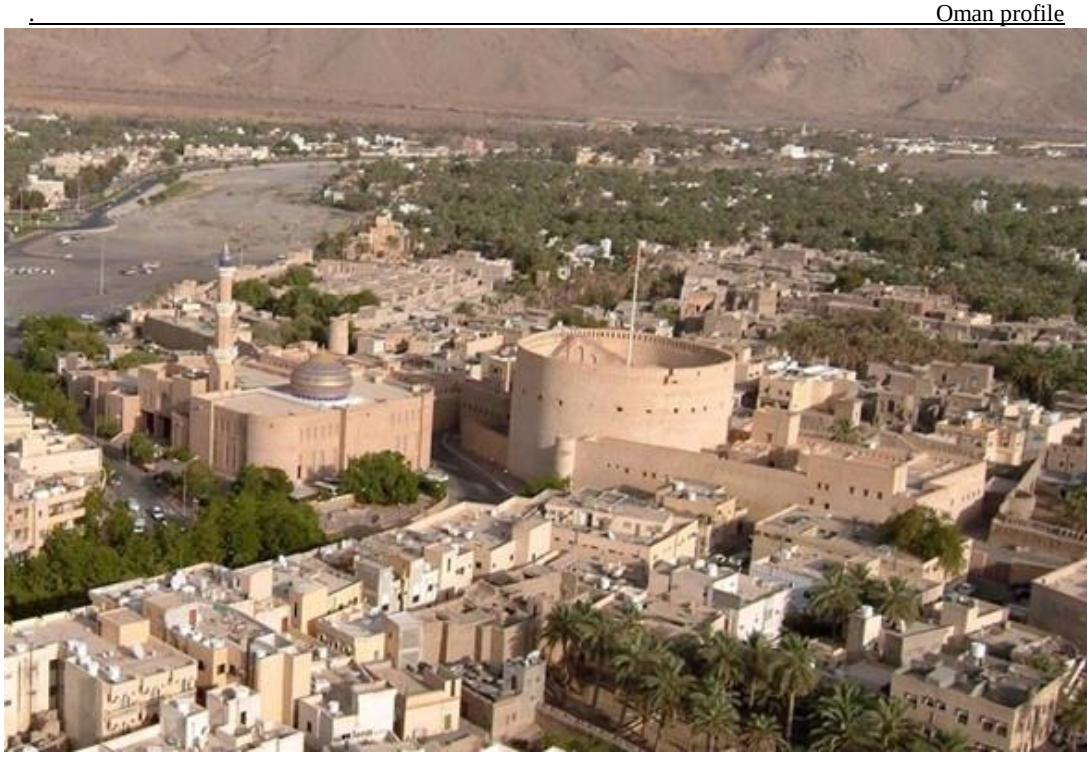


Figure 4.11:Nizwa aerial view, Ministry of Heritage and Culture, 2005(Source: http://jumboarabia.com/oman/2013/03/the-luring-cities-of-oman/)

Figure 4.12: Different types and usage of traditional public open spaces in Nizwa (Source: http://blog.nomad-reisen.de/01/jeden-tag-ist-mannertag/ ,http://www.google.com/hostednews/getty/article/ALeqM5itoR2jeMj2GbIszmgpr3wqITH4N?docId=163941564, http://www.touroman.om/info/Traditional_Souq_oman.php and http://static.panoramio.com/photos/large/49968718.jpg,)

A further example of oasis urban design (particularly within the interior region of northern Oman) is Jabal Al akhdar (see Figure 4.13). This is founded on agricultural developments, which utilized Aflaj as an irrigation system, a development introduced by the Persians. The design concept was based on a concentration in the oases around the valleys, where fresh water sources were readily available during the rainy season (Costa 2001). Public open spaces in Jabal Al akhdar have largely remained unchanged: they are primitive, although their usages are similar to those of Nizwa (see Figure 4.14).

Figure 4.13: Jabal al akhdar (Sources: http://www.travelhouse.ch/reisen/oman/muscat/jebel-al-akhdar-der-berg-ruft , http://googsy.wordpress.com/category/village-beauty/, http://www.alwantour.com/portals/0/Nizwa-%20Jabal%20Akdhar-text.jpg and http://khalidkharusi.photoshelter.com/image/I0000IgAyTOF3y8o)

Figure 4.14:Different types and usage of public open spaces in Jabal al akhdar (Sources: http://trilliana.aminus3.com/image/2011-05-29.html, http://hipigrrrloman.blogspot.co.uk/2014/03/weekend-in-hajar-mountains.html, http://www.panoramio.com/photo/63330719 and http://fightingkitesandtamarindtrees.blogspot.co.uk/2011/10/jabal-akhdar-oman.html)

In the first half of the 18th century, the country experienced civil war, due to the diminishing authority of the Yaarib Imamate (Dean 2004). They were subsequently ousted by Ahmad ibn Said, who was elected Imam in 1749 and established the Al-Bu Said dynasty in Sohar, which is one of the earliest dynasties in the Middle East and still rules Oman (Dean 2004). In 1786, the capital of the country was transferred from Rustaq to Muscat (Calvin et al. 2001).

The planning of Oman during this era was concerned with physical buildings, mainly residences (Peterson 2007), while urban growth was controlled by social and religious regulations (Peterson 2007). However, at the end of the 19th century, there was a significant decline in urban development in Muscat, due to the expansion of

the country overseas geographically towards East Africa, and the relocation of the Al-Bu Said ruler's principal residence from Muscat to Zanzibar. During this era, Oman was called *'Muscat and Zanzibar'*, but the majority of the wealth was in Zanzibar with the royal family, and Oman itself suffered from low incomes (Peterson 2007), causing many Omanis to migrate to Zanzibar and East Africa (Peterson 2007). This political and social development negatively affected the economic situation, which impacted on the quality of town growth. This is most visible in the construction of residences and masajid (Peterson 2007).

During the era of Imam Said bin Sultan (1804-1856), Oman established a strong relationship with a number of European countries, particularly with the British (Dean 2004). In 1798 and 1800 Oman signed friendship treaties with Britain (Dean 2004). It also created treaties with America in 1833, France in 1844, and the Netherlands in 1877 (Dean 2004). However, the Omani-British relationship has remained uninterrupted, whereas relationships with the other countries have been less consistent (Dean 2004). During this time, the country was officially called the Sultanate of Oman. Towns grew in an organic form controlled by social and religious regulations, but with no forward planning (Dean 2004), meaning that the townscape in Oman at that time emerged organically (Peterson 2007).

Despite adverse development in the 19th century, there were two fundamental urban design phases in Muscat during this time which shaped the landscape (Peterson 2007). The first was in the early 19th century, when a number of buildings were built to relocate the Al Busaydi royal family from Zanzibar (which had previously been the capital of the country) to Muscat. Moreover, the palace of Said Bin Sultan was built and was used to receive European visitors, along with Bayt al-Alam palace, Bayt Al-Kharajiyah and Bayt Ratansi (Peterson 2007). Few buildings remain from this era. The second phase was in the late 19th and early 20th centuries and the majority of its buildings still stand today. This era saw construction of residences for other well-known families and the building of three major masajid: Ali Musa, Al-Zawawi and Nasib Khan (Peterson 2007). Two of the residences built in this era are Bayt Nasib Khan (used by the British Consulate and Political Agency) and the American Arabian Mission (Peterson 2007).

Later, during the oil boom in Gulf Countries in the 20th century, British and American oil companies working in oil exploration and production built towns for their employees. These introduced basic western city planning principles to the region, and had considerable influence on policies that later became the foundation of the planning system (Elsheshtawy 2004). Since colonialism in the 18th and 19th centuries, Middle Eastern countries have been a part of the modernisation movement. From the 19th century until the present, their cities have implemented modern urban design concepts, such as the *'Garden City'* concept in Cairo and skyscrapers in Dubai. The negative idea of Western colonisation imposing foreign concepts in Gulf cities has been replaced by regional governments with a positive concept of implementing Western modern concepts inspired by globalisation (Elsheshtawy 2004). The types of public open space created during the current *'renaissance'* era in Oman, since the 1970s, are described in section 4.6 below. But first we need to understand the planning and urban design systems that have evolved over the last few decades in Oman, influenced by Western models, under which such contemporary public open spaces have been provided.

4.5. Planning in Oman with a focus on Muscat

The planning and urban design system in Oman shares a number of characteristics with other Middle-Eastern countries, although with some differences, due to it belonging to the Gulf Cooperation Council (GCC) Countries (Elsheshtawy 2004). This is due to the fact that the Gulf Countries have been considered as the wealthiest in the region, due to oil resources, and have experienced the most rapid growth since the early 1990s (UN 2001). They also formed a cooperative council in 1981 through the Gulf Cooperation Council (GCC), which includes Bahrain, United Arab Emirates, Kuwait, Qatar, Sultanate of Oman, and Saudi Arabia (UN 2001). This council works cooperatively with planning and urban design issues in order to improve the quality of the developments in the region, so as to integrate their regional economic and environmental planning (The Cooperation Council 2009).

However, this work informs recommendations, and is generally not implemented in the form of policies (Supreme Committee for Town Planning 2009). The Middle East (particularly the Gulf countries), might have created cities that were better designed if they had gained sufficient use of their resources and established an effective planning system (Elsheshtawy 2004).

There is a centralisation of power and wealth at central government level (Ministry of Housing 1999). Before 1970, Oman had virtually no government administration, and only two schools, three small hospitals and no more than 10km of asphalt road. In the early 1970s, the adopted national urban policy focused on ad hoc growth and the expansion of secondary towns. There has since been rapid growth in urban development. However, the planning system was newly established at that time and was not given serious consideration (UN 1987).

Until the 1970s, the traditional transaction system for land ownership operated (including in urban areas) with no official records or registration system (UN 1987). Since the 1970s, an increasing number of land laws and regulations have been enacted, including: distribution of cultivated land (1972); land organisation (1972); organisation of the administrative system (1975); establishment and organisation of the capital municipality (1975); expropriation (1978); decree assigning the Ministry of Finance responsibility for public property (1977); and decree of rules and regulations for land (1980) (UN 1987). Other than private land legally registered as belonging to specific owners, according to the legal framework all land belongs to the State (UN 1987). There are housing, commercial, industrial and agricultural land uses within private land (Ministry of Housing 2012a), and there are public and private categories of land within the land belonging to the state. Public land is used by private investors for a period, at the end of which it can be extended, or the land returns to the state, whereas private land can be utilised by public bodies within the scope and means of the current law and regulations (UN 1987). There are waqf properties, which are supervised by the Ministry of Justice. Waqf (as noted previously in Chapter 2) is the Islamic system where individuals can offer their private property to be inalienably for public benefit. This can be a complete property or a part, and is legally protected by restrictions on buying or selling. Such properties

cannot be subject to expropriation without permission from the Ministry (Ministry of Justice 2010).

As discussed below, there are currently a number of different authorities within the Omani planning system. Although they are not structured into a clear hierarchy, they can be classified into national and local level planning, according to their responsibilities. Due to the lack of cooperation between planning bodies, however, there is no clear relationship between them (Supreme Committee for Town Planning 2009).

4.5.1. National level

Until the 70s, rather than a state-managed planning system, as in the West, urban growth in Oman had emerged regulated by Sharī'ah. Since then, Oman has adopted principles of Western planning in order to respond to globalisation. This was the very first form of planning in the country. Although the Omani system has been inspired by the British systems, it has not fully adopted them. To some extent, it has not succeeded due to scattered adoption and lack of proper compilation (Hartley 2007). In order to gain an understanding of the provision system of public open spaces, there is a discussion below of the range of different planning authorities in Muscat, including the Ministry of Housing and the Supreme Committee for Town Planning (Ministry of Housing 1999).

The Ministry of Housing

The Ministry of Housing has been the main body concerned with the land and planning system in Oman. The Ministry of Land Affairs was established in 1972, taking over what is now known as the Ministry of Housing in 1985. All private land has to be registered with the Ministry of Housing. Omani citizens who were occupying or cultivating any property or land prior to January 1970 are entitled to

claim ownership from the Ministry of Housing, which is responsible for investigating such claims and then registering the ownership (UN 1987). The Ministry is responsible for providing master plans and then selling or renting the land to citizens, according to the plan and giving priority to local residents (UN 1987). It also prepares detailed maps of planned areas in accordance with the general policy of urban planning and preparing of survey charts of real estate units, appointing public facilities and its areas on these maps (Ministry of Housing 2012b). The Master plan is prepared in a two dimensional graphic form by the General Directorate of Planning in the ministry (Ministry of Housing 2008). This Master Plan specifies the land use for each plot; i.e. residential; commercial; industrial; agricultural; recreational/ tourism; preservation; restricted; services; and public facilities and utilities (Muamir, 1989). However, land use can be changed through an application to the General Directorate of Planning (Ministry of Housing 2008). The ministry is not responsible for the physical development of the land.

One of the ministry's responsibilities is the granting of the usufruct right of lands in accordance with the relevant rules. The ministry also decides if land ownership applications are registered under the Land Law. It records all actions and rights in terms of the real estate, documenting legal documents and actions, relating them in accordance with the real estate registry system and the issuance of title deeds (Ministry of Housing 2012b). It allocates lands for other administrative bodies of the state, institutions and public bodies and other legal persons for the performance of its functions (Ministry of Housing 2012b). Public open space is classified under public facilities, parks and gardens. They are considered as part of government lands allocated for municipalities. However, there is no policy or guidance regulating types, usage, capacity, size and design of public open spaces.

Since 1970, the Ministry of Housing has awarded ownership of land in its various uses for citizens, according to the government land entitlement regulations. Every male citizen over the age of 23, and every female citizen divorced or widowed or over the age of 40, is entitled to a residential plot. Providing this number of residential plots has been a major priority in city planning. Due to the large number of applications for residential plots, there is an extreme shortage of land in most

cities in Oman. Hartley (2007) stressed that planning has focused on quantity rather than quality. Policy needs to support the quality of urban design by imposing standards for master planning, and standard facilities must be available before offering them to citizens (Hartley 2007). The provision of the master plan is based on roads and the promotion of public transport. Provisions for cycling and walking are not implemented. As Muscat is the capital city, it experiences the greatest land shortages. Due to rapid development, the city greatly expanded during the renaissance era from the area bounded by the solid red line in early 1970s to the area bounded by the dotted red line in the 2000s, as shown in Figure 4.15 below. This expansion brought with it fundamental planning issues, such as risks of flooding, shortages of services, future land shortages and a lack of public open spaces.

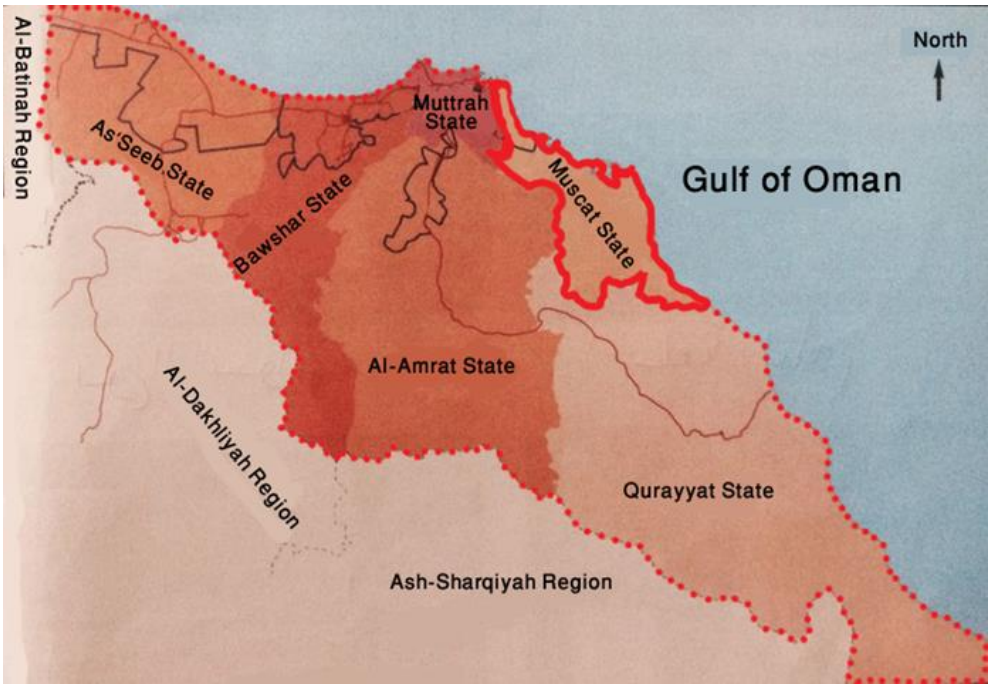


Figure 4.15: Muscat map (Source: adopted from Social Studies book 2012, grade 4 part 2, Ministry of Education, Sultanate of Oman).

Furthermore, the ministry has the responsibility for preparing socio-economic studies to determine the future needs of social housing, including loans, housing assistance, and housing assistance programs for people with limited incomes. In order to meet such future aims, a preparation of strategic planning is essential. The ministry was

previously responsible for preparing strategic plans. The Strategic Regional Plan was in the form of a written statement consisting of five main components. The background to the strategic plan describes the region in terms of: development opportunities; economic and social issues; distribution of activities within all sectors; development issues and natural and human resources. It outlines the area's development during the previous strategic plan, including: strategies to develop the area (of which there are three options); the strategy's policy and recommendations; and the investment programme (which includes a number of projects that are assimilated within the strategic plan). The Muscat regional plan has been the most advanced regional plan in Oman, due to its social, economic and administrative position (Muamir 1989). In 1989, Mumair (a local consultancy office collaborating with Weidleplan, a Germany consultant office) were assigned by the Ministry of Housing to deliver the very first planning documents for Muscat (Mumair 1989). Later, in 1991, the final drafts of the Muscat Structure Plan, Muscat Housing Plan and Muscat Regional Plan were approved for implementation, with the final adjustments to be completed by the end of 1995. Due to major alterations in the ministries and authorised bodies, the planning document was neither modified nor approved. However, the responsibility for preparing such plans was transferred to the Supreme Committee for Town Planning. However, even when there was a strategic plan in place, there were no strategies available to regulate the implementation of the provision of public open spaces.

The Supreme Committee for Town Planning

The Supreme Committee for Town Planning was set up within the Ministry of Housing in 1985. It gathered document drafts and amendments in a comprehensive set of principles for the Sultanate, known as the Urban Planning Guide 2000. For reasons that are unclear, the supreme committee approved this as set of recommendations or guidelines rather than as regulations or policies, thus weakening their implementation. In 2007, the Supreme Committee for Town Planning was divided from the Ministry of Housing in order to act as an independent body chaired

by the Minister of National Economy. It was intended to be the authorised body for general town planning policies with regards to the existing context of development plans and to control the implementation and development of approved planning. It also sets regulations for valuing properties in cases of them being expropriated for public benefit.

In the Urban Planning Guide in 2000, the supreme committee allocated the responsibility of providing public open spaces in Muscat to the Muscat Municipality. It classified public open spaces into gardens, natural parks, parks, squares, and playgrounds. The guide recommended that a square or plaza should be provided by designing a landscaped area within the centre of every neighbourhood or village. This should include shaded areas, seating, planting and playgrounds. As shown in Table 4.6, the provision for squares/ plazas was suggested to be one for every neighbourhood of 0.2 km radius, although there is no clear definition provided of what constitutes a square or plaza. The number of existing squares and plazas in Muscat do not represent this ratio, however. The relationship between the written statement of the policy and proposals and their written form of expression, is generally very weak (Hartley 2007). This is due to the fact that the Design Guide has not been legislated to have the power of a law, and therefore the provision of squares and plazas has been kept optional.

Type of public open space	Population of district	Size of the public open spaces (Ha)	The approximate radius of the neighbourhood's / district's circle (km)	Car parking	Location
Square/ plaza Optional	500-5,000	0.02	0.2	-	Centre of neighbourhood/ village
Playground Optional	2,000-5,000	0.1-0.25	0.2-0.4	-	Centre of neighbourhood/ village/
Garden Optional	10,000-20,000	2-3	1-1.5	25	City centre
Public park	20,000-50,000	2	2-5	50-100	Centre of district
Natural park	100,000-200,000	Minimum 10	30	150	Natural location of district

Table 4.8:Design guide for public open spaces, (Source: Urban Planning Guide in 2000, The Supreme Committee for Town Planning).

However, the Supreme Committee plans were created in an ad hoc manner in order to meet short-term requirements. There is a considerable need for both long-term and national level planning (Hartley 2007). The conflict in responsibilities between the Supreme Committee and the Ministry of Housing has caused a number of issues. Moreover, unclear planning has ensured the absence of a national plan, a complete set of planning policies, and a complete structural plan. The reason for not implementing the Supreme Committee's guidance has been an absence of a superintendent authority able to control and regulate the planning authorities. The high-profile Supreme Committee for Town Planning was disbanded, with most of its powers being assigned to the Ministry of Housing in 2012. A new 'Supreme Council for Planning' was constituted in 2012, with a wider planning authority.

The Supreme Council for Planning

There is currently a study of the Oman National Spatial Strategy (ONSS), which is being developed by Freiland (Environmental Consulting Civil Engineers Ltd.) under the supervision of the Supreme Council for Planning. At the time of writing, the strategy is at the tendering stage and is expected to be concluded by the end of 2015. It aims to provide a solid framework for national resources, and an environmental and land use strategy that will ensure sustainable socio-economic development at both a national and regional level. In addition, it will propose specific policies for development over the next thirty years (Freiland 2013).

Consultant companies

As noted previously, Oman is a young country that has experienced rapid development over the last 43 years. This has meant that there have been few home-grown professionals or local consultant offices to lead the development of a growing country, leading the government to employ foreign consultants. Even the very early

local offices, such as Mumair (which collaborated with Weidleplan, a German consultancy company to prepare planning drafts between1989-1995), depended on foreign experts. Currently, the Oman National Spatial Strategy (ONSS) is being developed by Freiland (Environmental Consulting Civil Engineers Ltd.). Foreign experts have delivered the latest modern design concepts to Oman, but since there is a weakness in national planning and strategies, these contributions have not been well coordinated. The most common mistake of foreign professionals in all Middle Eastern cities is a lack of consideration for the local climate, economic forces and social-cultural values (Germeraad 1990). This approach towards planning and urban design practice has been inherited by young local experts, as they are mainly educated in the West or trained by foreign professionals in their home country.

The Royal Estate department in Diwan of Royal Court Affairs

The Royal Estate is the administration that designs or offers technical recommendations and supervision for all projects and maintenance works related to the Royal Palaces and other Royal Court facilities. However, a project of the Royal Court could also involve public open spaces (Diwan of Royal Court Affairs 2014).

4.5.2. Local level: Urban design in Muscat

The old city of Muscat is completely hemmed in by mountains, leading to its Arabic name (see Figure 4.16). This has restricted its growth, therefore encouraging development in other open flat areas, such as Bawsher and A'Seeb. Old Muscat is physically linked to Mutrah, which was the commercial centre housing the main harbour of the country, but it shares the same physical location of bays and hills. Before 1970, only a small number of dwellings and the occasional village were situated within the cultivated belt. Many people who used to live in villages outside this strip during the cooler months used to move into the cultivated belt during the summer, as it is more comfortable under the shade of trees. Houses mainly occupied

individual plots of land, and there were few villages within the cultivated belt that were permanently occupied (Cain et al. 1974). Shortly after the emergence of the Omani Modernisation Renaissance in 1970, development in Muscat (as with many other GCC cities) responded to Western urban design concepts in a unique manner influenced by globalisation. However, Western urban concepts unique to each city were also being developed, which responded to larger 'global' issues (Elsheshtawy 2004).

Figure 4.16: Old city of Muscat (Source: http://www.justtravelous.com/en/2013/02/top-things-to-do-and-see-in-muscat-oman/)

Muscat Municipality

Muscat Municipality is considered as a service provider, responsible for roads, water supply, drainage, landscape, market areas, public amenities and services, in accordance with the Ministries of Housing master plan. It provides design codes and gives building permission in accordance with the plan (Royal Decree 8/92, Chapter 5, Article 10 1992). Before instigating any development, the client or the developer

must obtain approval from the Building Permits Directory within the Muscat Municipality.

Muscat has adopted a mode of development that differs from other GCC countries. It conserves its traditional and local identity within its urban design, with a concern for stable and sustainable growth (Elsheshtawy 2008). The municipality has been making great efforts to emphasise local urban identity. It attempts to control the conflict between Western modernity and local identity by providing a design code, which was prepared in the mid-1970s by Muscat Municipality Building Regulations and later revised in the 1990s (Hartley 2007). It provides a strict design code to regulate the façades of the built environment in Muscat to conform with local architectural elements (Peterson 2007). However, this has proved to be a restriction, as the rigid code is limiting the architectural features to both arches and domes. It has been claimed that the built environment in Muscat does not represent modernity, due to the design code being out of date, and does not include current concerns. The design code also requires updating, in order to reflect current global concerns (in particular environmental issues and current social and economic requirements) in order to provide a built environment that suits the community and will eventually create an identity for the city.

The existing built environment in Muscat includes Western urban design concepts alongside modified local architectural elements. Modernisation has meant that the old has tended to be replaced by the new. This has used traditional local architecture features mainly on the façade of the buildings, with Western concepts contained within the urban fabric. This trend is evident in all public spaces, which have been either newly built or greatly modified after 1970, leaving very little remaining of the traditional urban fabric. The provision of public open spaces is classified under public facilities. There is no specific policy or guidance for such provision. Open spaces are mainly provided by two departments in the municipality, these being the Department of Design Central Designs (which acts as designer) and the General Administration of Landscaping and Gardens (which acts as the provider).

The Department of Central Designs is responsible for the design of public open spaces in Muscat. It designs the majority of municipality projects and supervises designs prepared by other consulting offices. The Department prepares the required topographical studies, field tests and drawings. Within plots provided to the municipality by Ministry of Housing, the department has produced a number of different projects, including markets, coffee shops, restaurants, parks, gardens and plazas and a square. It is also responsible for city beautification projects along roads and streets (i.e. landscape projects for roads restriction areas, architectural features for roundabouts, fountains, walkways and seating elements). It prepares all the working drawings and specifications for their projects. Aesthetic, visual cosmetic and beautification are main targets of the department's projects (Al-Hajri 2003).

The General Administration of Landscaping and Gardens is responsible for planting and beautification projects in Muscat, and providing public parks and gardens. It provides studies and experiments on the production regarding gardening, in order to establish those most suitable for the production processes. It is responsible for the provision and maintenance of landscaping and planting, and also for the designing and implementation of irrigation systems.

The Municipal Council

The Municipal Council as a legislative body was established at the same time as the Muscat Municipality. It was previously known as the Municipal Committee, but was then reformed and renamed as the Municipal Council in 1975. The Municipal Council is the Muscat legislative body within the Muscat Municipality, where its orders have the strength of law. It sets policies for municipal services, and discusses the budget, proposes tax and royalties and fees and the means of collection (Royal Decree 8/92, Chapter 2 Article 8 1992). The Council is composed of the municipality mayor (who appoints the ex-officio chairman of the municipal council) and twenty-seven members represent the following: the Ministry of Health; the Ministry of Regional Municipalities and Water Resources; the Ministry of Social Development; the Ministry of Manpower; the Ministry of Housing; the Ministry of Commerce and

Industry; the Governorate of Muscat and Royal Oman Police; Ministry of Environment and Climate Affairs; and sixteen members representing the residents of the of the six Muscat's States who are appointed by royal decree (Al-Hajri 2003).

Local committees

The planning system employs local community committees, headed by the governor, influential citizens, and mashaaikh (i.e. tribal leaders) who are not amongst the authorised staff from the Ministry (Ministry of Housing 1999). Those authorities are responsible for development and improvement of services such as electricity, water supply and veterinary services (Ministry of Housing 1999). There are generally local committees for the majority of regions apart from Muscat. However, the Qurayyat State is the only state in Muscat that has local committees, as this state was integrated into to Muscat city in 1991 (Al-Hajri 2003). Local committees present recommendations regarding planning issues to the ministry (Ministry of Housing 1999). The Ministry of Housing argues that the system is decentralised and that 95% of the planning procedures are in the control of the local authorities (Ministry of Housing 1999). Nevertheless, the final step is taken by the Ministry of Housing, which is centralised in terms of its decision-making (Ministry of Housing 1999). This therefore slows the process and requires staff from central government to visit the site in order to make a decision. Thus, in reality local authorities are granted neither strength nor power (Hartley 2007).

Although a number of local authorities form local committees from members of the community, there is no effective participation with the population, as such committee members are selected by the Ministry of Housing. In order to enhance participation, those committee members would need to be elected by the local population in order to represent them. Furthermore, nothing is clear in the regulations regarding rights for individuals to be involved in planning from an early stage, before preparing the plan, and subsequently to participate in the development of their built environment. In reality, there is no regulation for community involvement of any kind currently in existence.

4.5.3. The limitations of the current situation

There is currently conflict concerning the allocation of responsibility between national and local levels of planning authorities, due to the fact that the planning system is unstructured, starting with the planning system up to the point of urban design. Planning is not viewed as forward written policies, guidance and strategic plans, but rather as urban design and development plans. One of the main issues with the planning system in Oman is the lack of comprehensive national planning and general supervisory authority regulations. Consequently, the lack of an ability to view the complete picture, along with the demands of rapid development, have led planning authorities to respond in a narrow manner, and to focus on urgent needs.

The current planning system has not been established in order to deliver liveable public open spaces, and consequently their provision is insufficient. Squares and plazas are now rarely created, due to the fact that the Ministry of Housing has only been providing the Muscat Municipality with land for parks and gardens. All squares and plazas are provided by the municipality as part of landscape beautification projects, but the municipality has not developed any local plans or strategies to regulate the provision of public open spaces. The main priority for the all municipality projects has been a focus on the aesthetic appearance of the built environment, ignoring the need for facilities and activities in squares and plazas for the benefit of their users.

Urban design and planning integration strategies in Middle Eastern countries have been developed within the context of capitalism and western hegemony (Elsheshtawy 2004). The majority of these strategies involve attempting to superimpose a Western model on their cities as an aspect of modernity, abandoning their historical background. This effect differs from one country to another, i.e. it is more apparent in Dubai and less so in Oman, due to their respective planning regulations. Due to the benefits from its oil and gas reserves, Oman has enjoyed an extraordinary rise in national income, and has therefore experienced an era of major

national projects and a tourism industry that has increased the quality and quantity of development (Elsheshtawy 2004).

Urban design is still the least considered aspect in the Omani planning system. There are constraints to the relationship between planning and urban design, due to the following: short-term planning; lack of effective national planning; centralisation and weakness in local bodies; lack of cooperation between authorities; weakness in public participation, and unclear relationships between the bodies involved in planning (Peterson 2007). The relationship between urban design and the planning system needs to be enhanced in order to address global concerns, such as sustainability and environment, along with economic, social and health issues.

4.6. Contemporary public open spaces in Muscat

With the above understanding of the planning and urban design systems in Muscat, we can now return to the recent evolution of public open space in the city. The discovery of oil led to a boom in the economy, which, as mentioned previously, has led to a rapid development in Oman in order to meet new lifestyle standards. Muscat, as the capital, has experienced the most pronounced changes. Development has meant implementing modern urban concepts and planning systems adopted from developed countries. Western public open spaces concepts (such as squares and plazas) were also introduced, although such spaces are only found in the relatively older parts of the city and they are lacking in more recent developments. Hence, the majority of public open spaces in Muscat no longer follow traditional concepts. Currently, public spaces are provided by the Muscat Municipality on land provided by the Ministry of Housing, according to their master plan. However, in terms of planning, the Ministry of Housing does not possess a strategy of providing public open spaces. When it comes to urban design, the Muscat Municipality also has no design strategy or design code classifying the typology, design concept, long term management and maintenance plan of public open spaces (AL-Ruheili 2011). Achieving liveability in public opens spaces is a complex matter in such circumstances, as the providing system does not provide sufficient legislation to

support such provision. In addition, the transfer of western planning and design approaches has taken little account of local conditions, for example in relation to climate.

As noted in Chapter 2, the use of outdoor spaces in Muscat, as in any other GCC city (see the following section) can become uncomfortable in daytime, due to the fact that temperatures can exceed 45C (Taylor 2012). The climate in Muscat (as discussed in section 4.2) forms a major barrier to the use of outdoor spaces in the middle of the day in summer (which stretches from March to October). A modern lifestyle has created convenient artificial indoor environments for the daily life of a community. In addition, a lack of variety in public transport has ensured it is a society that relies completely on cars. This has dramatically minimised the potential for walking, with individuals generally only being willing to cover the distance between buildings and a parked car. This makes the usage of public open space no longer a necessity as one of three types of space usage for any liveable space, as was considered by Gehl (2010). Moreover, those working in the government sector have no lunch break, and the private sector has a lunch break between approximately 1:00pm to 4:30pm, which is considered as the hottest part of the day. Government office workers finish their day by 2:30, ensuring that office workers rush home due to the weather, and to have lunch. Therefore, the use of public open spaces in Muscat has been for leisure activities restricted to evenings, as they remain bearable in the evenings during most of the year.

4.7. Identification and description of the selected case studies

Muscat has a mixture of Middle-Eastern and Western public open spaces. Traditional public spaces, however, have almost disappeared. This thesis claims that there is a shortage of squares and plazas in the city, arguing that there is weakness in the liveability of the existing spaces. As mentioned in Chapter 3, all existing squares and plazas were built after 1970. The two selected squares are the only ones in existence

and two plazas have been chosen from the few existing in the entire city (see Figure 3.10). Below is a brief identification and description of the case study spaces.

4.7.1. Palace Square

The square is located in the centre of ancient Muscat, in front of Alalm palace, which is used as the royal ceremonial palace. It is located between the forts of Al-Mirani and Al-Jalali, which were built in the early 16th century by the Portuguese occupying forces. This elevated the entire area to that of an historic, regal site of interest, which is also suitable for tourism. The square was recently built for the purpose of hosting royal greeting ceremonies (see Figure 4.17 and 4.18). It was built by the Diwan of Royal Court Affairs. The other end of the square is occupied by the new National Oman Museum, which is expected to open to the public shortly. This square is mainly used as a royal reception hall where the Sultan leads the welcoming party for the arrival of motorcades of visiting heads of state (see Figure 4.19).

4.7.2. Municipality Square

This was built by the Muscat Municipality, and represents a 1970's renaissance landmark showcasing the Sultanate's obligation towards the modernisation movement in Oman. It is also known as the Clock Tower Square. The square is located in a commercial district and is surrounded by buildings belonging to both government and companies (see Figure 4.20 and 4.21). This square was mainly built to acknowledge the commercial character of its urban fabric. As it is located next to the Muscat Securities Market, it has been provided with an electronic screen illustrating the value of the stock market in the morning and a programme of entertainment in the evenings. The design of the square includes a stage to be used for different events and the two arcades were intended for use by shopkeepers. However, the screen, stage and arcades were only in use for a few years after the building of the square. More recently, the only event taking place there has been the

Iftar event (i.e. breakfasting) organised by the Hyderabad Club. Since 2002 Asians of differing nationalities have attended the Iftar event every Ramadhan (the Muslim fasting month) except in 2005. See Figure 4.22 (Oman Daily Observer 2012).

The Palace Square

Figure 4.17: Aerial view of the Palace Square (Source: Google earth)

Figure 4.18: Photos of the Palace Square (Taken by the author).

Figure 4.19: The square as royal reception (Sources: http://www.tccb.gov.tr/news/397/48998/magnificent-welcoming-ceremony-for-gul-in-oman.html ,http://www.tccb.gov.tr/news/397/48998/magnificent-welcoming-ceremony-for-gul-in-oman.html and http://www.zimbio.com/photos/Qaboos+bin+Said/Queen+Elizabeth+II+Prince+Philip+Visit+Visit/TCjbWf2rINS)

The Municipality Square

Figure 4.20: Aerial view of Municipality Square (Source: Google earth)

Figure 4.21: Photos of the Municipality Square (Sources: https://www.flickr.com/photos/toddhopkins14/3341069400/, http://www.focus.de/reisen/arabien/oman/highlights_aid_18300.html and http://tabisite.com/photo/92om/mcte.shtml)

Figure 4.22: Asians of different nationalities attended an iftar at the Municipality Square, August 2012 (Sources:http://www.muscatdaily.com/Archive/Oman/3-500-people-attend-iftar-hosted-by-Hyderabad-Club-at-Clock-Tower-1lxv and http://main.omanobserver.om/?p=5923)

4.7.3. Ministries Plaza

This is located next to the ministries buildings. It was built by the Muscat Municipality as a landscape beautification project on a highway right-of-way area, as shown in Figures 4.23 and 4.24. The plaza was redesigned and modified several times by the municipality after it was built. It is used by the official authorities, the private sector, and the general public for celebrations and demonstrations. One such recent event was the introduction of the one year countdown celebration to the 2nd Asian Beach Games in Muscat, 2010 (see Figure 4.25). Subsequently, the 8.1 metre high countdown clock has become a part of the plaza.

4.7.4. Muttrah Plaza

This plaza is located on the waterfront within the ancient part of the city and has been selected due to the fact that it has traditional plaza elements, such as being enclosed, landscaping and a fountain. It was built by the Muscat Municipality as a landscape beautification project on a road right-of-way area, as shown in Figure 4.26 and 4.27. It was modified several times by the municipality after it was built. A recent event in this plaza was the introduction of the O'Bike system, initiated by the Muscat Municipality and operated by JCDecaux. This became the first-ever self-service bicycle system in Oman and operated for an experimental three-month period until May 2013. Other cycling projects may be provided as a result. It could be accessed every day from 4 pm to 8 pm, through the means of an operator ID card, allowing a free ride for up to 30 minutes (see Figure 4.28).

The Ministries Plaza

Figure 4.23: Aerial view of the Ministries Plaza (Source: Google earth).

Figure 4.24: Photos of the Ministries Plaza (Source: taken by the author)

Figure 4.25: The countdown celebration event for The 2nd Asian Beach Games in the 6th December 2010 (Source: http://www.ocasia.org/News/IndexNewsRM.aspx?WKegervtea19F4FV3BvzGA==)

Muttrah Plaza

Figure 4.26: Aerial view of Muttrah Plaza (Source: Google earth)

Figure 4.27: Photos of Muttrah Plaza (Sources: http://2koolkruisers.wordpress.com/2011/03/25/day-64-friday-march-25-2011-%E2%80%93-muscat-oman/, taken by the author and http://alvares.in/mario/20090919/the-muttrah-corniche-in-oman/)

Figure 4.28: The introduction of O'bike system in Muttrah Plaza (Source: http://andyinoman.com/2013/03/14/obike-project-mutrah-corniche/)

4.8. Conclusion

The aim of this chapter has been to examine and clarify the national context of urban development, planning and urban design, and the evolution of public open space in Oman. As in other Middle Eastern countries, Oman's cities emerged with their planning system controlled by Sharī'ah. The discovery of oil has served to transform all the GCC countries, including Oman. Since the 1970s, the country has been rapidly modernising by adopting cutting edge technology in all aspects, including planning and urban design systems. Due to colonisation (and the fact that Western countries have been the leaders in the modernisation process), Oman has been influenced by Western planning and urban design systems. However, this was not a straightforward process, due to the differences in climate and culture. Furthermore, a major barrier in any successful adoption of Western systems has been a lack of professionals native to Oman, or who understand the implications of such differences. It is clear from this review that there is an overlapping of responsibilities and a lack of collaboration between the authorities in the planning system when it comes to providing public open spaces in Muscat. There is no clear legislation concerning such public open spaces and their provision. Very few of the design guides examine the design criteria of open spaces, and any concept of liveability is missing.

In order to examine the liveability of public open spaces in Muscat in more detail, Chapters 5 and 6 provide an analysis of the characteristics of particular contemporary public spaces, while Chapter 7 provides reflections on the current provision of public open space from the perspective of the providers. The background set out in this current chapter of climate conditions, demography, the social component of residences, and the daily rhythm of using public open spaces in Muscat will act as a database to which fieldwork data can be compared in the following chapters.

Chapter 5: Evaluating the product

5.1. Introduction

The previous chapter introduced public open spaces in Muscat, specifically the case studies of selected squares and plazas. This chapter presents on evaluation of built environment of the case study open spaces using different techniques applied by researchers to assess the liveability of open space. In this chapter three different tools were utilized, and the chapter is structured around these. First, it assesses the urban fabric of each case by using mapping focusing on the relationship between space and its surrounding urban uses. It then outlines three precise tools for measuring urban design character. The methods include an urban design audit, an urban design inventory and visual assessment. These tools were chosen to represent a range of measurement approaches in terms of theoretical bases and practical use. As this part is subjective it was evaluated by a specialist team. This is followed by evaluating the liveability of built environment using observation and behaviour mapping to illustrate the users' activities in the space. This was used to assess user interaction with the urban design and how people use the space. Evaluating a space by utilizing multiple techniques could certainly tap into the diverse strengths of each assessing method and potentially create a strong evaluation which values urban fabric context, visual urban design character, and user responses to space. Together they provide a comprehensive understanding of the spaces. The chapter concludes by assessing the interrelationship between the urban context, visual quality of the spatial built environment and the users' behaviour in the selected case studies.

5.2. Urban fabric of the case studies

This section illustrates the nature of the urban fabric of each case study. Urban structures and the shape of the spaces influence the way people use them (Gehl 2010). The nature of the urban fabric was evaluated using aerial views showing the

relationships between the case study space and its surrounding in sense of the diversity of land uses, road pattern, pedestrian network, in the urban fabric and human scale of the space.

5.2.1. Palace Square

Palace Square is located partly in the heart of the ancient city of Muscat. It is in front of the royal palace. The nature of the surrounding urban fabric has changed in the last few decades. There are still remains of historical elements such as Al-Jalali fort, Al-Mirani fort, the city gate and part of the city wall. Al-Alam Palace itself was built quite recently in 1972, on the site of a historic palace. Having the palace led to expanding government buildings such as the royal reception building, Diwan of Royal Court and the Ministry of Finance and their car parks, which consequently pushed the residential neighbourhood outside the city wall. At the other end of the square there is a new government building under construction at the time of writing, which is the National Museum. This expands the royal and tourist value in the area versus residential uses. Moreover, modern services were also provided such as schools and commercial units. However, the Diwan of Royal Court buildings did not respect the existing urban fabric of the original city as all of them are of relatively large size and dominating compared to the small residential units. Since the main purpose of the square is as a venue for royal reception of heads of state, which follows international royal ceremonial protocols, this required a large enough space for processions containing cars, marching bands and horses (see Figure 4.19 in Section 4.7.1). The square dimensions are 250m x 45m; its dimensions and ratio are not within the ranges recommended by open space researchers (see Section 2.3.3). It is more like a large narrow corridor which is not appropriate to human scale. Moreover, the square size is not in proper proportion with the surrounding buildings. Roads dominate the urban fabric of the area, which lacks a proper provision of pedestrian and cycling networks. There are two driveways crossing the square (see Figure 5.1), which are not designed as proper shared space. The materials used and the bollards give clear priority to cars. The square does not link into with the

surrounding urban fabric as the two arcades block the two sides, reducing permeability (see Figures 5.2 and 5.3). This limits the integration of Palace Square with the surrounding activities.

Figure 5.1: The Palace Square(Sources: http://static.panoramio.com/photos/large/52425548.jpg, http://filipdemuinck-kristelpardon.blogspot.co.uk/2011/12/palace-of-sultan-qaboos-bin-said-in.html and http://www.corbisimages.com/stock-photo/rights-managed/42-17478385/aerial-view-of-muscat-oman)

Figure 5.2: Palace Square aerial view.

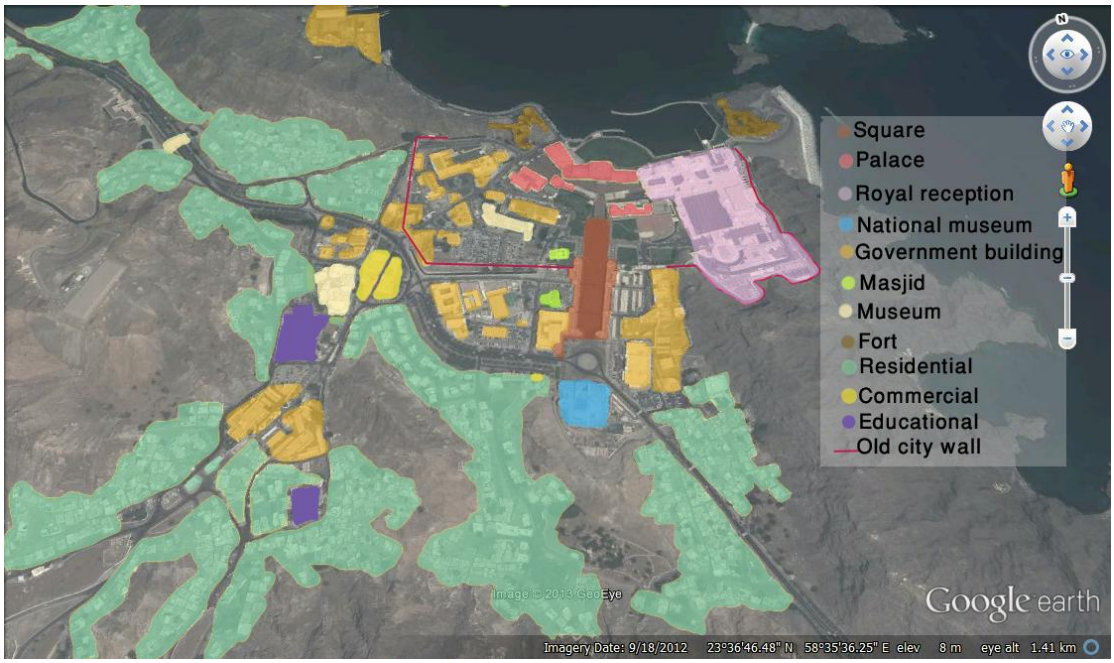


Figure 5.3: Land uses in the urban fabric surrounding Palace Square.

5.2.2. Municipality Square

Municipality Square is located facing a commercial boulevard in a commercial district (see Figure 5.4). It is a landmark and a focal point in its urban design structure. It was designed by Muscat Municipality and was inaugurated on the national day as part of the country celebrations of the modern renaissance era. There is harmony in the massing of building volumes and no domination of huge buildings. The dimensions of the square are 160m x 90m; its ratio is close to what was found as a good proportion in the literature review, however, it is considered beyond the recommended size to respect the human scale (see Section 2.3.3). There is variety in land uses in the urban fabric. Mixed used buildings are dominant. The Ministry of Commerce and Industrial, Muscat Security Market, Oman Chamber of Commerce and Industry, Central Bank of Oman, banks, offices buildings, companies, shops restaurants and residential flats are within the close urban fabric of the square. Roads and parking dominate over the pedestrian network. Pedestrians are not invited because of the lack of a proper walking and cycling network. The square is not well integrated with the surrounding area as it faces the street rather than offices, flats, restaurants, cafés and shops. Even the existing restaurant and the two cafes are facing the car park rather than the square (see Figures 5.5 and 5.6).

Figure 5.4: The Municipality Square (Sources: http://www.reiseberichte.bplaced.net/oman/muscat-oman-01.jpg and http://main.omanobserver.om/?p=8223)

Figure 5.5: Municipality Square aerial view.

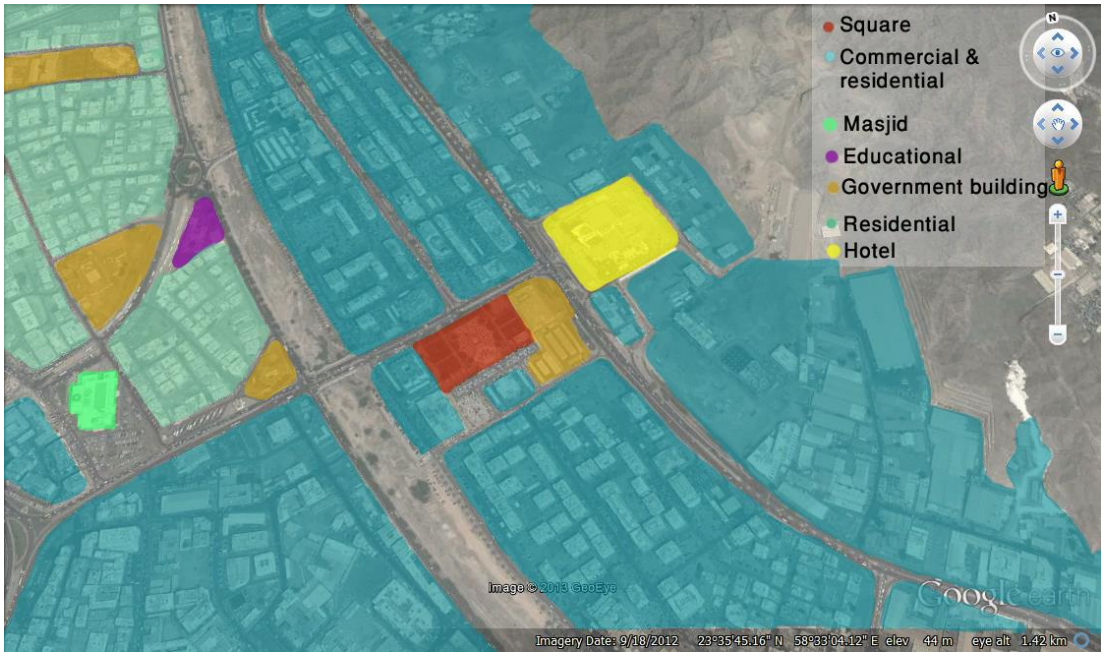


Figure 5.6: Land uses in the urban fabric surrounding Municipality Square.

5.2.3. Ministries Plaza

Compared to the previous squares, Ministries Plaza is located in a less mixed used area. It was designed by Muscat Municipality as a landscape beautification project on a highway right-of-way area. It is surrounded by ministries buildings and separated from the mixed commercial use district by a highway (see Figure 5.7). Apart from offices there are no other activities around the plaza. It appears in the overall context as if it is part of left over space rather than a sensibly provided space. Since the function of the surrounding buildings is as head offices of government departments, the physical built environment is based on rather big buildings with wide open parking areas which do not correspond well to the human scale. Roads and large parking areas dominate the urban structure. There are no pedestrian or cycling networks linking the spaces in the urban fabric. The dimensions of the plaza are 310m x 75m, which is considered large and not within the recommended ratio for respecting the human scale (Figures 5.8 and 5.9).

Figure 5.7: The Ministries Plaza (Source: http://www.omanet.om/english/misc/expanding.asp)

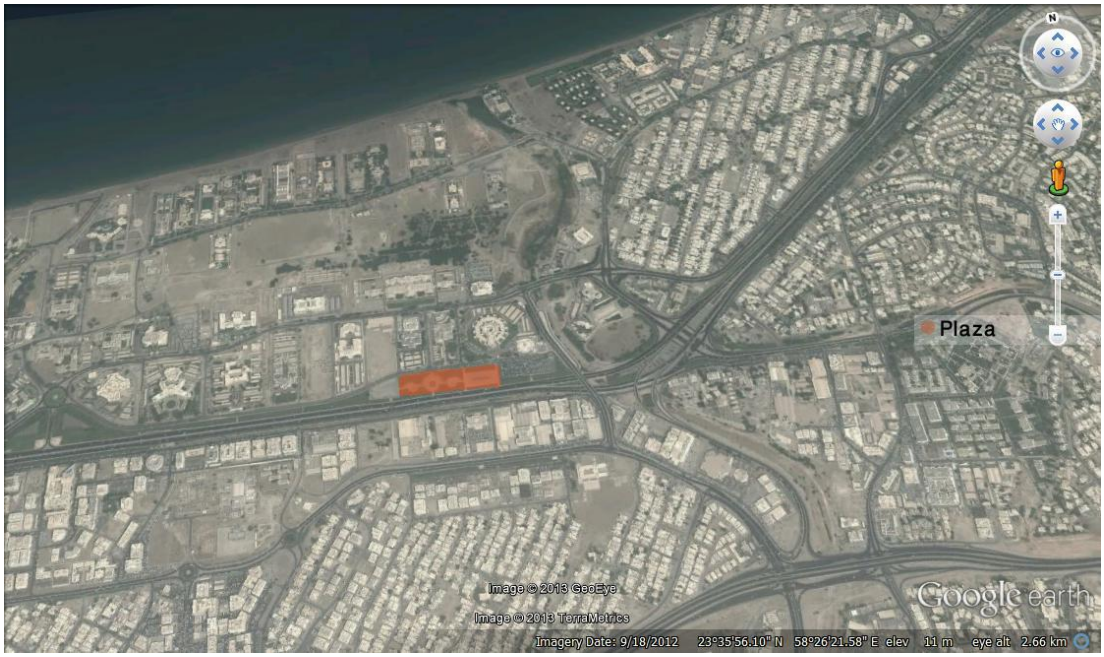


Figure 5.8: Ministries Plaza aerial view.

Figure 5.9 Land uses in the urban fabric surrounding Ministries Plaza

5.2.4. Muttrah Plaza

Muttrah Plaza, as shown in the aerial view, is part of the natural curved coastal line (see Figure 5.10). The area is tightly bound due to the surrounding mountains from south and west, and the sea from the north. Similar to the Ministries Plaza, this plaza was designed by Muscat Municipality as a landscape beautification project on road right-of-way area. The plaza is 1,000 metres away along the waterfront from Souq Althalam or the traditional market, which is a historic site and tourist location. Further along the bay is the existing international marina, which is a development of a historic harbour. Muttrah Fort is also a historic element of the area which was used for military defence of the harbour and the ancient city of Muttrah. Today the urban fabric is very multifunctional, as more activities have been added such as schools, fish market, vegetable market, hotels, museum, restaurants, cafes and Al-Riyam Park. However, the plaza itself is rather isolated from the busy mixed-use urban fabric. Although, the plaza is irregular in shape, its dimensions are roughly around 155m x 60m. It is longer than the figures recommended by research, but very close to these. Compared to the previous spaces it has the size that most respects the human scale. There is domination of roads and parking spaces due to the limitation in land. The urban structure still relies on cars, with a lack of well-designed pedestrian and cyclist networks. Since the corniche pedestrian path is literally a street side walkway, it is not very convenient for people to use and not safe for children (Figures 5.11 and 5.12).

Figure 5.10: Muttrah Plaza (Sources: http://avb.s-oman.net/showthread.php?t=1915024 and http://www.omantourism.org/wps/wcm/connect/c0044d80479e2854bceffefde0ccbc90/PortSultanQaboos.jpg?MOD=AJPERES&CACHEID=c0044d80479e2854bceffefde0ccbc90)

Figure 5.11: Muttrah Plaza aerial view.

Figure 5.12: Land uses in the urban fabric surrounding Muttrah Plaza.

5.2.5. Evaluation of the urban context of the case study spaces

Whyte (1980), Jacob (1961), Ghel (2010) and others emphasised that the urban fabric has to be designed in an artistic way to welcome the public to use it day and evening. However, the urban structure of all case study spaces were not based on the life, space, building priority order advocated by Ghel (2010) in planning cities. It is clear that the urban fabric did not evolve around the case study spaces. In the case of Palace Square the space was created at the expense of removing existing urban fabric; and the remainder of the case study spaces were designed on left over spaces as part of road infrastructure projects and linked to 'beautification'. In addition, they were provided with very limited consideration for participation in city life. In all the spaces surrounding land uses were either not well mixed or not well linked to the space, which constrains their liveability. The surrounding urban structure of the case studies is based on roads with clear negligence of pedestrians. The urban structures of the case studies do not invite people to walk. The sizes of all the case study spaces are beyond the recommended dimension and not in a ratio which is regarded to respect the human scale according to existing urban design research. All of them exceed the *'social distance'* maximum135m length which is recommended for a liveable space.

5.3. Spatial environment assessment

Since the urban design audit and urban design inventory are based on the observer's opinion of built environment, in order to validate the application of these methods the work was done by a team of experts (see Chapter 3). The team consisted of a planner from an architectural background, a planner from a civil engineering background and two architects. As there are elements that might be vary in different seasons such as climate, sound, olfactory sensation, etc. Two of the evaluation team members applied the methods in winter and the other two in summer.

5.3.1. Urban design audit

The urban design audit is known as the Measurement Instrument for Urban Design Qualities Related to Walkability (Ewing et al., 2005a, 2006 cited in Forsyth, et al., 2010). This section assesses the appearance of urban design and landscape quality from a pedestrian point of view. Its emphasis is on whether or not places feel walkable and on a human scale. The sheet used evaluates the urban design concepts of imageability, enclosure, human scale, transparency and complexity, using a Likert scale of 1 to 5, with 1 being minimum and 5 maximum (see Appendix C).

***Imageability*:** The memorableness of the space's spatial environment was assessed by evaluating the built environment and users' interaction with the space. The collected data shows that the physical feature in Municipality Square is highly imageable (see Table 5.1). This is possibly due to the outstanding design of the square as it is a national symbol in the city. With small differences in scores, the Palace Square, Ministries Plaza and Muttrah Plaza were recorded as being less imageable spaces (see Table 5.1).

***Enclosure*:** Enclosure is a measure of the physical definition of a space. Palace Square scored the highest as the urban design is clearly enclosed by the arcades and soft landscape. This is followed by the Municipality Square, probably because it is also well defined by street, landscape and building lines. The plazas scores were similar to each other. Ministry Plaza had the lowest score due to its being open directly to parking areas on two sides without design elements which gave a sense of enclosure.

Human scale: Respecting the human dimension in conditions for walking, bicycling and using outdoor spaces is essential for making city life viable (Gehl, 2010). Human scale in the case study spaces was evaluated by assessing the square or plaza's dimensions, walkways, soft landscape elements and building heights. Apart from the Palace Square, the human-scale scores were similar for all case studies. Muttrah Plaza scored highest in terms of respecting human scale as its design considers the pedestrian. Then Municipality Square and Ministries Plaza scored just below Muttrah

Plaza. However, Palace Square recorded a low score as its built environment is not of a suitable scale to match with the human figure and is not provided to be perceived by pedestrians.

Transparency: Liveable spaces, as mentioned in Chapter 2, are usually characterised by high transparency or soft edges, as Ghel (2010) found. This was measured by evaluating the degree of visual contact between the space and its surrounding edge. Muttrah Plaza has the highest transparency score (as in Table 5.1) because it is part of the corniche where people walk around and it is also open to the street. It is followed by Ministries Plaza and then Municipality Square, the activities in both being clearly observed from the street. The lowest score was in Palace Square due to the lack of soft edges in its surrounding buildings and arcades. However, all case studies missed the connection of activities between and in the space.

Complexity: Complexity is the richness of the built environment and activities. All case studies, except Palace Square, had lower scores in complexity compared to other criteria. Palace Square scored as more complex because of the richness in its design and usage of colours (see Table 5.1). Although Muttrah Plaza is the only case study space with a few pieces of public art, it was considered the less complex because it is less sophisticated in its overall design. All case studies are poorly (or not) provided with public activities such as outdoor dining, public art and colourful buildings – they all have muted colour palettes.

Space	Criteria	Mean	Median	Min.	Max.	SD
Palace Square	Imageability.	3.75	3.5	3	4	0.5
	Enclosure.	4	4	4	4	0
	Human scale.	2	2	1	3	0.82
	Transparency	3.75	4	3	5	0.96
	Complexity.	3.75	3.5	3	4	0.5
Municipality Square	Imageability.	4.75	4.5	4	5	0.5
	Enclosure.	3.75	3.5	3	4	0.5
	Human scale.	4.25	4.5	4	5	0.5
	Transparency	4	4	4	4	0
	Complexity.	3.5	3.5	3	4	0.58
Ministries Plaza	Imageability.	3.25	3.5	3	4	0.5
	Enclosure.	3.25	3.5	2	4	0.5
	Human scale.	4.5	4.5	4	5	0.58
	Transparency	4.25	4.5	4	5	0.5
	Complexity.	3.5	3.5	3	4	0.58
Muttrah Plaza	Imageability.	3.25	3	2	4	0.96
	Enclosure.	3.5	3.5	3	4	0.58
	Human scale.	4.25	4.5	4	5	0.5
	Transparency	4.75	4.5	4	5	0.5
	Complexity.	3	2.5	1	4	1.41

Table 5.1:Result of urban design audit scores for the four case study spaces.

5.3.2. Urban design inventory

The urban design inventory is a checklist that evaluates the spatial built environment (see Chapter 3). The questions used concentrate on different urban design topics such as accessibility or flow of movement, space enjoyment or general attractiveness, and perceived safety both from traffic and from abuse by crime. It also focuses on barriers, surrounding buildings, bicycle lanes, roads, lighting, maintenance, neighbourhood identification, olfactory character, sound, parking, street crossing, soft landscape and consideration of climate (see Appendix D). It was developed as part of the Robert Wood Johnson Foundation funded Active Living Research Program (Forsyth, et al., 2010). The tool was developed to accommodate religious, social and climatic differences by reforming some questions. Questions were designed by adapting the urban design inventory to explore the presence or absence, and relative quantity (for example some, few or none) and quality (bad, satisfactory, good), of each of the above elements. The team examined the case studies using the urban design inventory. The following analysis presents the strengths and weaknesses in each space.

Access

Palace Square: The expert team evaluated Palace Square as a not quite barrier-free space with fairly good movement connections. It has good quality vehicular access with sufficient parking space. However, there is lack in quality and quantity of pedestrian lanes and an absence of cycling lanes leading to the square. Access to public transportation was measured as low and bad quality. There is no proper pedestrian network connecting the place with other locations. There is no bicycle network or proper cycle lane wide enough to accommodate cyclists. Lanes leading to the square are not suitable for people with disabilities. There is no connectivity with other nearby public spaces.

Municipality Square: From the data there are few pedestrian and vehicular access points and parking spaces near to the Municipality Square, and these are not in good condition. Connections leading to the square are insufficient. There is fairly good access to public transportation. The place is open and barrier free to some extent. There is a lack of bicycle lanes and bicycle parking. The pedestrian network does not connect the square well with other locations.

Ministries Plaza: The Ministries Plaza is a barrier free space. There is sufficient car parking near to the plaza. The pedestrian access leading to the plaza is well provided with movement connections. Bicycle lanes leading to the plaza and bicycle parking are lacking. There is access to public transportation but not with good quality.

Muttrah Plaza: Muttrah Plaza is a good barrier-free space. There is good quality of pedestrian access leading to the plaza and proper movement connections. The plaza is very well connected with other public spaces within a short distance. There is suitable car access to the plaza but there is no access to public transportation and bicycle lanes leading to the place and bicycle parking are lacking.

As discussed above, car access and parking are well provided in all case study spaces. However, public transportation has been in decline in Muscat (Chapter 4). The city has recently come to greatly rely on cars, which explains the lack of public

transportation access in the case study spaces. Cycling is not implemented as a concept in the planning system (Chapter 4). Therefore, there are no bicycle lanes or bicycle parking.

Circulation around the spaces

Palace Square: Sidewalks in Palace Square were well provided with suitable lanes for users of all ages. The design is average in terms of it being welcoming. Pedestrian lanes were not designed wide enough to provide easy access for pedestrian traffic to all areas of the public space. The design layout did not quite allow users to enter the place from any side, creating multiple pathways. The main axis of the square provided direct views to the focal point, which is the palace. The design of the place is not flexible in the sense of allowing visitors to circulate freely between different sections because of the two roads crossing the square.

Municipality Square: Municipality Square has satisfactory quality of sidewalks. The circulation is designed with direct views and to draw individuals to the focal points. Pedestrian lanes are not wide enough to provide easy access for pedestrians. The lanes are not suitable either for users of all ages or people with disabilities. The design allows to some extent individuals to enter the place from any side, creating multiple pathways. There is no specific bicycle network in the square. The square is quite flexible, allowing visitors to circulate freely between different sections.

Ministries Plaza: Users are easily allowed to enter the plaza from any side creating multiple pathways. The designed axis is creatively provided to direct views and to draw individuals to the focal points. All lanes are very suitable for people with disabilities and users of all ages. Sidewalks to give access to both car parking and amenities are not well provided and not wide enough to provide easy access for pedestrians. The layout of the space is allowing visitors to circulate freely between different sections. There is no connectivity with other public spaces within a short

distance or a proper pedestrian network connecting the place with other locations. A bicycle network is missing.

Muttrah Plaza: Users are allowed to enter the place from any side, creating multiple pathways. Axes are provided by the design to direct views and to draw individuals to the focal points. Lanes are suitable for users of all ages. Sidewalks for both car access and amenities are suitable. Pedestrian lanes are designed fairly wide to provide easy access for pedestrian traffic to all areas of the public space. Lanes are suitable for people with disabilities. A pedestrian network connecting the place with other locations was scored as poor. There is no bicycle network in the place.

In the sense of circulating freely and protection from traffic, the squares are better than plazas. Connecting the spaces with their surroundings by walkways varies. The weakness of the walkability concept in the Omani planning system is clear, which is reflected here in the weakness in quality of walkways network and absence of cycling routes. Circulation in such a harsh hot local climate requires careful design to create bearable and pleasant conditions for users. Trees, shade, small scale and suitable materials are the main element to provide such acceptable walking and cycling experiences, but these are lacking in the case study spaces.

Design features

Palace Square: The analysis shows that the design of Palace Square is that of a well unified space with clearly delivered spatial meaning and good sense of enclosure. However, the high sense of enclosure creates visual and physical barriers from the surroundings as the square is identified by arcades with a solid wall at the outer edge. It has good imaginable routes for the eye to follow with an uninterrupted flow of pattern elements. It provides elements with richness, variety of pattern and efficient use of colours. The design presents quite good proportion in the relationship between the space and built masses. It also shows good consideration in combining its special character and sense of identity. It also has weak combination of different material

textures in elements used on surfaces within the space. The team agreed that the design features did not quite respect to human scale.

Municipality Square: The square's appearance is well unified. Real paths and imagined routes are consciously provided and could be easily followed by the eye. There is a good combination of different textures in single elements within the space surface. The design has successfully combined the special character and sense of identity. From the data collection, use of colours in the space is quite effective. The relationship between masses and the space is provided in a very good proportion and in appropriate proportion to the human scale and comfortable to the pedestrian. The design delivered good spatial value to the space with good sense of enclosure. Human activities are clearly visible from the edge of the street. The design has provided a good richness and variety of pattern elements. It has good continuous flow of pattern elements.

Ministries Plaza: According to the expert team, Ministries Plaza appeared well unified. Its design provided clear real paths and imagined routes that the eye follows when observing the space. The design effectively used colours, combination of different textures in single elements within the space surface and combined special character and sense of identity. There is a good continuous flow of pattern elements. The design adds spatial value to the space with clear sense of enclosure. Human scale is well respected by the design features, which creates comfortable environment for the pedestrian. Activities in plaza are clearly visible from the edge of the street.

Muttrah Plaza: There is proper proportion between the masses in the plaza and a good combination of different textures in single elements within the space surface. The design respects the human scale well. There is proper usage of colours and good special character and sense of identity. The design delivered value to the space. The plaza's appearance is unified presenting real paths and imagined routes that the eye follows. The richness and variety of pattern elements was evaluated as good. Human activities are clearly visible from the edge of the street. The plaza has a weak sense of enclosure with interrupted flow of pattern elements.

Case study spaces were scored generally well in all design features. However, the Palace Square shows weakness in combining different materials textures and in respecting human scale, whereas Muttrah Plaza presents weakness in sense of enclosure with interrupted flow of pattern elements.

Place attraction

Palace Square: There is no natural view around the space. From the analysis, the attractive focal point in the square is probably the palace. However, the design layout, urban furniture, activity focal point and view around the square were measured as quite attractive. The drawback of the design was the low consideration in providing seats with a variety of views of the square. There was no display of public art in the space.

Municipality Square: There are no natural attractive views around the place that the design could make use of. The design is provided with attractive focal points which create activity throughout the place. Design layout, paving pattern, lighting features and surrounding buildings are attractive. The design delivered satisfactory attractive views in the square. The urban furniture and arrangement of seating facing varying views of the plaza are suitably provided.

Ministries Plaza: The design layout of Ministries Plaza is attractive and surrounded by good looking buildings. Lighting features are very attractive. The plaza is surrounded with buildings and roads and there is a lack of spectacular natural views around the plaza. The design delivered attractive views within the plaza itself. There are attractive focal points which create activity throughout the place. Seats are arranged to allow the observing of various attractive views of the space. The paving pattern and urban furniture are beautifully provided.

Muttrah Plaza: The plaza is located in an attractive area. The design successfully makes use of spectacular natural views and attractiveness of the surrounding buildings. It also created attractive fountains as focal points which create activity

throughout the place. Urban furniture and lighting features were evaluated as fairly attractive. Seats are arranged suitably to allow the observing of various views of the space. There is good display of public art. However, the layout design scored as not very attractive.

Case study spaces scored high place attractiveness. However, only Muttrah Plaza has display of public art. Seats in Palace Square were scored low due to the low provision of these to allow admiring a variety of views of the square.

Place safety

Palace Square: The design of the Palace Square was evaluated as safe from traffic and crime. However, the design scored as satisfactory in providing safety for children, elderly people in the space, road crossing and pedestrians at parking space. In addition, there is no specific parking for people with special needs or connected to the place by a safe walkway. There is no specific parking for people with young children in buggies. Parking is not provided for people with children connected to the place by a safe walkway.

Municipality Square: The design of Municipality Square was evaluated as average with regard to traffic and good prevention of crime. It provides suitable safety for children and elderly people. However, the parking area is not safe for pedestrians as there are no safe walkways that connect space with the available parking. There are a few specific parking spaces for people with special needs but these are not well connected to the square by a safe walkway. Parking for people with young children in buggies is missing. There is a safe street crossing leading to the square.

Ministries Plaza: Safety for elderly people is very well provided in the Ministries Plaza. The plaza has a good prevention of crime with good safety provision for children and young people. The design provides satisfactory safety from traffic. There is lack of safe street crossing. Parking spaces are not designed with safety

standards of pedestrian walkways. Parking and safe lanes for people with young children in buggies and for people with special needs are missing.

Muttrah Plaza: Muttrah Plaza's design provides good prevention of crime. It also provides suitable general safety from traffic. It does not provide sufficient safety for children and elderly pedestrians from traffic as the parking area is very close and barrier-free. There is no parking and connected safe walkway for people with special needs or for people with young children in buggies. There is one safe street crossing and it is quite a distance from the plaza.

The designs of all case study spaces were considered by the team of professional assessors as crime free. Safety from traffic, however, lowered the safety rating in general as all spaces are surrounded by roads. Since the plazas were originally provided as road beautification projects they are more exposed to the roads and parking areas than the squares.

Complexity

Palace Square: The buildings surrounding the Palace Square appeared with complexity and diversity in use of colour and material. There is less diversity in the usage of the surrounding buildings. However, variety of space usage was limited in the design. The team recorded the diversity of types of users in the space.

Municipality Square: There is good diversity in the usage of the surrounding buildings and in the square. There is a high degree of complexity in the appearance of the surrounding buildings. Design is provided with fair complexity in the use of material and colours. The inventory tool shows that users are not very diverse in the square.

Ministries Plaza: The Ministries Plaza presented a fair degree of complexity in materials and colours used in the space. Team observations showed a high diversity of users. There is satisfactory variety of usage in the space. The surrounding

buildings appeared with quite high complexity but with very limited variety in the usage activities.

Muttrah Plaza: The team found that users are quite diverse in Muttrah Plaza (Section 5.4 provides more details of the type of users in all the case study spaces). The complexity in the appearance of the plaza was evaluated as not quite complex in the surrounding buildings and material used in the place. The activities in the nearest buildings are very diverse. However, the plaza's colour is not complex. The range of activities in the space was evaluated as very limited.

The spaces were evaluated as displaying high complexity in urban design elements such as usage of colours and materials. Nevertheless, they have limited complexity in the range of users' activities.

Good Place-keeping

Palace Square: Palace Square appeared very clean, well maintained and vandalism free. Soft landscape, hard landscape, lighting features and urban furniture are well maintained. There is a lack of waste disposal bins, which decreases the cost-effectiveness of place-keeping as all cleaning is done by workers. As the concept of recycling is still not initiated in Muscat, there are no recycling bins in the square or elsewhere.

Municipality Square: Municipality Square is vandalism free. Waste disposal bins are placed strategically near local seating areas. The square design is prepared to be cost-effective from the maintenance point of view. However, the square is not set up to use resources from its facilities, such as cafés and restaurants, in financing its own upkeep and maintenance of the space. Soft and hard landscape are not well maintained. The square does not appear clean. Lighting features are not well maintained and not replaced once needing it. Urban furniture is not well maintained.

Ministries Plaza: Ministries Plaza appeared very clean. It required high maintenance and it is not a cost-effective space from this point of view. The plaza is free from vandalism. Soft and hard landscape are very well maintained. Lighting features and urban furniture are also well maintained and replaced once needing it. Waste disposal bins are available but not placed strategically throughout the space.

Muttrah Plaza: Lighting features are very well maintained and replaced once needing it. The plaza appears clean and free from vandalism. Waste disposal bins are placed strategically in the plaza. The plaza have efficiently maintained soft, hard landscape and urban furniture. Cost-effectiveness was not considered in the design of the plaza, with little maintenance of displays.

Place-keeping in the sense of maintenance and cleanness is very high in all spaces except in the Municipality Square, which was assessed as having low maintenance levels and cleanness. The political value of the spaces appears to play a major role in this regard, as the Palace Square showed very high maintenance and cleanness because of being located by the palace, followed by the plazas because Ministries Plazas is overlooked by the head offices of ministries and Muttrah Plaza because it is on the royal route near to the palace. However, despite the Municipality Square being located in a commercial district area and being overlooked by the Ministry of Commerce and Industry, it does not have the same political value as it does not fall on the main royal route.

Climate-responsive design

Palace Square: The design provides shade from the arcades. However, natural shade is not well considered as all trees used in the design have small shades and are located away from each other. There is no consideration of protecting the square from hot wind by design as the material used in the arcades is concrete and they had a wall along one side, which prevents cross-ventilation, which prevents air movement in them. No creative solution has been used to reduce the air temperature.

Municipality Square: The Municipality Square design has been provided with fountains as elements of water to reduce temperatures and add a sense of calm to the place. The design has not protected the square from being exposed to direct hot winds. It does not provide solutions to reduce the air temperature by sensibly using the sun's movement to provide shady points or provide shade features such as gazebos.

Ministries Plaza: The design provides suitable natural shade by providing trees and design feature such as gazebos. The design did not take advantage of the sun's movement to provide shady points. It did not protect the space from being exposed to direct hot winds or provide solutions to reduce the air temperature. The fountain is not provided in a way that helps in reducing temperatures and adds a sense of calm to the place. It is not surrounded with trees to generate air flows in the space.

Muttrah Plaza: The design provides a few natural trees and shade features such as gazebos. The solutions that the design provides were evaluated as insufficient to reduce the air temperature. The fountain is not provided consciously to calm the atmosphere as it is not surrounded by trees or shaded area to help the air circulate and cool. The design does not protect the space from being exposed to direct hot winds. It does not take advantage of the sun's movement to provide shady points.

As has been mentioned, the local climate is a major challenge in providing liveable open spaces in Middle-Eastern cities. However, it is possible as Shaftoe (2008) in Section 2.3.3 and Hassaan & Mahmoud (2011) in Section 2.6.3 addressed. Careful consideration of the positioning of trees, physical elements and water feature, as well as of the selected materials and size of the space, are all issues which have to be born in mind in designing public open spaces in this region. The case study spaces do not evidence such considerations having substantially influenced their design.

Soft landscape features

Soft landscape in Palace Square is presented beautifully without disturbing the attractive view of the place. There is an average contrast in colour and types of vegetation. In Municipality Square soft landscape is also presented without disturbing the attractive view of the place. The layout of soft landscape is not beautifully provided, with limited variety in colour and types of vegetation. The layout of soft landscape in Ministries Plaza is beautifully provided with contrast in colour and types of vegetation. It is presented without disturbing the attractive view of the place. Whereas in Muttrah Plaza soft landscape is provided with limited contrast in colour and types of vegetation and without disturbing the attractive view of the place. The layout of soft landscape is not beautifully provided in this space.

Connecting and interaction with the surrounding nature

Palace Square is not on a site connected with nature. Therefore, apart from birds it is not easy to interact with the non-human inhabitants of the square. In Municipality Square the interaction with fauna is very limited as the place is not connected with nature. Ministries Plaza is not connected with nature. There is no interacting with fauna. The design of the Muttrah Plaza, however, is strongly connected with nature. Users easily interact with the fauna of the place such as seagulls, pigeons and dolphins.

Usage friendliness

Palace Square: Palace Square is a tourist destination as it is the frontage of Al-Alam, the most important royal residence and the head of state reception palace. It also acts as a transaction area for users based in the surrounding buildings. It is almost empty all the time and not lively in its use. There are no street vendors in the square. When it is used, it is used by families, all ages, disability and all ethnic

groups, but it is not used for social events due to the restrictions on social gathering in this specific space. The design provides noise reduction by creating a wide range of quieter areas to ensure a more social environment. Good public toilets are available. There is no proper accommodation for different activities in the square. Seating choices are not wide and not very comfortable. Whilst there is access to cafés, both the quality of service and design were measured as bad.

Municipality Square: Municipality Square is used to celebrate social events. It is not a destination or transaction area for users. Users of the square were evaluated by the team as not representing a mixture of ethnic groups, whilst use by families was low. There is good comfortable and adequate seating, but not enough variety of seating opportunities which can accommodate those of all ages, nor to suit individual and group activities The square was evaluated as giving low consideration to people with disabilities as its layout consists of different levels with no ramps to access some of the levels. Different activities are not fully accommodated. There is access to cafés and restaurants, but their services were evaluated as low in quality. There is no access to street vendors. Public toilets are missing.

Ministries Plaza: The plaza was evaluated as a destination space that attracts different people is not a good transaction area or tourist destination. It is well used by families and a wide range of ethnic groups. It is perceived as a Child-friendly area as it is located away from heavy automobile traffic. It is used to celebrate social events but not used heavily in every day terms. The design provided a wide variety of seating choices from lawn space to benches for users to accommodate those of all ages. The highway causes a high level of noise and the design has not provided solutions to reduce this. There is a lack of public toilets.

Muttrah Plaza: The plaza is a users' destination, a transaction space and part of a touristic area. It is comfortable for users from all ethnic groups. It is family-friendly but not used to celebrate social events. It is not a reasonably child-friendly area as it is not protected from heavy automobile traffic. The plaza was evaluated as giving low consideration to people with disabilities due to the absence of ramps. It is livelily and there are vendors in the plaza. There is a fair range of seating opportunities

which can accommodate those of all ages. It is exposed to the street and the design does not prevent the space from noise. There is no access to cafes or restaurants in the plaza. Public toilets are not provided.

Usage friendliness is concerned with the evaluating the possibility of hosting user activities in the space. There is shortage in such provision of users' facilities in all the case study spaces.

Place character

Palace Square is part of a historical area with an identified architectural character. The square design appears sophisticated. Municipality Square is not part of a historical area. The design has architectural character and appears sophisticated. The district has good architectural character. Whilst Muttrah Plaza is part of a historical area and has architectural character, the plaza itself is not outstanding in its design compared to the other spaces.

Olfactory character

Palace Square has no special present smell but the air is fresh and free from pollution. In Municipality Square the air is fresh without unpleasant odours, but quite polluted. There is a bad odour of Asian food being cooked by the attached restaurant. The air in Ministries Plaza has a low degree of freshness, without any particular smell present. It was evaluated as polluted due to the heavy traffic from the highway. Since Muttrah Plaza is on a coastal location, it has fresh air without unpleasant odours or pollution.

Sound character

Palace Square is free from traffic noise and loud annoying noises. There is an appealing natural sound of birds. Municipality Square was quite noisy because of traffic and loud music from a tape recorder belonging to a group of teenagers, which some people may find annoying. There is no natural sound of birds. Ministries Plaza is noisy due to the heavy traffic on the highway, but free from loud annoying noises from the users such as loud music. There is an appealing natural sound of birds. Muttrah Plaza has pleasant natural sound of birds and sea waves, and is free from annoying noises from the users such as loud music. However, it is not quite free from traffic noise.

Neighbourhood

Palace Square: The design of Palace Square is surrounding residents or within the context of the urban fabric. It is not connected with the surrounding neighbourhoods by walkways or bicycle paths

Municipality Square: The square is not well connected with the surrounding neighbourhoods by good walkways network. There are no bicycle paths connected with the surrounding neighbourhoods.

Ministries Plaza: There are no neighbourhoods in the surrounding area. The plaza is not well connected with the nearest neighbourhoods by proper walkways or bicycle paths.

Muttrah Plaza: Muttrah Plaza is not within the context of the urban fabric as it is quite isolated from the built-up area. The plaza is located away from residential areas and not connected by either walkway or cycle paths.

It is crucial that the design of public open spaces considers the existing community in order to create liveability (Carmona et al. 2008). Considering of the existing

community could be improved by connecting the space with any adjacent residential areas. Residential neighbourhoods are within the urban fabric in close proximity of all the case study spaces apart from the Ministries Plaza. In all cases the physical connections represented in walking and cycling paths to the neighbourhood are weak in continuity and quality.

5.3.3. Visual assessment

A visual assessment technique was used to evaluate the contrast and focal element domination in each space. Based on a set of visual features such as scale, line, form and colour, differentiated by either dominance or contrast (Figure 5.13 to 5.19), this tool overlaps with the Design Features part of the urban design inventory. The spatial domination score is a combination of spatial composition: landscape composition (whether panoramic, enclosed, with a distinctive feature, a clear focal point, or canopied), spatial position: the prominence of an element as a result of its elevation and location in the landscape. It also evaluates to what extent the dominant feature stands out in the foreground or whether it is inconspicuous (Forsyth et al. 2010). Palace Square scored high in line, texture colour and form; whereas its weakness was in scale (see Table 5.2). Municipality Square scored high in form and scale contrast; whereas texture, colour and line where average (see Table 5.3). Ministries Plaza was better in colour, line, texture and scale; and average in form (as in Table 5.4). As shown in Table 5.5, Muttrah Plaza was generally low in its scores. It scored lowest in colour, form, line and texture; however, it got a better score in scale. With regard to the overall contrast in variety of the space design, the Ministries Plaza scored the highest followed by Municipality Square, Muttrah Plaza and Palace Square respectively. In domination of a specific feature in a space Municipality Square came first, then Palace Square followed by Ministries Plaza and Muttrah Plaza. In the spatial domination in each space the sequence was as Palace Square, Municipality Square, Ministries Plaza and Muttrah Plaza. However, the overall score of visual assessment shows Municipality Square and Ministries Plaza came at the top, with both the Palace Square and Muttrah Plaza scoring lower.

Criteria	Mean	Median	Min.	Max.	SD
Colour contrast	4	4	3	5	1.15
Form contrast	4	3.5	3	4	0.5
Line contrast	4.25	4.5	4	5	0.5
Texture contrast	4	4	3	5	0.82
Scale contrast	3.5	3	2	4	1
Contrast score	**15.75**		**15**	**23**	
Scale domination	4	4	4	4	0
Spatial domination	4	4	4	4	0
Overall score	**24**		**25**	**31**	

Table 5.2: Result of Palace Square visual assessment score.

Criteria	Mean	Median	Min.	Max.	SD
Colour contrast	4	4	3	5	0.82
Form contrast	4.25	4.5	4	5	0.5
Line contrast	3.75	3.5	3	4	0.5
Texture contrast	3.5	3.5	3	4	0.58
Scale contrast	4.25	4.5	4	5	0.5
Contras score	**19.75**		**17**	**23**	
Scale domination score	4.5	4.5	4	5	0.58
Spatial domination score	3.75	3.5	3	4	0.58
Overall score	**27.75**		**24**	**32**	

Table 5.3: Result of Municipality Square visual assessment score.

Criteria	Mean	Median	Min.	Max.	SD
Colour contrast	4.25	4.5	4	5	0.5
Form contrast	4	4	4	4	0
Line contrast	4	4	4	4	0
Texture contrast	4	4	4	4	0
Scale contrast	4.25	4.5	4	5	0.5
Contrast score	**20.5**		**20**	**52**	
Scale domination score	3.5	3	2	4	1
Spatial domination score	3.5	3.5	3	4	0.5
Overall score	**27.75**		**25**	**60**	

Table 5.4: Result of Ministries Plaza visual assessment score.

Criteria	Mean	Median	Min.	Max.	SD
Colour contrast	4	4	3	5	0.82
Form contrast	3	3	3	3	0
Line contrast	3.5	3.5	3	4	0.58
Texture contrast	3.25	3.5	3	4	0.5
Scale contrast	3.75	4	4	4	0.5
Contrast score	**17.5**		**16**	**20**	
Scale contrast	3.5	3.5	3	4	0.58
Spatial domination score	3.25	3	2	4	0.96
Overall score	**24**		**19**	**28**	

Table 5.5: Result of Muttrah Plaza visual assessment score.

Colour

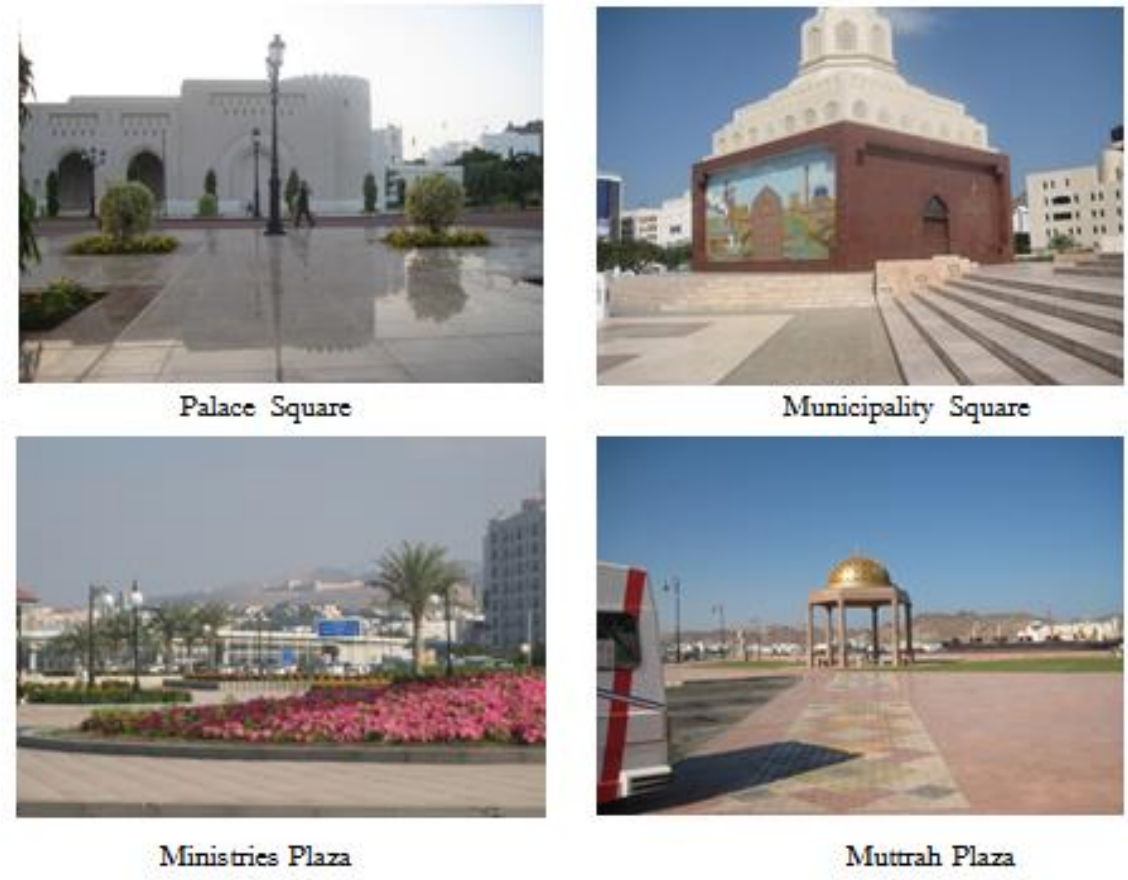


Figure 5.13: Colour contrast pattern in each case study.

Form

Figure 5.14: Form contrast pattern in each case study.

Line

Figure 5.15: Line contrast pattern in each case study.

Texture

Figure 5.16: Texture contrast pattern in each case study.

Scale contrast

Figure 5.17: Scale contrast pattern in each case study.

Scale Domination

Figure 5.18: Scale Domination in each case study.

Spatial domination score

Figure 5.19: Spatial scale domination in each case study.

From the urban design audit, urban design inventory and visual assessment tools used in the four case study spaces, it may be concluded that according to experts the designs of the squares and plazas score fairly well as spaces, particularly in relation to more visual aspects of the design. However, they score less well in relation to functional aspects such as walkability and human comfort (for example shading). The question therefore remains as to how liveable these spaces are in reality. The next few tools will help reveal this, starting with the observation and behaviour mapping presented in the following section.

5.4. Observation and behaviour mapping

Behaviour mapping was conducted in Muscat between 9 December 2011 and 8 January 2012. This time of the year is considered as having the pleasantest weather in Muscat. Therefore, it is the tourist peak season. The observation involved spending an hour periodically at the four selected case studies at three different times of the day (morning, afternoon and evening) twice each on weekdays and weekends (see Table 5.6). The observation included recording the day, time and temperature; and mapping where people were sitting, standing or walking, what they were doing, etc. As the record of activities was built up, patterns of these began to appear, which Whyte (1980) referred to as the '*Queue-graph of a space'*. The drawn maps represent roughly the overall location of activities within the observation hour. This method was used to gain an understanding of the users' interaction in the space and the way they reacted with to the built environment.

Case study	**Squares**						**Plazas**					
	Palace Square			**Municipality Square**			**Municipalities Plaza**			**Muttrah Plaza**		
Time slots for the one hour observation interval	Morning (7:00am-12:00pm)	Afternoon (12:00pm-4:00pm)	Evening (4:00pm-9:00pm)	Morning (7:00am-12:00pm)	Afternoon (12:00pm-4:00pm)	Evening (4:00pm-9:00pm)	Morning (7:00am-12:00pm)	Afternoon (12:00pm-4:00pm)	Evening (4:00pm-9:00pm)	Morning (7:00am-12:00pm)	Afternoon (12:00pm-4:00pm)	Evening (4:00pm-9:00pm)
Weekdays												
Day 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Day 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Weekend												
Day 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Day 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 5.6: Visiting timing for observation

5.4.1. Palace Square

Observations were conducted from different points of square. Observation points were selected strategically to achieve as much visual coverage as possible. Arcades were never one of choices as their design layout prevented from having an unobstructed view of the square. Different locations at the edge were the best in giving a clear wider view angle of the square. The weather was sunny most of the days, and even the cloudy days were very bright. A cool pleasant breeze was blowing in shaded areas. Temperatures ranged between 21ºC and 24ºC. There were construction noises on the opposite side of the square across the roundabout during the morning. As the area is surrounded by mountains there was an echo of the noises. The sound of birds was easily heard when there was no distraction. Noises from the dust cleaning machine and mopping machine were heard occasionally in the square. There was generally freshness in the air with no particular smell.

There was no significant difference in use of the square between weekdays and weekend, except that it is less used on weekend mornings. As the location is a tourist attraction and the observation was done during the tourist peak season, tourists especially from Europe constituted the overall majority of users. European users were the majority during mornings, with Omanis being the majority in the afternoons (see Tables 5.7 to 5.18). All European day users were dropped by tourist coaches at the edge of the square and spent no longer than 15 minutes, during which they walked towards the palace, and took some photos and then walked back to their coaches. During the evening most of the European users were visiting either as couples or in small groups.

The square is located in Muscat State. Users in this square did not represent the demography of Muscat State nor Muscat as a city in terms of nationality. The number of Omani residents was recorded as slightly more than double that of expatriate residents in Muscat State in the 2010 census (see Table 4.4, Section 4.3.1). The observation shows the number of Omani users was higher than that of expatriates only in the morning and afternoon of weekdays. They were crossing the square reaching the government buildings around the square or the Masjid for noon

prayer (see Figures 5.20 and 5.21). As mentioned in Section 4.3.1, the majority of the Omanis are not originally from Muscat and they are strongly connected to their extended families. Therefore, they travel to their home towns and villages outside the city during the evening and weekends. However, Omanis going to prayer were recorded approaching the Masjid at Friday prayer time on one of the weekend afternoons (see Table 5.16). As the square is a landmark tourist spot it probably attracts visitors from all over the country, especially in the evenings and at weekends. Nevertheless, at such times (evenings and weekends) the square was dominated by Asian expatriate users, which does not reflect the demography of the city. Again, as mentioned in Section 4.3.1, since most Omanis leave Muscat at the weekends and since most of the expatriate are low wage labour, this means that the potential of expatriates using open spaces more than the Omanis is high.

Statistics from the 2010 census indicate that Muscat State has a slightly higher number of Omani males than females. However, there is an extremely big difference between genders in the expatriate population, where the number of males is nearly six times higher than that of females, as mentioned earlier, because most of the expatriates are low income labour who stay in Muscat without their families (see Table 4.5 Section 4.3.1). Observation data shows a much bigger gap between female and male visitors among Omani users than that in the census, with female rates being far lower and not balancing with male visitors. The number of female users rose in the evenings and at different times at the weekends. The 2010 census recorded the population of girls just as slightly lower than that of boys in the young people group (see Table 4.7, Section 4.3.1); however, the number of boys using the square was recorded as noticeably higher than that of girls. This is probably because of religious and cultural reasons. The majority of girls were accompanied by adult relatives, whereas boys were seen alone or with friends of their age going to attend the prayer in the mosque, cycling or hanging around. In contrast, this gender imbalance was not the case for European visitors, for which the numbers of male and female visitors were very similar, and the ratio between male and female Asian visitors tended to reflect the existing gender imbalance in the resident expatriate population. Generally, taking photos of the palace was the main users' activity. Sitting, cycling, playing and

doing sport were very rarely observed, mainly during weekend afternoons and evenings (see Table 5.19 and Figure 5.22). The majority of users walk to approach the palace gate to take photos and then leave the square.

Nationality	Young people		Adult		Elderly	
	Male	Female	Male	Female	Male	Female
Omani	-	-	49	2	-	-
Asian	-	-	10	-	-	-
European	-	1	63	62	-	-
Cleaner worker	-	-	16	-	-	-
Security	-	-	3	-	-	-
Municipality worker	-	-	1	-	-	-

Table 5.7: Users' nationality and gender in Palace Square on weekday morning 1

	Young people		Adult		Elderly	
	Male	Female	Male	Female	Male	Female
Omani	-	1	29	2		-
Arab	2	1	3	3		
Asian	-		15	5	1	-
European	5	3	11	11	1	1
Cleaner worker	-		16	-	-	-
Security	-		-	-	-	-
Municipality worker	-		7	-	-	-
Police	-		3	-	-	-

Table 5.8: Users' nationality and gender in Palace Square on weekday morning 2

	Young people		Adult		Elderly	
	Male	Female	Male	Female	Male	Female
Omani	2	-	112	5	2	-
Arab		-	4	-		
Asian	5	2	8	10	-	-
European	1	4	7	13	2	-
Cleaner worker	-	-	7	-	-	-
Security	-	-	-	-	-	-
Municipality worker	-	-	-	-	-	-
Police	-	-	-	-	-	-

Table 5.9: Users' nationality and gender in Palace Square on weekday afternoon 1

	Young people		Adult		Elderly	
	Male	Female	Male	Female	Male	Female
Omani	1	2	32	6	1	-
Arab	-	-	-	-		
Asian	4	1	10	8	-	-
European	1	2	12	12	-	-
Cleaner worker	-		6	-	-	-
Security	-		-	-	-	-
Municipality worker	-		-	-	-	-
Police	-		-	-	-	-

Table 5.10: Users' nationality and gender in Palace Square on weekday afternoon 2

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	6	-	10	6		-
Arab	-	-	8	-		
Asian	7	9	20	24	-	-
European	-	-	3	1	-	-
Cleaner worker	-	-	2	-	-	-
Security	-	-	-	-	-	-
Municipality worker	-	-		-	-	-
Police	-	-	3	2	-	-
Soldier	-	-	1	-		

Table 5.11: Users' nationality and gender in Palace Square on weekday evening 1

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	9	3	10	2	-	-
Arab	-	-	2	4	-	-
Asian	-	2	11	1	-	-
European	2	2	9	14	-	-
Cleaner worker	-	-	5	-	-	-
Security	-	-	-	-	-	-
Municipality worker	-	-		-	-	-
Police	-	-	4	-	-	-
Soldier	-	-	-	-	-	-

Table 5.12: Users' nationality and gender in Palace Square on weekday evening 2

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	1	-	9	3		-
Arab	-	-	3	-		
Asian	-	3	11	5	-	-
European	4	2	21	21	1	1
Cleaner worker	-	-	4	-	-	-
Security	-	-	-	-	-	-
Municipality worker	-	-	3	-	-	-
Police	-	-			-	-
Soldier	-	-		-		

Table 5.13: Users' nationality and gender in Palace Square at weekend morning 1

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	2	-	8	2	-	-
Arab	1	1	1	1	-	-
Asian	1	3	14	6	-	-
European	-	-	22	22	2	2
Cleaner worker	-	-	2	-	-	-
Security	-	-	-	-	-	-
Municipality worker	-	-		-	-	-
Police	-	-	-	-	-	-
Soldier	-	-	-	-	-	-

Table 5.14: Users' nationality and gender in Palace Square at weekend morning 2

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	18	3	28	4	-	-
Arab	2	2	6	3	1	-
Asian	8	6	47	28	2	1
European	6	3	23	25	3	3
Cleaner worker	-	-	2	-	-	-
Security	-	-	-	-	-	-
Municipality worker	-	-		-	-	-
Police	-	-	-	-	-	-
Soldier	-	-	-	-	-	-

Table 5.15: Users' nationality and gender in Palace Square at weekend afternoon 1

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	3	5	64	6	1	-
Arab	3	2	8	5	-	-
Asian	7	4	19	11	-	-
European	2	4	47	45	2	3
Cleaner worker	-		7	-	-	-
Security	-		1	-	-	-
Municipality worker	-			-	-	-
Police	-		-	-	-	-
Soldier	-		2	-	-	-

Table 5.16: Users' nationality and gender in Palace Square at weekend afternoon 2

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	1	5	13	3		-
Arab	2	1	8	7		
Asian	15	11	68	30	1	3
European	3	3	22	25	2	2
Cleaner worker	-	-	1	-	-	-
Security	-	-	-	-	-	-
Municipality worker	-	-		-	-	-
Police	-	-			-	-
Soldier	-	-		-		

Table 5.17: Users' nationality and gender in Palace Square at weekend evening 1

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	17	7	30	12	1	-
Arab	-	1	3	6	1	-
Asian	14	18	66	40	2	-
European	1	-	1	-	-	
Cleaner worker	-	-		-	-	-
Security	-	-	-	-	-	-
Municipality worker	-	-		-	-	-
Police	-	-	-	-	-	-
Soldier	-	-	-	-	-	-

Table 5.18: Users' nationality and gender in Palace Square at weekend evening 2

Figure 5.20: Users' activities in Palace Square in the morning, afternoon and evening during weekdays.

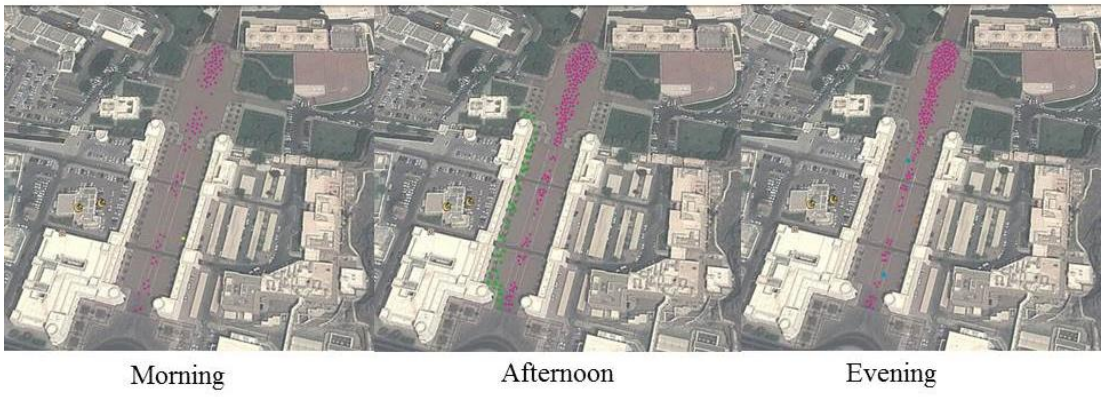


Figure 5.21: Users' activities in Palace Square in the morning, afternoon and evening during weekends.

Activities:

		Taking photos. ●	Playing X	Sitting ■	Cycling ●	Doing Sport O	Approaching the mosque ●
Weekday	Morning	205	-	1	1	-	-
	Morning	60	-		1	-	-
	Afternoon	66	-	-	-	-	107
	Afternoon	60	-	-	-	-	-
	Evening	42	3	5	1	-	-
	Evening	86	-	-	-	3	-
Weekend	Morning	81	-	-	-	-	-
	Morning	88	-	1	-	-	-
	Afternoon	183	-	3	-	-	49
	Afternoon	180	-	4	3	-	-
	Evening	158	-	3	1	-	-
	Evening	199	-	1	2	1	-
Total		1,408	3	18	9	4	156

Table 5.19: Recorded number of each activity in the entire observation period in Palace Square

Figure 5.22: Users' interaction with Palace Square.

5.4.2. Municipality Square

Observation was done from different strategic angles for clear visual coverage of the square. Benches with good overlooking of the square were available but there was lack of shade which could protect from the direct sun especially in the middle of the day. The weather was sunny most of the days. A few days were cloudy but dry and very bright. A cool pleasant breeze was blowing sometimes. Evenings were much more comfortable with cooler weather. Temperature at observations periods ranged between 18ºC and 25ºC. There were traffic noises from the opposite street. Bird tweeting sound was heard when there was no noise distraction. In the evenings loud Western music was played in the square by teenagers. The air was polluted to some extent and there was a smell of Asian food cooking from the attached restaurant in afternoons and evenings.

Municipality square is located in Muttrah State, where the expatriates population was recorded as being more than double that of Omanis in the 2010 census, as shown in Table 4.4, Section 4.3.1. However, Omani male users were the majority on weekday mornings, particularly on the days that the Ministry of Commerce and Industry was open to the public to complete their paper work. On such days parking spaces were fully occupied. Hardly any Omani users entered the square (see Tables 5.20 to 5.31). The majority of them were only using coffee shops at the corners, especially the one closer to the Ministry's entrance. Using cafes was the main activity. Other mornings (i.e. at weekends) Asian users dominated. During mornings and afternoons users passed through the square with barely any activities (see Figures 5.23 and 5.24).

The square is lively in the evenings, which are dominated by Asian expatriates, thus reflecting the demography of the state. Every Ramadhan (Muslims fasting month) the Bangladeshi society organised a gathering for breaking fast as shown in Figure 4.22 in Section 4.7.2. From observation data, Asian adults were visiting alone or with their families. Children were either playing around or riding bicycles or scooters. They were mainly sitting on the benches or on the grass (see Table 5.32 and Figure 5.25). Most of them stayed for more than 20 minutes. Young Omani users were mostly boys who were street dancing to loud western music and a few who were

roller skating and skateboarding on the steps, however these were observed only in the evenings and they were low in numbers. Nevertheless, such behaviours attracted other users' attention with admiration. Young Asian expatriates were observed to enjoy playing football. The 2010 census indicates that Muttrah State has slightly a slightly higher Omani male than female population, and the number of expatriate males was recorded as nearly double that of female expatriates (see Table 4.5, Section 4.3.1). This square is dominated by male users. Asian women and girls were observed in higher numbers in the square than Omani women and girls, this probably being because the expatriate residents in the community around the square are double in number compared to the Omani. Omani female users were recorded as very low in numbers. However, girls from both groups generally were never seen alone in the square; they were always accompanied by a family member.

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	-	-	80	1	1	-
Arab	-	-	3	-	-	-
Asian	1	-	44	5	-	-
European	-	-	2	2	-	-
Cleaner worker	-	-	-	-	-	-
Police	-	-	1	-	-	-
Municipality worker	-	-	1	-	-	-

Table 5.20: Users' nationality and gender in Municipality Square on weekday morning 1

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	-	-	38	2	-	-
Arab	-	-	-	-	-	1
Asian	-	-	34	1	1	1
European	-	-	-	-	-	-
Cleaner worker	-	-		-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-	1	-	-	-

Table 5.21: Users' nationality and gender in Municipality Square on weekday morning 2

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	-	-	52	1	-	-
Arab	1	1	4	-	-	-
Asian	2	1	18	2	-	-
European	-	-	-		-	-
Cleaner worker	-	-	-	-	-	-
Security	-	-	-	-	-	-
Municipality worker	-	-	=	-	-	-

Table 5.22: Users' nationality and gender in Municipality Square on weekday afternoon 1

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	-	-	13	2	-	-
Arab	1	-	-	-	-	
Asian	-	-	13	3		
European	-	-	-	-	-	-
Cleaner worker	-	-		-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-		-	-	-

Table 5.23: Users' nationality and gender in Municipality Square on weekday afternoon 2

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	8	-	9	1		-
Arab	-	1		2	-	-
Asian	11	1	65	5	1	-
European	-	-			-	-
Cleaner worker	-	-	-	-	-	-
Police	-	-		-	-	-
Municipality worker	-	-		-	-	-

Table 5.24: Users' nationality and gender in Municipality Square on weekday evening 1

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	6	1	4	2	-	-
Arab	2	-	-	1	-	
Asian	15	6	61	7	-	2
European	-	-	-	-	-	-
Cleaner worker	-	-		-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-		-	-	-

Table 5.25: Users' nationality and gender in Municipality Square on weekday evening 2

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	-	-	10	-	-	-
Arab	-	-	-	-	-	-
Asian	-	-	58	-	1	1
European	-	-	-	-	-	-
Cleaner worker	-	-	1	-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-	1	-	-	-

Table 5.26: Users' nationality and gender in Municipality Square on weekend morning 1

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	-	-	1	-	-	-
Arab	-	-	-	-	-	-
Asian	-	-	7	-	-	-
European	-	-	-	-	-	-
Cleaner worker	-	-	1	-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-		-	-	-

Table 5.27: Users' nationality and gender in Municipality Square on weekend morning 2

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	-	-	4	1	-	-
Arab	1	2	1	1	-	-
Asian	1	-	33	-	-	-
European	-	-	-	-	-	-
Cleaner worker	-	-		-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-		-	-	-

Table 5.28: Users' nationality and gender in Municipality Square on weekend afternoon 1

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	-	-	4	-	-	-
Arab	-	-	-	-	-	-
Asian	2	-	35	2	-	-
European	-	-	-	-	-	-
Cleaner worker	-	-		-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-		-	-	-

Table 5.29: Users' nationality and gender in Municipality Square on weekend afternoon 2

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	10	-	2	1	-	-
Arab	2	1	4	2	-	-
Asian	30	2	75	10	-	-
European	-	-	-	-	-	-
Cleaner worker	-	-		-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-		-	-	-

Table 5.30: Users' nationality and gender in Municipality Square on weekend evening 1

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	12	-	1	4	-	-
Arab	-	-	-	-	-	-
Asian	18	2	38	1	-	-
European	-	-	-	-	-	-
Cleaner worker	-	-		-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-		-	-	-

Table 5.31: Users' nationality and gender in Municipality Square on weekend evening 2

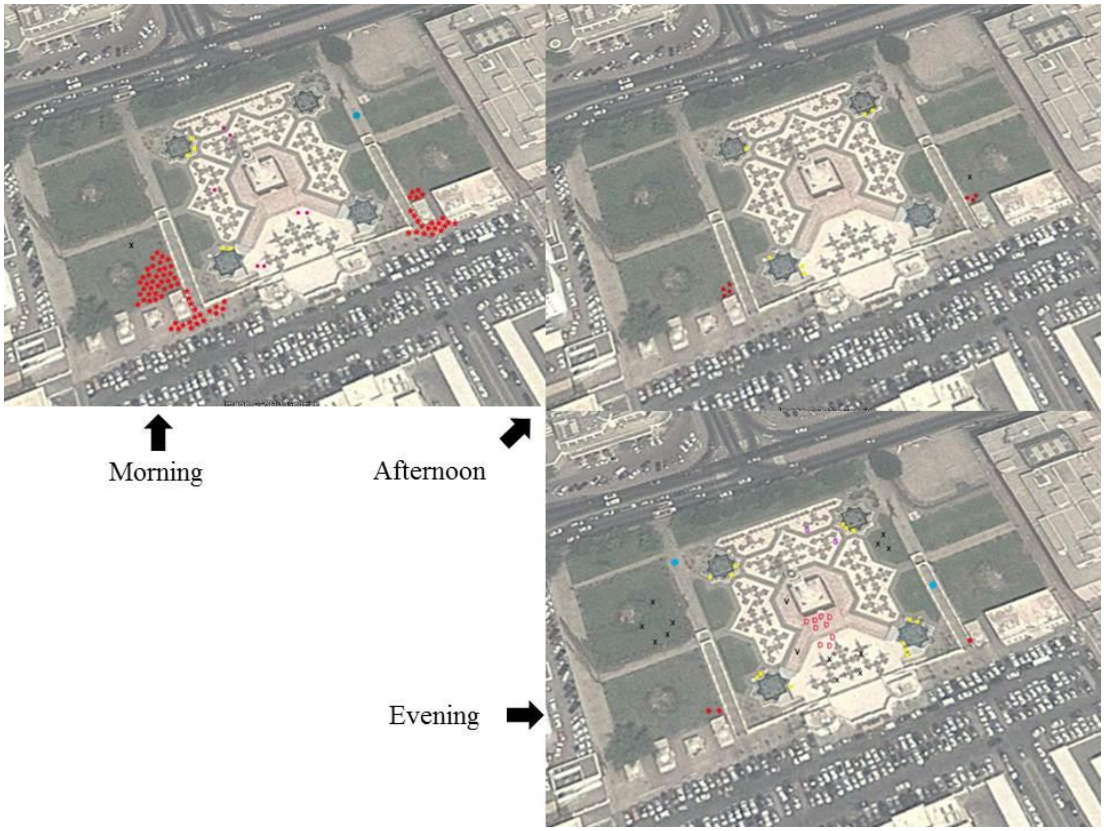


Figure 5.23: Users' activities in Municipality Square in the morning, afternoon and evening during weekdays.

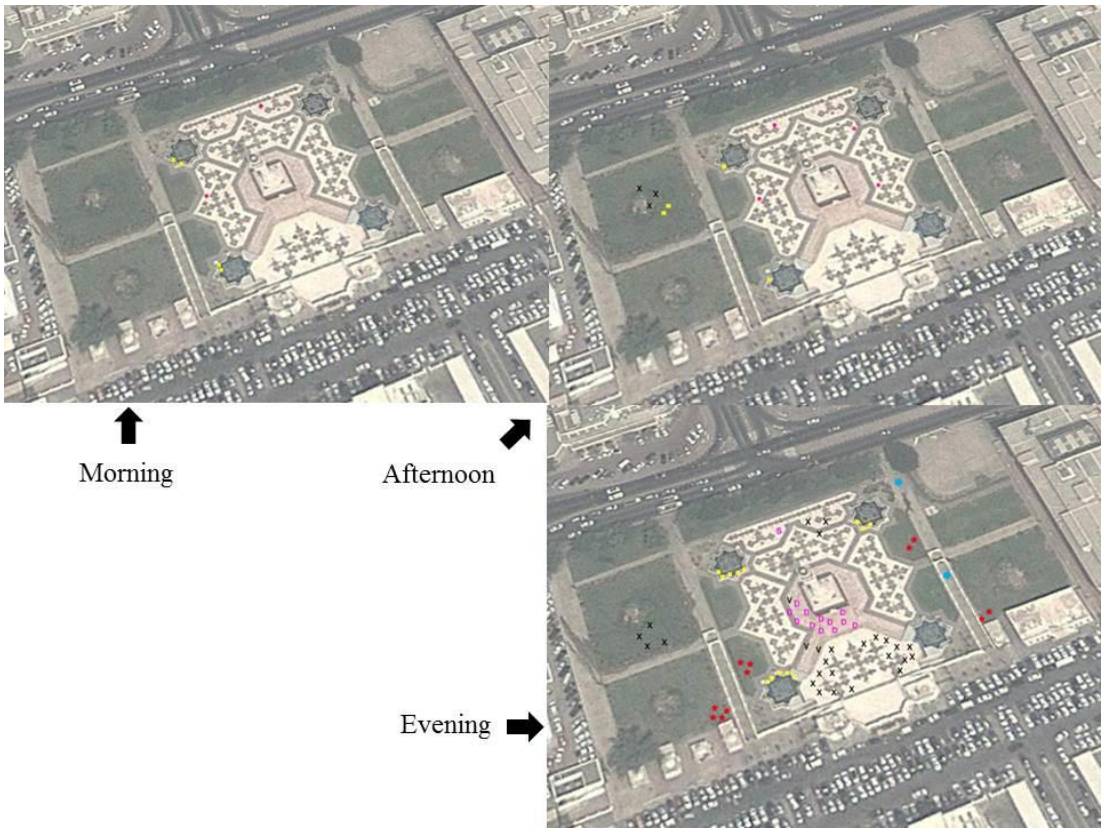


Figure 5.24: Users' activities in Municipality Square in the morning, afternoon and evening during weekends.

Activities:

		Taken photos. ●	Playing x	Sitting ■	Cycling ●	Scooting S	Doing Sport O	Riding motorbike 8	Dancing D	Roller skating V	Eating/ drinking at coffee shop *
Weekday	Morning	7	1	5	1	-	-	-	-	-	75
	Morning	-	-	1	1	-	1	-	-	-	20
	Afternoon	-	-	-	-	-	-	-	-	-	43
	Afternoon	-	1	6	-	-	-	-	-	-	7
	Evening	-	10	14	2	2	-	-	9	2	3
	Evening	-	20	29	-	-	-	3	11	3	6
Weekend	Morning	2	-	4	-	-	-	-	-	-	-
	Morning	-	-	-	-	-	-	-	-	-	-
	Afternoon	4	3	4	-	-	-	-	-	-	-
	Afternoon	-	-	-	-	-	-		-	-	-
	Evening	13	20	24	4	-	-	-	8	4	7
	Evening	-	24	13	2	1	-	-	12	3	11
	Total	26	79	100	10	3	1	3	40	12	172

Table 5.32: Recorded number of each activity in the entire observation period in Municipality Square

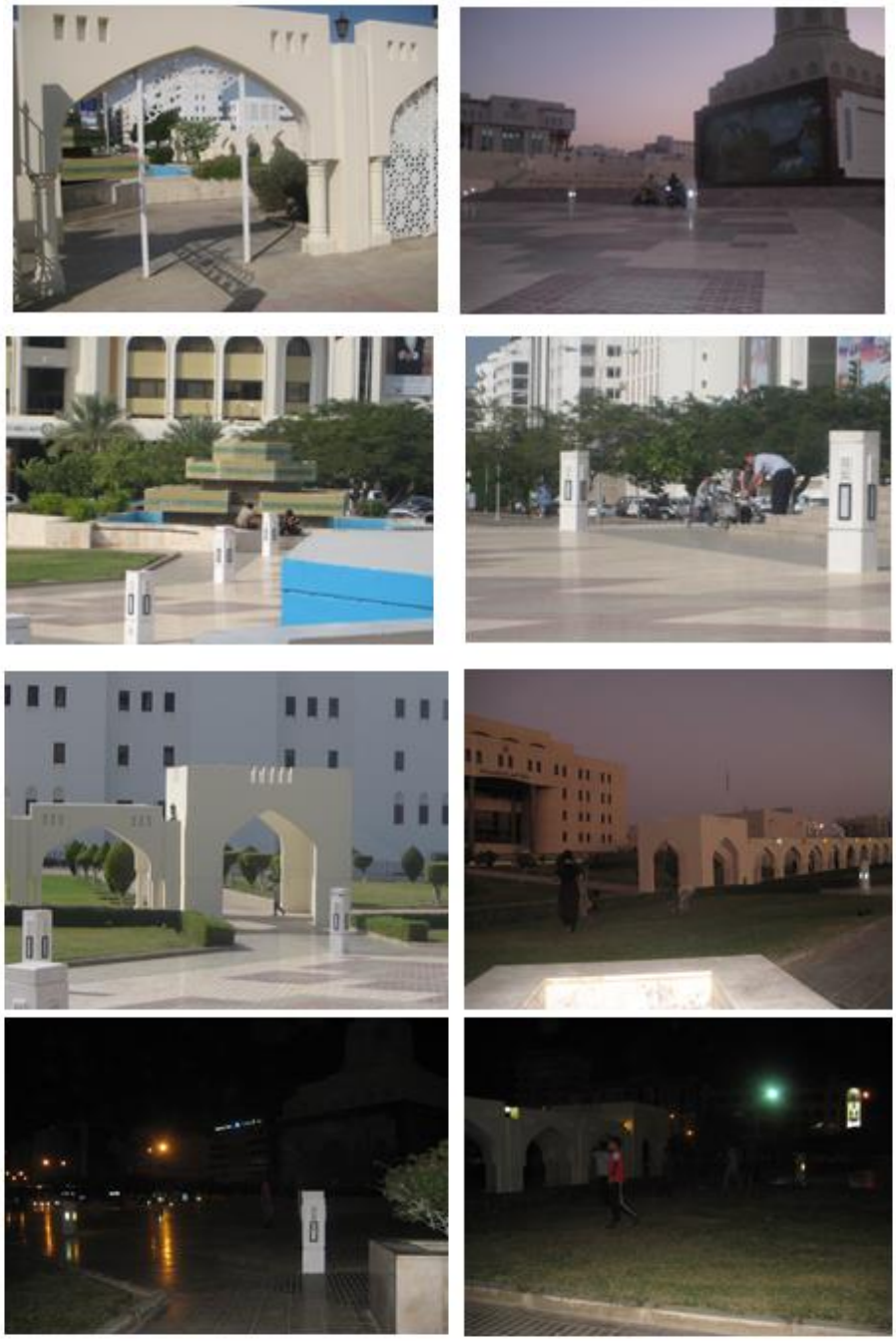


Figure 5.25: Users' interaction with Municipality Square.

5.4.3. Ministries Plaza

Observation was done following the same strategy as for the other spaces by selecting a different observation point on every visit. Unlike in Municipality Square, there were gazebos and trees that provided shaded areas which were convenient during mornings and afternoon. The weather was mostly sunny with a cool breeze. There were a few clouds in the sky on some days. Temperature at observation periods ranged between 18ºC and 28ºC. Traffic noise from the highway was loud in the plaza. There were sounds of birds tweeting at spots next to trees. There was noise from lawn mowing machines on one occasion. Despite the proximity of the highway, the air felt fresh due to the vegetation (see Figure 5.28).

This plaza is located in Bawsher State, which has an Omani population that slightly more than half the number of expatriates, as shown in Table 4.4 in Section 4.3.1. However, the plaza is surrounded by ministries, where the majority of office workers are Omani. Nevertheless, Asian expatriate users are the majority on weekday mornings and afternoons. This is probably because, as mentioned in Chapter 4, there is no lunch break in the government working system. Most of morning and afternoon users cross the plaza from or to the highway's public transportation stop location. Only a few users were siting (see Tables 5.33 to 5.44). The plaza is more lively during the evening than in the morning and afternoon. Despite the demographic statistics showing that Omanis were just more than half the expatriates in this state of Muscat, unexpectedly, the plaza is dominated by Omani users on weekday evenings, most of them walking and jogging. The 2010 census statistics indicate that in Bawsher state the number of Omani males slightly exceeds that of Omani females, and among expatriates males are more than double the number of females. Observation shows that Omani women were far more prevalent users than those from other ethnic groups, and they were mainly walking for fitness (see Table 5.37 and 5.38). Whilst there is still male domination in the use of the space, the balance between male and female Omanis in the evenings was closer to the demographic balance than in the other spaces. However, there was a more mixed user group at the weekend. Sport was the main activity on the weekday evenings and weekend

mornings. There are other activities along with sport on weekday evenings such as playing, sitting and eating (see Figures 5.26 and 5.27). Weekend evenings were busier with more diversity in activities. Sitting was the dominant activity followed by playing, doing sport, taking photos, cycling, eating, scooting and studying (Table 5.45 and Figure 5.28). There was no presence of young people on the weekday mornings and afternoons. Omani children were more than expatriates on the weekday evenings, and the opposite was the case on the weekend evenings. However, all children were visiting the plaza with a member or more of their families. Some weekend groups of Asian children were playing sports with adult company. Table 4.7 in Section 4.3.1 shows slightly more boys than girls below the age of 15 in the total population (Omani and expatriates). In the observation the ratio was also close to that most of the times.

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	-	-	1	-	2	-
Arab	-	-	-	-	-	-
Asian	-	-	4	-	-	-
European	-	-	-	-	-	-
Cleaner worker	-	-	-	-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-	3	-	-	-

Table 5.33: Users' nationality and gender in Ministries Plaza on weekday morning 1

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	-	-	13	2		-
Arab	-	-			-	-
Asian	-	-	32	2	-	-
African	-	-				
European	-	-			-	-
Cleaner worker	-	-	1	-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-	1	-	-	-

Table 5.34: Users' nationality and gender in Ministries Plaza on weekday morning 2

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	-	-	13	4	-	-
Arab	-	-	-	-	-	-
Asian	-	-	4	-	-	-
European	-	-	-	-	-	-
Cleaner worker	-	-		-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-		-	-	-

Table 5.35: Users' nationality and gender in Ministries Plaza on weekday afternoon 1

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	-	-	5			-
Arab	-	-			-	
Asian	-	-	1		-	-
African	-	-				
European	-	-			-	-
Cleaner worker	-	-		-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-		-	-	-

Table 5.36: Users' nationality and gender in Ministries Plaza on weekday afternoon 2

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	2	2	40	19	-	-
Arab	-	-	-	-	-	-
Asian	1	-	16	4	-	-
European	-	-	-	1	-	-
Cleaner worker	-	-	-	-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-	-	-	-	-

Table 5.37: Users' nationality and gender in Ministries Plaza on weekday evening 1

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	6	7	79	58	1	-
Arab	1	-	2	4	-	1
Asian	1	1	16	2	-	-
African	-	-				
European	-	-	1	1	-	-
Cleaner worker	-			-	-	-
Police	-		-	-	-	-
Municipality worker	-			-	-	-

Table 5.38:Users' nationality and gender in Ministries Plaza on weekday evening 2

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	-	-	-	-	-	-
Arab	-	-	-	-	-	-
Asian	1	-	20	1	-	-
European	-	-	-	-	-	-
Cleaner worker	-	-	-	-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-	-	-	-	-

Table 5.39: Users' nationality and gender in Ministries Plaza on weekend morning 1

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	-	-	10	-	-	-
Arab	-	-	-	-	-	-
Asian	-	-	58	-	1	1
European	-	-	-	-	-	-
Cleaner worker	-	-	1	-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-	1	-	-	-

Table 5.40: Users' nationality and gender in Ministries Plaza on weekend morning 2

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	1	1	1	1	-	-
Arab	-	-	-	-	-	-
Asian	-	-	8	2		
European	-	-	2	2	-	-
Cleaner worker	-	-		-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-		-	-	-

Table 5.41: Users' nationality and gender in Ministries Plaza on weekend afternoon 1

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	-	-	1			-
Arab	-	-			-	
Asian	-	-	3		-	-
African	-	-				
European	-	-			-	-
Cleaner worker	-	-		-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-		-	-	-

Table 5.42: Users' nationality and gender in Ministries Plaza on weekend afternoon 2

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	11	6	17	15	1	-
Arab	3	3	7	5	-	-
Asian	17	8	19	13	-	-
European	-				-	-
Cleaner worker	-			-	-	-
Police	-		-	-	-	-
Municipality worker	-			-	-	-

Table 5.43: Users' nationality and gender in Ministries Plaza on weekend evening 1

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	3	9	2	2		-
Arab					-	-
Asian	11	2	15	9	-	-
African	1	1	1	1		
European	-				-	-
Cleaner worker	-			-	-	-
Police	-		-	-	-	-
Municipality worker	-			-	-	-

Table 5.44: Users' nationality and gender in Ministries Plaza on weekend evening 2

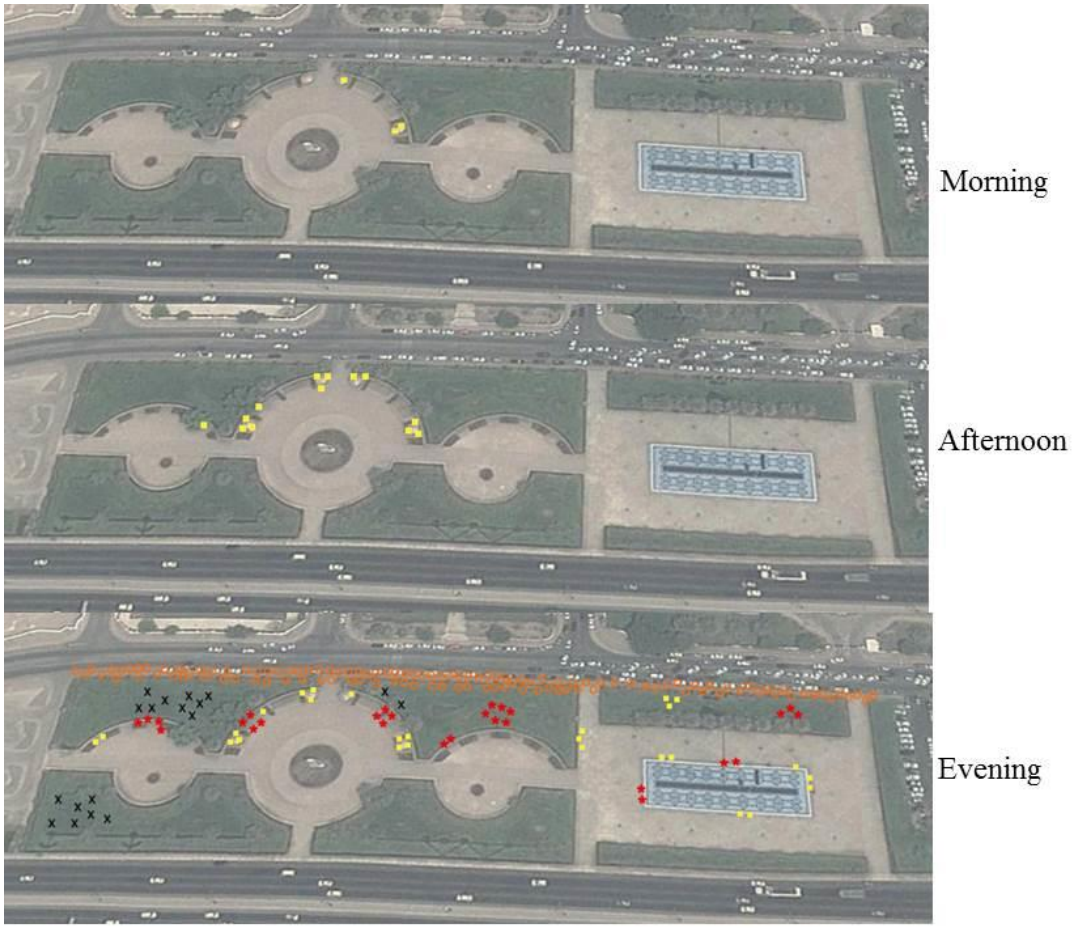


Figure 5.26: Users' activities in Ministries Plaza in the morning, afternoon and evening during weekdays.

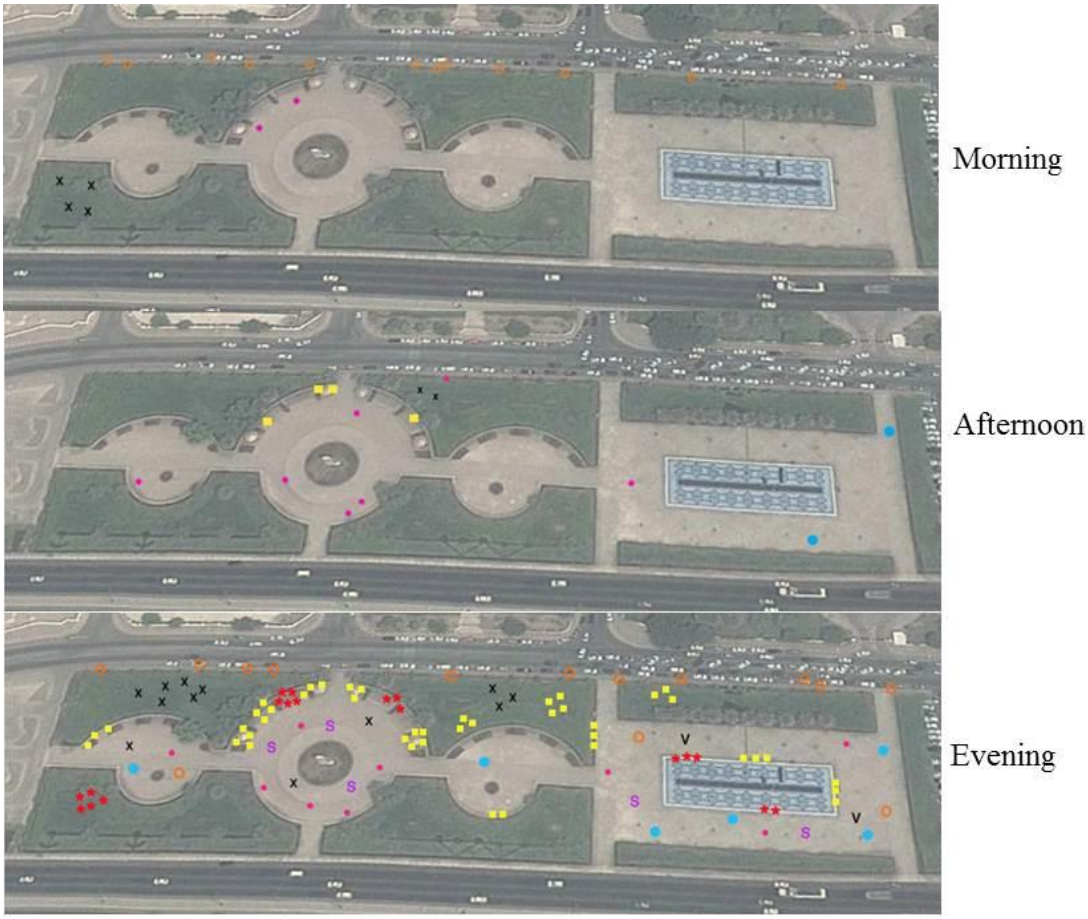


Figure 5.27: Users' activities in Ministries Plaza in the morning, afternoon and evening during weekends.

Activities:

		Taken photos. ●	Playing x	Sitting ■	Cycling ●	Scooting S	Doing Sport O	Roller skating V	Eating *	Studying ■
Weekday	Morning	-	-	3	-	-	-	-	-	-
	Morning	-	-	1	1	-	-	-	-	-
	Afternoon	-	-	13	-	-	-	-	-	-
	Afternoon	-	-	1	-	-	-	-	-	-
	Evening	-	5	-	-	-	58	-	-	-
	Evening	-	18	27	-	-	113	-	27	-
Weekend	Morning	-	-	2	-	-	16	-	-	-
	Morning	2	4	-	-	-	12	-	-	-
	Afternoon	7	2	4	2	-	-	-	-	-
	Afternoon	-	-	1	-	-	2	-	-	-
	Evening	9	12	43	6	5	14	2	18	-
	Evening	3	13	23	3	-	3	-	-	3
	Total	21	54	118	12	5	218	2	45	3

Table 5.45: Recorded number of each activity in the entire observation period in Ministries Plaza.

Figure 5.28: Users' interaction with Ministries Plaza.

5.4.4. Muttrah Plaza

Observations were made as in the previous cases, from different areas. They were conducted either from one of the gazebos during the day or from one of the benches in the evenings. The weather was mostly sunny and dry in the morning with a pleasant breeze in the shade. Temperatures ranged between 20ºC to 25ºC. There were sounds from waves and from the fountain. There was traffic noise from the street.

As the observation was conducted during the tourist peak season and the plaza is located within a tourist historical attraction area, European visitors were the majority on weekday mornings (see Table 5.47). They were dropped from coaches at the far end of the corniche and passed the souq followed by the plaza on the way from there. Most of them just passed the plaza and only some sat admiring the place and taking photos (see Table 5.58). Since it is a coastal location a few users enjoyed feeding seagulls. This plaza located in Muttrah State, where the Omani population is less than half the expatriate as shown in the 2010 census statistics in Table 4.4 in Section 4.3.1. Despite that, observation data indicates that Omani male users were the dominant group in the plaza on the weekday evenings, whilst Omani women were fewer than expatriates. On weekday afternoons, there were mixed users' groups. Unlike in the previous cases, the plaza was busy with several activities during all afternoons. Users enjoyed sitting, taking photos, playing and eating (see Figure 5.29 and 5.30). As in the other cases, it was busier in the evenings. Omani users were the majority during weekday evenings, whereas the Asian users dominated the weekend evenings (see Tables 5.46 to 5.57). This, as mentioned in Section 4.3.1., reflects that most of the Omanis spend their weekends outside Muscat. Furthermore, the majority of expatriates are low wage Asian labour.

Asian men were far more numerous than any other group of users on weekend evenings. They maybe represent the group of labour expatriates that reside in Oman without their families. Cycling and sport were added to the evening activities in addition to those undertaken in the afternoon (see Table 5.58 and Figure 5.31). The population of boys slightly higher than that of girls among both Omanis and

expatriates, as shown earlier in Table 4.7 in Section 4.3.1. Fieldwork data shows the number of Asian children using the space was higher than that of Omanis but there was no clear predominance in numbers of boys or girls in each group. Children were mostly visiting with an adult. A few teenage boys were recorded as hanging around in the plaza with friends on weekend evenings.

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	1	2	7	4		-
Arab	-	-			-	
Asian	4	2	6		-	-
African	-	-				
European	-	-	26	25	-	-
Cleaner worker	-	-		-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-		-	-	-

Table 5.46: Users' nationality and gender in Muttrah Plaza on weekday morning 1

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	-	2	5	2		-
Arab	-	-			-	
Asian	3	1	9	3	-	-
African	-	-				
European	-	-	22	22	-	-
Cleaner worker	-	-		-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-		-	-	-

Table 5.47: Users' nationality and gender in Muttrah Plaza on weekday morning 2

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	1	-	11	4		-
Arab	-	-	2	1	-	
Asian	2	2	13	3	-	-
African	-	-				
European	-	-			-	-
Cleaner worker	-	-		-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-		-	-	-

Table 5.48: Users' nationality and gender in Muttrah Plaza on weekday afternoon 1

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	1	1	11	7		-
Arab	-	-		1	-	
Asian	7	1	18	5	-	-
African	-	-				
European	5	3	13	13	-	-
Cleaner worker	-	-		-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-		-	-	-

Table 5.49: Users' nationality and gender in Muttrah Plaza on weekday afternoon 2

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	2	-	105	11		-
Arab	2	1	4	5	-	
Asian	12	11	73	29	-	-
African	-	-				
European	2	-	3	2	-	-
Cleaner worker	-	-		-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-		-	-	-

Table 5.50: Users' nationality and gender in Muttrah Plaza on weekday evening 1

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	8	7	113	27	1	-
Arab	-	-	2	1	-	
Asian	10	5	99	23	1	
African	-	-		1		
European	3	-	6	6		
Cleaner worker	-	-	2	-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-		-	-	-

Table 5.51: Users' nationality and gender in Muttrah Plaza on weekday evening 2

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	3	9	20	19		-
Arab	-	1	1		-	
Asian	2	1	26	3	-	-
African	-	-				
European		-	7	9	1	2
Cleaner worker	-	-		-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-		-	-	-

Table 5.52: Users' nationality and gender in Muttrah Plaza on weekend morning 1

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	-	-	5	1		-
Arab	1	-	1		-	
Asian	-	-	26	7		1
African	-	-				
European	-	-	1	2		
Cleaner worker	-	-		-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-		-	-	-

Table 5.53: Users' nationality and gender in Muttrah Plaza on weekend morning 2

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	5	3	8	5		-
Arab	1	-	2		-	5
Asian	1	1	68	16		
African	-	-				
European	-	-	8	7		
Cleaner worker	-	-	1	-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-		-	-	-

Table 5.54: Users' nationality and gender in Muttrah Plaza on weekend afternoon 1

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	3	-	7	4		-
Arab	2	-	3	2	-	-
Asian	1	3	53	13		
African	-	-				
European	-	-	11	11	1	1
Cleaner worker	-	-	1	-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-		-	-	-

Table 5.55: Users' nationality and gender in Muttrah Plaza on weekend afternoon 2

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	5	9	47	18		-
Arab	3	-	7	14	-	
Asian	18	11	110	29	2	2
African	-	-				
European	-	-	4	4	1	1
Cleaner worker	-	-	1	-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-		-	-	-

Table 5.56: Users' nationality and gender in Muttrah Plaza on weekend evening 1

	Young people		Adult		Elderly	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Omani	8	6	59	28	2	-
Arab	5	1	4	5	-	5
Asian	9	11	126	34		
African	-	-				
European	-	-	1	2		
Cleaner worker	-	-	2	-	-	-
Police	-	-	-	-	-	-
Municipality worker	-	-		-	-	-

Table 5.57: Users' nationality and gender in Muttrah Plaza on weekend evening 2

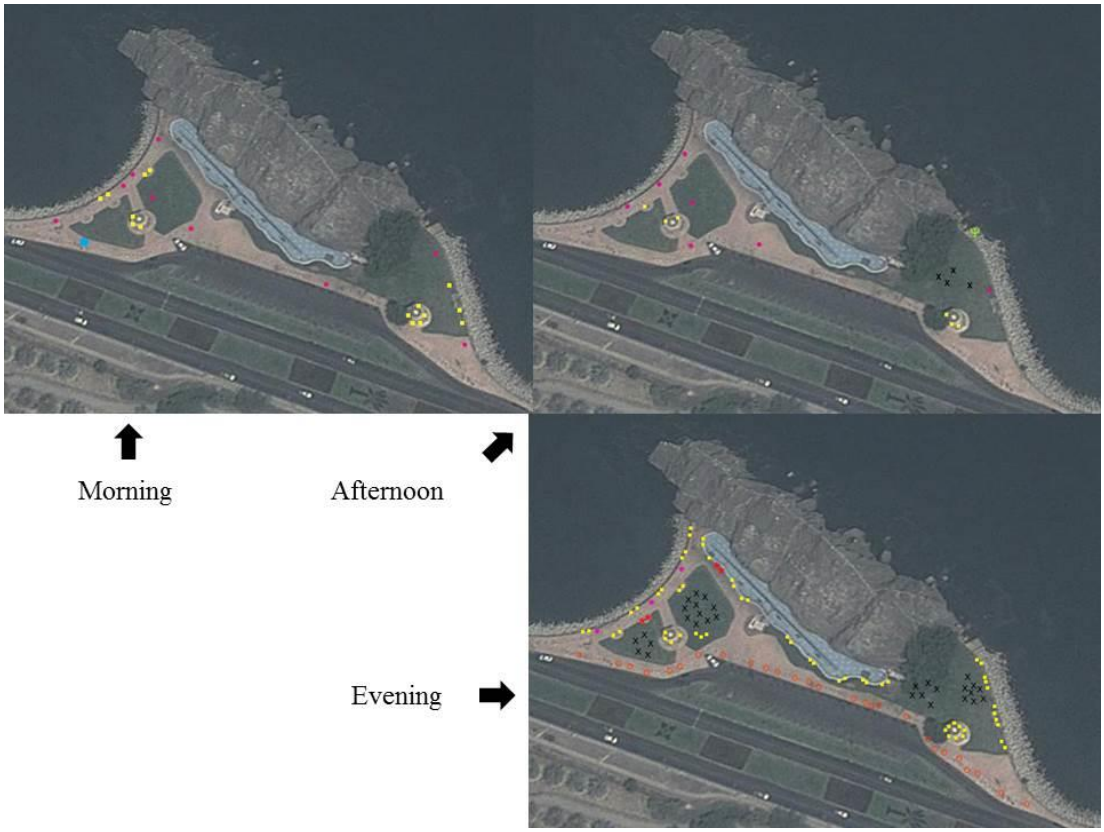


Figure 5.29: Users' activities in Muttrah Plaza in the morning, afternoon and evening during weekdays.

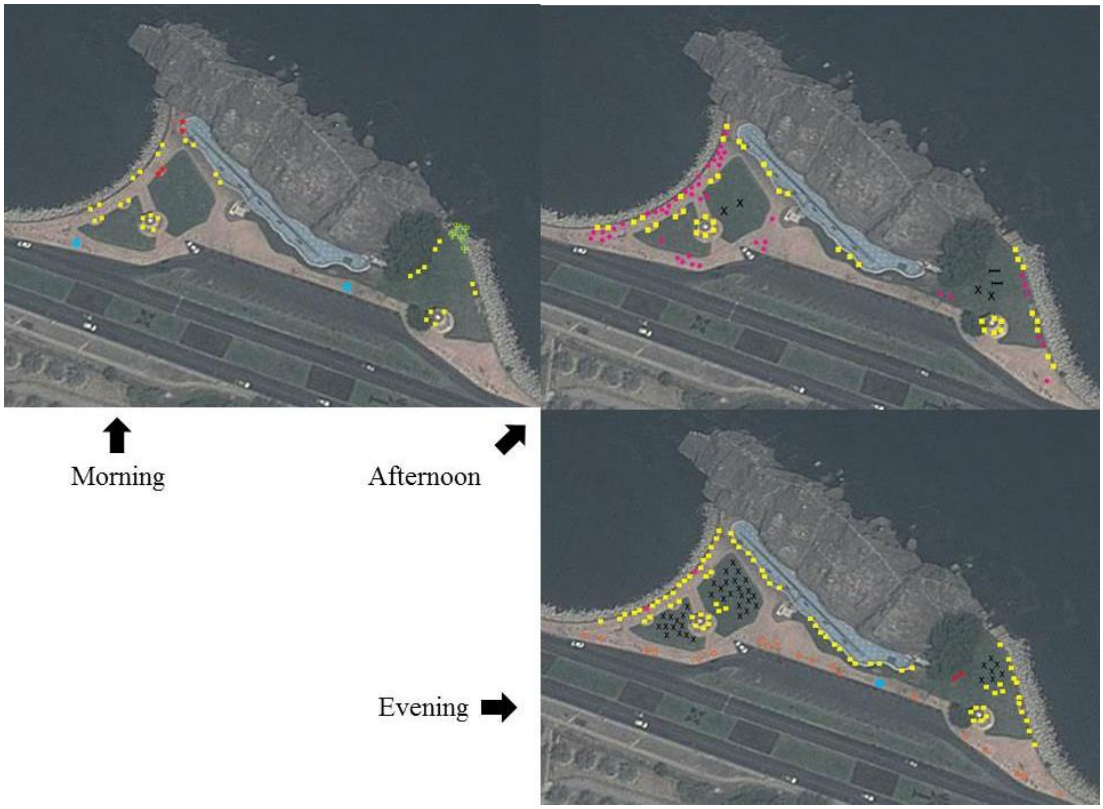


Figure 5.30: Users' activities in Muttrah Plaza in the morning, afternoon and evening during weekends.

Activities:

		Taken photos. •	Playing x	Sitting ■	Cycling ●	Doing Sport O	Eating *	Laying down I	Feeding birds Ψ
Weekday	Morning	9	-	15	1	-	-		
	Morning	7	-	11	-		-		
	Afternoon	7	4	6	-	-	-		1
	Afternoon	30	5	19	1	-	2		
	Evening	2	27	76	1		2		
	Evening	3	30	57	-	27	4		
Weekend	Morning	11	7	30	2		4		5
	Morning	7	2	12	-	8	-		5
	Afternoon	46	4	42		-	-	2	
	Afternoon	31	3	31	-		-		
	Evening	6	3	46			3		
	Evening	2	40	76	1	19	2		
	Total	161	125	421	6	54	17	2	11

Table 5.58: Recorded number of each activity in the entire observation period in Muttrah Plaza

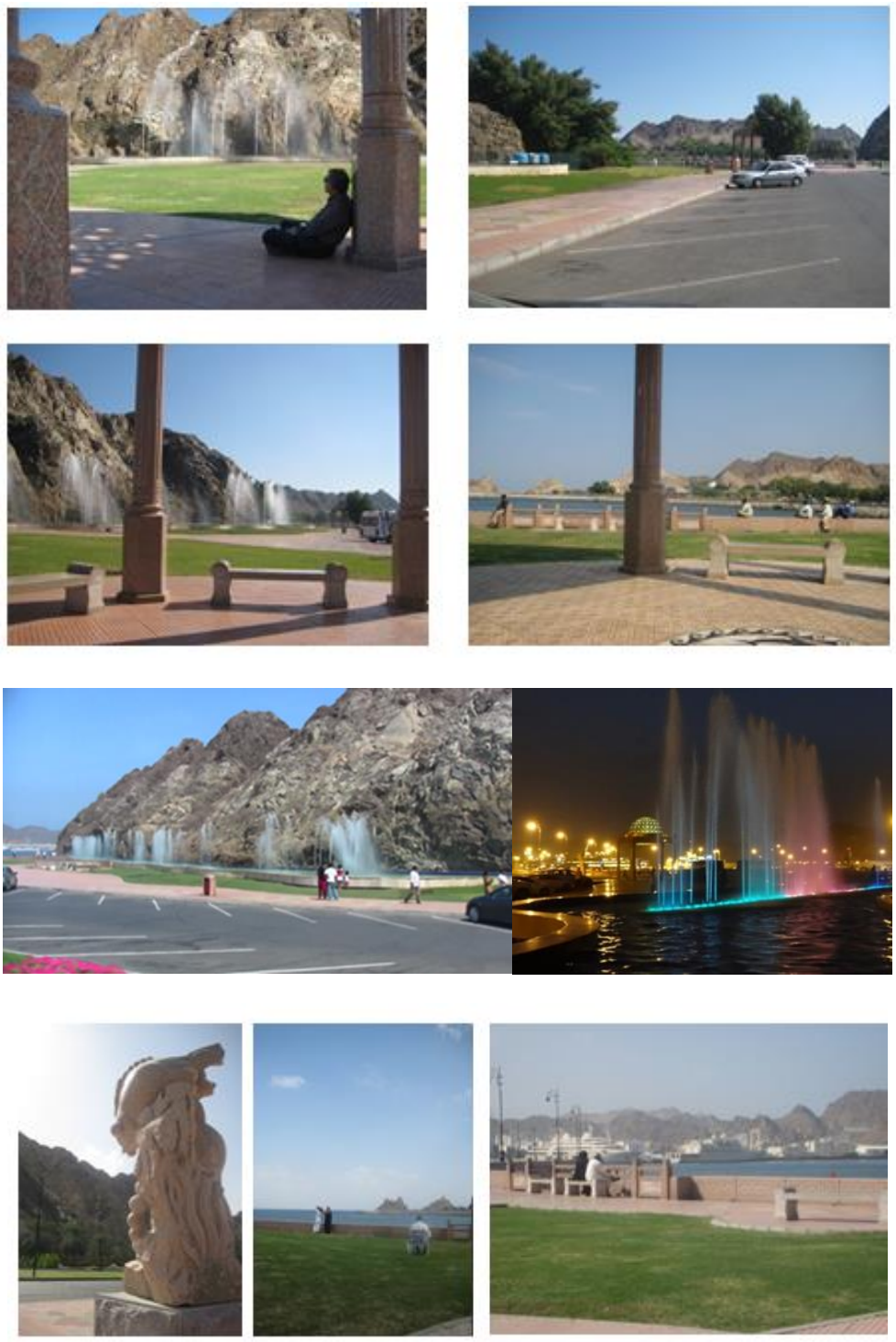


Figure 5.31: Users' interaction with Muttrah Plaza.

5.5. Active engagement

In order to evaluate active engagement in the spaces, users' behaviour was classified according to presence and duration. Squares that combine walking with staying experiences are more active than transit squares. It is all about quality invitation for people to stay longer. Users actions were categorised according to the quality of their engagement. Despite it having the highest visiting record, Palace Square scored remarkably low in terms of quality time engagement in the space, which is explained in Section 2.3.1 (see Table 5.59). The majority of the users stayed for a short time. Taking photos was extraordinarily dominant as it is a tourist location. This indicated its potential to generate quality engagement by enhancing the built environment with facilities which invite long staying activities. Municipality Square showed better quality time by users. Activities such as adults sitting, eating and taking photos; teenagers doing sport, roller skating and dancing; and children playing were happening. Ministries Plaza also had an unbalanced engagement time. The majority of people were passing the edge of the plaza on their jogging route or playing team sports at the parking space without really engaging with the space. However, there were users who stayed longer for sitting, eating, taking photos and playing. Muttrah Plaza combined walking and staying activities (sitting, playing and taking photos) at different times of morning, afternoon and evening. However, short staying activities were far fewer than the long engagement. All case studies lacked a sensible provision of leisure facilities in order to encourage users to experience longer occupation.

Location	Time scale	Pass through	Active all the time	Pattern of active and passive	Passive all time	Dominant engagement type
Palace Square	Short stay	157	13	1,405	14	There is lack of long engagement with the space.
	Long stay	-	3	3	4	
Municipality Square	Short stay	478	8	4	18	There is low presence of long engagement.
	Long stay	-	99	197	80	
Ministries Plaza	Short stay	414	2	2	23	There is low presence of long engagement.
	Long stay	-	74	19	140	
Muttrah Plaza	Short stay	1,102	25	159	338	There is lack of long engagement with the space.
	Long stay	-	100	29	85	

Table 5.59: Number of activities in the entire observation in all case studies with regard to visit duration.

5.6. Conclusion

This chapter focused on quality of urban design features and the impact of the built environment on the way users utilize the spaces. It first drew such understanding about the spatial environment from the application of a selection of different evaluation techniques of mapping, urban design audit, an urban design inventory and visual assessment. Using those different tools in assessing each case study allowed extra critical assessment. Then it analysed the users' interaction within case study spaces by using behaviour mapping and observation to explore users' activities in the space and their staying periods.

The Palace Square is within a mixed urban structure with strong historical buildings, which make it a unique attraction for residents and tourists. As it is on a royal site it was designed with highly specified urban features. It was ranked high in all evaluation criteria except human scale. This is not surprising since its design purpose is to serve as a set for the ceremonial reception of heads of state. It is also lacking in the provision of user facilities which might entice users with activities in order to hold them in the space for longer. Users mostly stayed for a short time and hardly sat or enjoyed activity in the space. Taking photos was the main activity in the space, which also indicates that they are not frequent users. Municipality Square had well

designed features in a busy location. However, users' behaviour is affected by low maintenance, lack of user facilities and low consideration of climate factors in its design. Users' engagement with the square was unbalanced as most of the users were passing, except for activities with longer duration which appeared during the evenings.

Ministries Plaza was recorded as being the most isolated case, in an urban fabric with monofunctional areas, and with high transparency and good urban design which attracted users to practice fitness activities. However, there is no active engagement with the plaza as users also do not stay long. Muttrah Plaza had in general the lowest urban design score. However, users' behaviour shows the continuity of visitors at different times, as a result of the complexity in urban uses of the context and the beautiful views of the harbour.

Overall use of case study spaces by Omanis is remarkably low, particularly on weekday evenings and weekends. There is a bigger gap between female and male visitors among Omani and expatriate users than that in the census, with female rates being far lower and not in balance with male visitors.

If we return to the literature review, it was seen that a strong urban layout results from the underlying planning process. A key conclusion from existing research regarding the provision of liveable public open space was that the urban fabric has to evolve around public spaces, rather than these being planned and designed at the very end after the buildings have been provided, which appears to have been the process in the case study spaces this research is focusing on. This has to be considered in planning and design. Good quality urban design does not only mean a clean and well maintained physical built environment; it has to be about spaces which are designed to host different public activities. In order for a public open space to be liveable it has to be welcoming for necessary, optional and social activities. It has to encourage users to be engage longer in the space. Consequently, users' behaviour is a reflection of the way planning and urban design shape public open spaces. Although all the case study spaces fared quite well in the application of techniques examining their physical design, observation showed that they are not

liveably used. Why they are not? The next chapter illustrates the users' perceptions, which offer insights into what would make these spaces more liveable.

Chapter 6: Users' Perceptions

6.1. Introduction

Clear weaknesses in the liveability of the case study spaces appear from the evaluation of their urban design and observation of users' interaction with the spaces as reported in the previous chapter. At this stage it is essential to find out what do those who the spaces are designed for think about the spaces' liveability. As mentioned earlier in Chapter 3, a questionnaire was designed to explore the users' perceptions. 30 questionnaires were completed by the space users in each location via face-to-face interview. For a random sample to be generated, participants were selected based on a rhythm of every other fifth person entering the space. Data was directly entered from the questionnaire into an SPSS database for analysis. After entering all questionnaire responses into the database the data was cleaned to identify inconsistencies and outliers. This was done by producing frequency figures for each question and then examining the outliers. Then, cross-tabulations were used to identify nonsensical responses. The open-ended questions, however, were analysed manually by quoting interesting responses verbatim. Furthermore, to find out the perception of those who are not using these spaces, semi-structured interviews were conducted with community representatives. This presents the issues that hold back potential users from using and enjoying the spaces.

Public open space is a planning and design product. This chapter is concerned with the product's quality from a user level where there is no clear division between the two terms. Therefore, planning and design were addressed as one overlapping subject. The chapter starts with evaluating the socio-demographic nature of the users, their evaluation of the contribution of case study spaces to the city including environmental and economic, public participation, safety and maintenance. Then it assesses the active engagement of users in the spaces by evaluating users' activities. It finally investigates the missing requirements of the current and potential users.

6.2. Socio-demographic aspects

Availability is a crucial aspect in assessing space quality. A liveable public open space is one that is used by different groups of the community no matter their age, gender, ethnicity, income, education level and disabilities. It has to feel welcoming for individuals and groups of the society. This was one of the aspects that the fieldwork aimed to shed light on.

6.2.1. Users' ethnicity

As mentioned earlier in Section 4.3, the government has been binding all ethnic groups in the Omani society to the concept of *'Omani citizen'* since 1970. It is non-politically correct in Oman to classify Omanis according to their ethnicity. No official data or statistics are recorded on ethnicity. The survey follows the official classification of the Omani society according to their nationality as Omani and expatriate. The Muscat governorate has the highest number residents in Oman with 28% of the total population; 52.46% of them are Omani and 47.54% are expatriate as recorded in the 2010 census (see Table 4.2 in Section 4.3.1). The face-to-face questionnaire field work data is based on a ratio of 65% Omanis and 35% expatriates across the case study spaces overall (see Figure 6.1). This figure does not reflect the real ratio of users, as shown in the observations reported in Chapter 5. A major limitation in communication, however, forced the author to skip many of the chosen participants according to the random selection rhythm because many of the expatriates could barely speak either Arabic or English. This was an issue particularly in the Municipality Square, where many of the users were expatriate labour. Longer time was required in this specific square in order to fulfil the data collection adequately. It was the case as well, to a more limited extent, in Mutrah Plaza, Ministries Plazas and the Palace Square respectively but the large flow of users from other groups made it easy to reach the target numbers of questionnaire respondents. This bias towards Omani respondents has been taken into account when reporting on the findings from the questionnaire in this chapter, and is referred to

explicitly in the following sections, particularly when interpreting the socio-demographic composition of the sample.

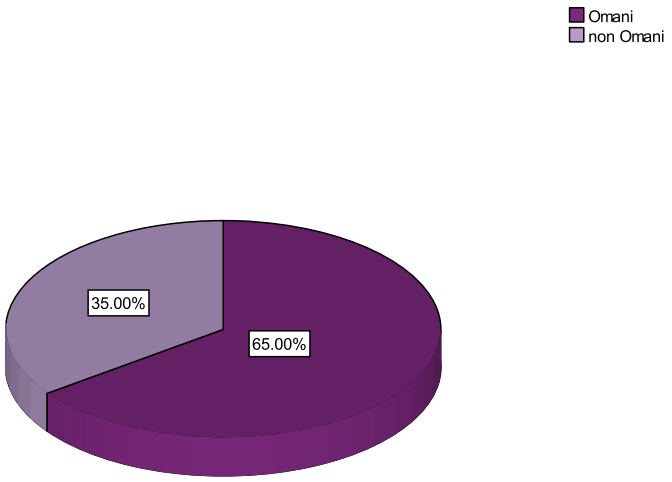


Figure 6.1: Respondents' nationality.

Palace Square

As mentioned in Section 4.7.1, the Palace Square is located in Muscat State, where Omanis are more than double the number of expatriates as recorded in the 2010 census (see Table 4.4 in Section 4.3.1). Fieldwork participants in this square shows a similar ratio of Omani, who reached 76.7% and expatriates were 23.3%. Indeed, the Palace Square has the highest number of Omani participants compared to the other case study spaces (see Table 6.1). This finding is similar to the finding from observation, as Omanis were the majority users on weekdays (see Section 5.4). This location as explained earlier is a tourism spot where groups of tourists visit in winter. The survey, however, was conducted in the summer, which is considered the lowest tourism season in Muscat. Therefore, Omani participants are considerably more numerous than non-Omanis. Only one tourist was recorded in the questionnaire data collection.

Municipality Square

This square is located in Muttrah State, where expatriates are almost double the number of Omanis residents as recorded in the 2010 census (see Table 4.4 in Section 4.3.1). Contradicting with the findings from the observation in the previous chapter, the questionnaire was administered to a higher number of Omani participants (36.7%) than Asian (Pakistani and Indian 33.3%) due to communication constraints. Although the square is located overlooked by the Ministry of Commerce and Industry, which is dominated by Omani officers and very busy with Omani calling in during the day, very few adult Omanis use it, and the total expatriate participants in the survey was still higher, as expatriates were 63.3% and only 36.7% were Omanis. There is greater diversity in the nationality of users in Municipality Square compared to the other case studies, at least in the summer, when the survey was conducted (see Table 6.1). Indeed, Indian was the second largest group of users in all the other cases. As discussed later in Section 6.2.4, most of the users had been educated to below high school degree, because of a large number of these being from the Asian expatriates' labour group. The square is also surrounded by private sector organisations such as banks, travel agencies and companies which are dominated by expatriate office workers. Additionally, most of the residents in the area are expatriates; which explains their domination in using the square.

Ministries Plaza

Ministries Plaza is located in Bawshar State, where expatriates are more than double the number of Omanis as recorded in the 2010 census (shown in Table 4.4 in Section 4.3.1). Nevertheless, fieldwork data shows the non-Omani participants are less than one third. The questionnaire indicates 73.3% Omanis and 26.7% expatriates. Questionnaire data shows a variety of expatriate users from India, Philippines, Egypt and Sudan (see Table 6.1). The surrounding context has a great influence in making this plaza familiar to the Omanis. The plaza is well maintained and highly secure because of the ministries head office buildings. It is located near to prestigious

residential districts such as Shatti Alqurum, Madinat Sultan Qaboos and Madinat Al Ilam. Moreover, officially and unofficially events have been hosted in the plaza such as the countdown to the *'Muscat 2010 2nd Asian Beach Games'* (see Figure 4.25 in Section 4.7.3), with the clock that was erected for this event still being in the middle of the plaza.

Muttrah Plaza

Muttrah Plaza, as the Municipality Square, is located in Muttrah State, where Omanis are just less than half the residents as recorded in the 2010 census (see Table 4.4 in Section 4.3.1). Lack of communication was an issue but not as serious as the Municipality Square. 73.3% of the participants in the fieldwork were Omanis and only 26.7% of participants were expatriate, as shown in Table 6.2. However, the data shows a wide diversity of different nationalities from India, Emirates, Iraqi, Egypt, Sudan and Iran (see Table 6.1). This could be because of the plaza is close to Souq Althalam (the oldest traditional market of the city), the fort, the fish market, vegetable market, Al-Riyam park, restaurants, cafes and hotel and the harbour.

	Omani	Emirates	Iraqi	Lebanon	Egyptian	Sudanese	Iranian	Pakistani	Bangladeshi	Indian	Philippino	Total
Palace Square	23			1				1	1	4		30
	76.7%					23.3%						
Municipality Square	11				3	6		2		8		30
	36.7%					63.3%						
Ministries Plaza	22				1	1				4	2	30
	73.3%					26.7%						
Muttrah Plaza	22	1	1		1	1	1			3		30
	73.3%					26.7%						
Total	78	1	1	1	4	8	1	3	1	20	2	120
	65%					35%						

Table 6.1: Respondents' nationality

6.2.2. Users' age structure

The 2010 census indicates the population in Oman is very youthful, with the age structure dominated by the young people. Nearly one third (27.8%) of the population are below the age of 15. The adult age group, which is 15-64 years, is found as 69.5% of the population and this is a combination of two parts: 61.2% as 15-39 years old and 12.9% as 40-64 years old. Elderly people of age 65 years and over are only 2.7% (see Tables 4.6 and 4.7 in Section 4.3.1). The analysed data shows that the users in the under-15 group are not in proportion with the same age group in the society age structure from the general census of 2010 (see Figure 6.2), with the under-15 group being greatly under-represented among the users across the four case study spaces overall. As shown in Figure 6.3, the Palace Square has a wide distribution of all age groups, with adult age dominating. The Municipality Square is very well used by the youth group and missing the group of age 50 and over (see Figure 6.4). It has less diversity of age groups compared to the Palace Square and is dominated by young people under the age of 15. Field data shows that the square is probably not preferred to some extent by adult middle-age group. Whereas, in Ministries Plaza and Muttrah Plaza users were mostly from adult age and elderly groups, aged 20 and over, with no children having taken part in the face-to-face questionnaires in these spaces (as shown in Figures 6.5 and 6.6).

The results from administering the questionnaire indicate differences in users' age structure according to nationality. As illustrated in Figures 6.7 and 6.8, the Palace Square has a wider range of age groups among Omani users compared to other nationalities. In fact, comparing to the other spaces, the Palace Square has the widest age distribution of Omani users and the lowest of other nationalities. Age groups of Omani and non-Omani in Municipality Square are quite similar, with the younger being predominant among both nationality groups. However, the users from the 40-49 age group are the oldest in this space, and they are only from other nationalities. Unlike the Municipality Square, data shows that users from all nationalities in Ministries Plaza and Muttrah Plaza are over the age of 20. In Ministries Plaza Omani users reach up to age 64 and other nationalities up to over 65. However, Omani

participants are slightly more widely distributed across different age groups in Muttrah Plaza compared to other nationalities. However, this age distribution is also linked to the users' activities in the space, which will be discussed later in this chapter.

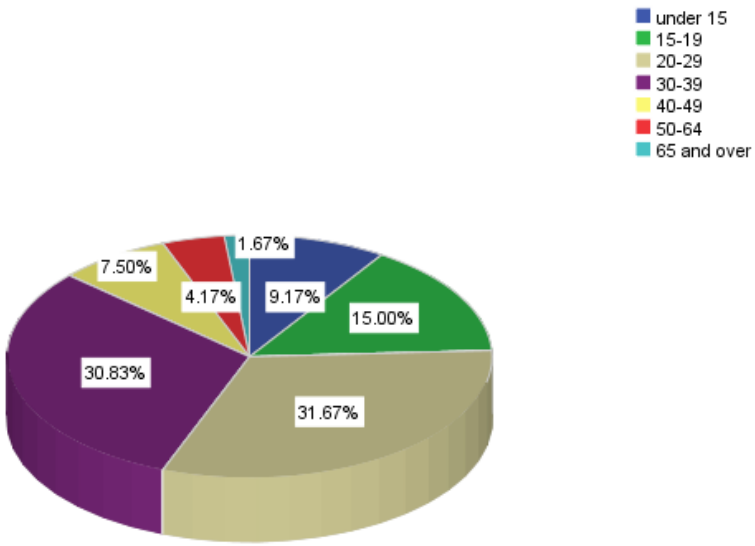


Figure 6.2: Respondents' age groups

Palace Square

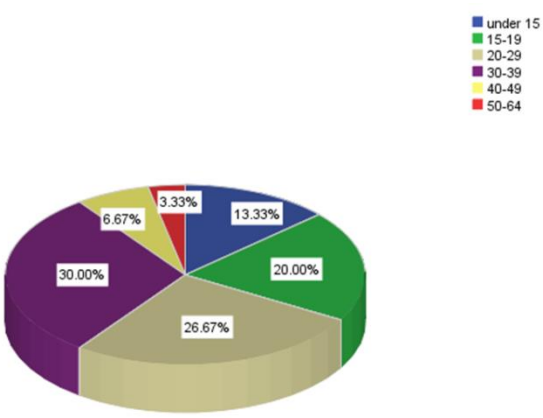


Figure 6.3: Respondents' age structure in the Palace Square.

Municipality Square

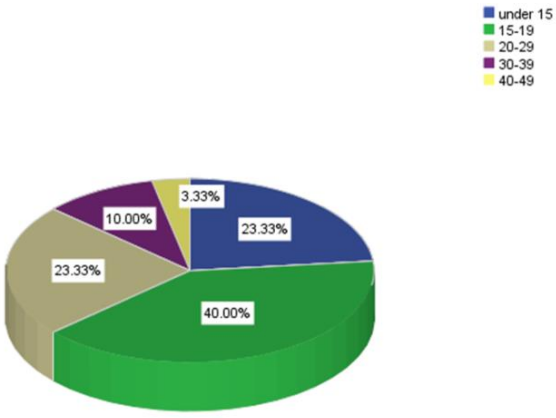


Figure 6.4: Respondents' age structure in the Municipality Square.

Ministries Plaza

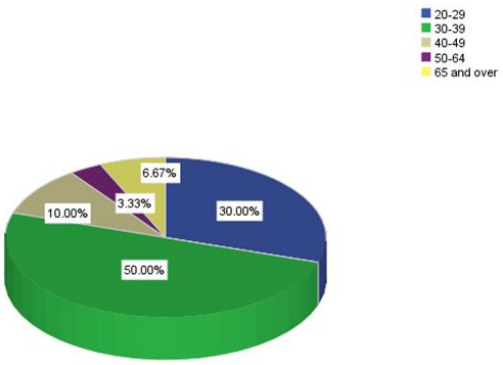


Figure 6.5: Respondents' age structure in the Ministries Plaza.

Muttrah Plaza

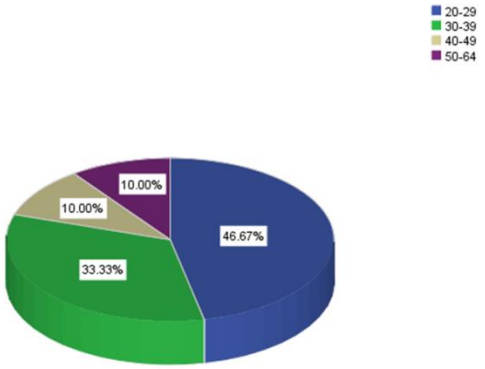


Figure 6.6: Respondents' age structure in the Muttrah Plaza.

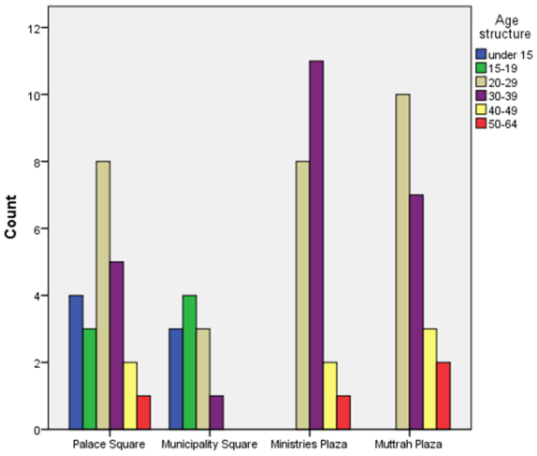


Figure 6.7: Age structure for Omani respondents in each space

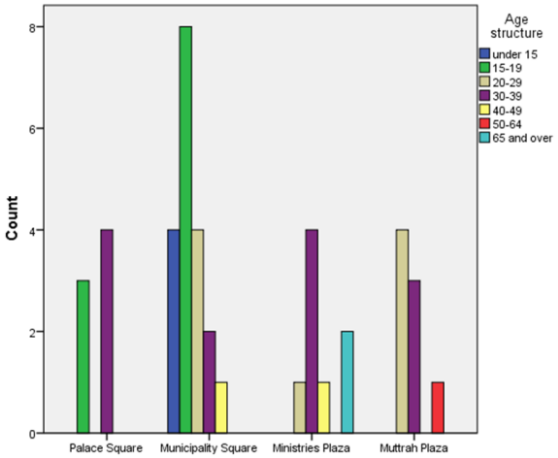


Figure 6.8: Age structure for non-Omani respondents in each space

6.2.3. Users' gender

The Omani society is strongly shaped by the gender structure. According to the 2010 census, males exceed female in the total population by 16.2% (see Section 4.3.1). However the field data also shows that the number of male users of the case study spaces was 63.34% higher than that of females, ie the male respondents exceeded female respondents by 76. This finding presents fewer women users than the percentage that Whyte (1980) found in his research in the West, with 40% female on average use in mid-Manhattan plazas. As illustrated in Figure 6.9 there is a big gap between the participants from the two genders. In the best situation females were just above one quarter of the total participants. Still female users were far fewer than the male proportion due to domestic commitments and cultural restrictions. Additionally, the needs, appropriation opportunities, and options for action vary between the two genders in the society. As mentioned in Section 2.3.1, women generally have more domestic commitment than men, which limits their leisure time. In the case of Muslim women, these face even more multiple time limitations, lack of social interaction because of priority being given to the husband, children and other family members, and lack of opportunities as they tend to avoid certain places because of their anxiety for their children's safety.

However, the Palace Square is surrounded by residential neighbourhoods, making it more convenient to be used by females. It has the highest rate of female usage (as recorded through response to questionnaires) compared to the other cases as in Figure 6.10. Female users were recorded as 26.67% in the Palace Square followed by Municipality Square and Ministries Square with 16.67% each, and Muttrah Plaza with 13.33%, as shown in Figures 6.11, 6.12 and 6.13.

Questionnaire data shows differences in the gender of users according to their nationalities. Apart from the Municipality Square, the percentages of Omani male participants are higher than those of non-Omani males in all case study spaces. Omani female participants were totally missing in the Municipality Square and less than for the other nationalities in all case study spaces expect in the Palace Square (see Figures 6.14 and 6.15). This could be because the Palace Square is surrounded

by neighbourhood and the Omani population is higher in the state where it is located. This makes it accessible by female users in general and specifically by Omanis.

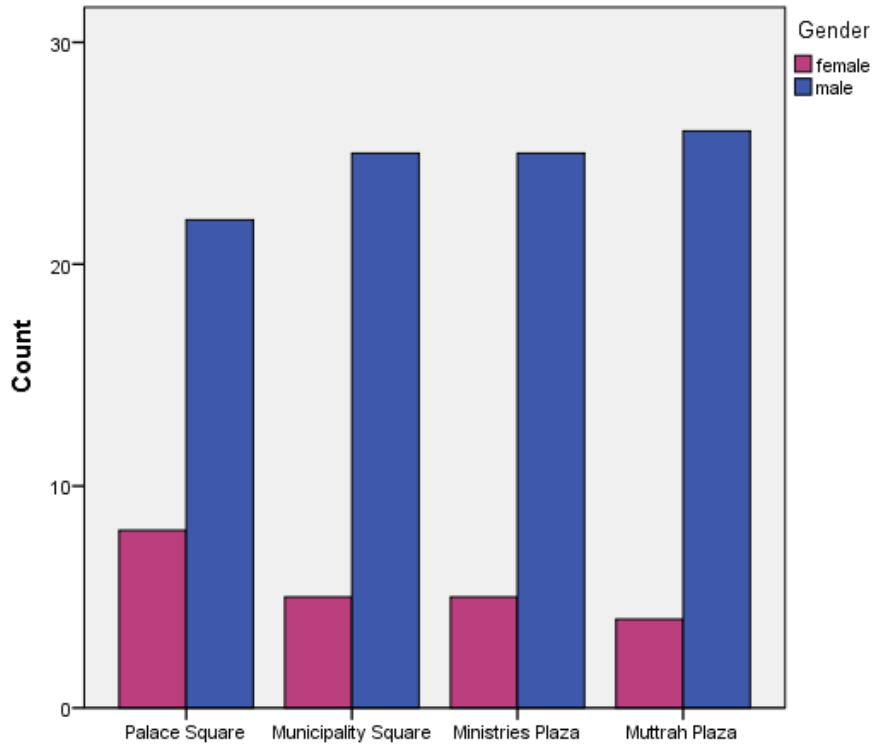


Figure 6.9: Respondents' gender structure

Palace Square

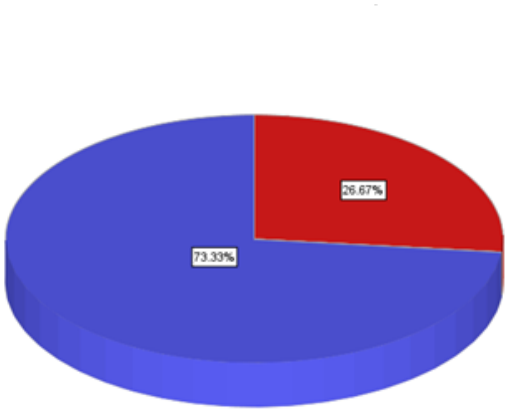


Figure 6.10: Respondents' gender structure in the Palace Square.

Municipality Square

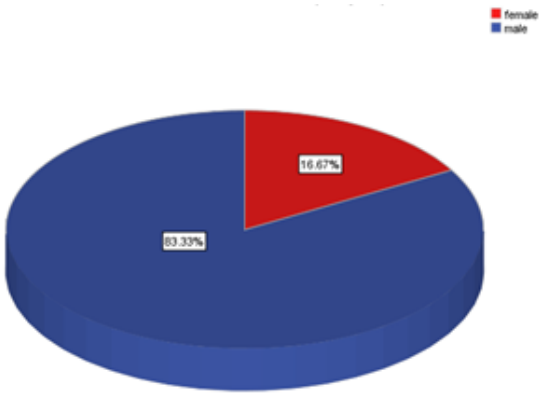


Figure 6.11: Respondents' gender structure in the Municipality Square.

Ministries Plaza

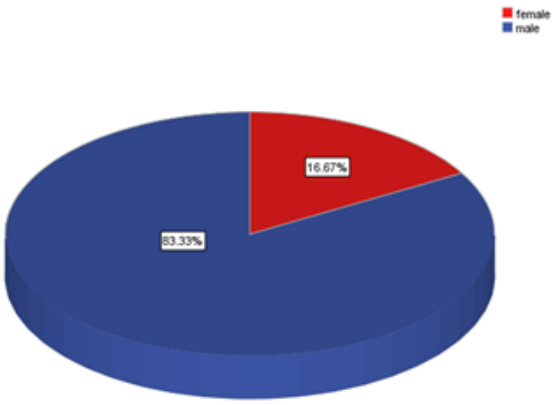


Figure 6.12: Respondents' gender structure in the Ministries Plaza.

Muttrah Plaza

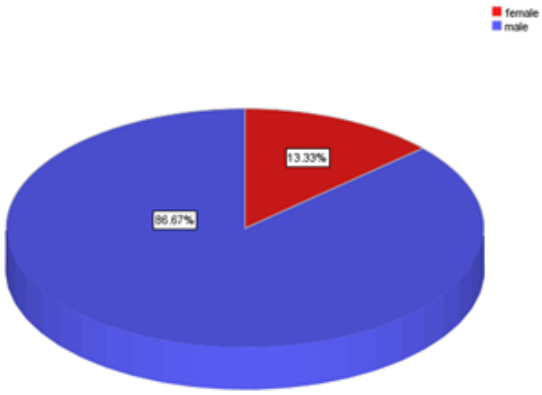


Figure 6.13: Respondents' gender structure in the Muttrah Plaza.

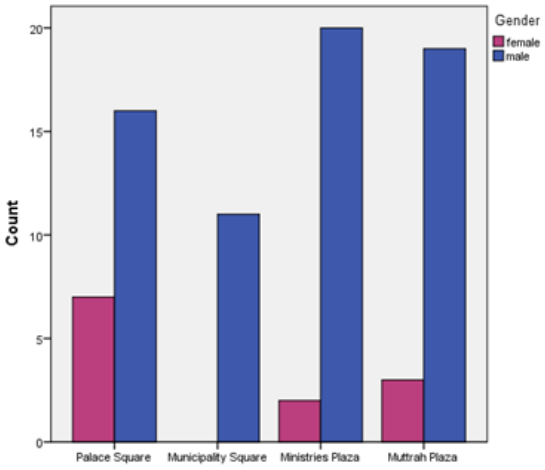


Figure 6.14: Omani respondents gender structure

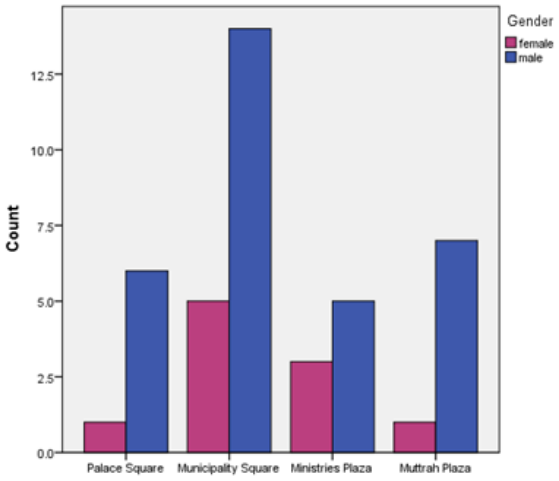


Figure 6.15: Non-Omani respondents gender structure

6.2.4. Users' educational qualifications

Another significant user feature the survey looked at is their educational level. As shown in Figure 9.50, the Palace Square users were mostly with or below high school qualification followed by university graduates. This is probably because it is close to traditional residential areas from which a wide range of users with a variety qualification have access to the space. Users in Municipality Square have a similar distribution of education levels, with further expansion in the below high school qualification group. From field data the Ministries Plaza is more used by the university graduates. Since the plaza is not in a mixed-use area, users generally need a car to use it, and need to make a deliberate decision to use it for specific activities, in this case exercising as will be discussed later. It has been evidenced elsewhere that this type of healthy lifestyle awareness increases with education attainment, as Thrane (2006) showed in his research. As mentioned earlier, it is near to prestigious residential districts whose residents usually adopt 'high' life styles. Finally, Muttrah Plaza has the most balanced range in users' educational background. This is possibly because of the natural attraction of the location, which makes it a destination for many people no matter their educational degree (see Figure 6.16).

The qualification background of participants was different between Omani and non-Omani. The field data indicates that Omani participants were from different qualification levels in the Palace Square, Ministries Plaza and Muttrah Plaza. Omani users in the Municipality Square held high school qualifications and below (see Figure 6.17). However it has the widest diversity of different education qualification background among other nationalities. Non-Omanis in both plazas were only university graduates (see Figure 6.18). Non-Omani users with below college qualification usually work as labour. Mobility of such group is not very flexible in a city that totally depends on cars for transport. They are missing in Ministries Plaza case because it is not in a mixed used area. And again they are missing in Muttrah Plaza mainly due to the problem of lack of communication during the survey.

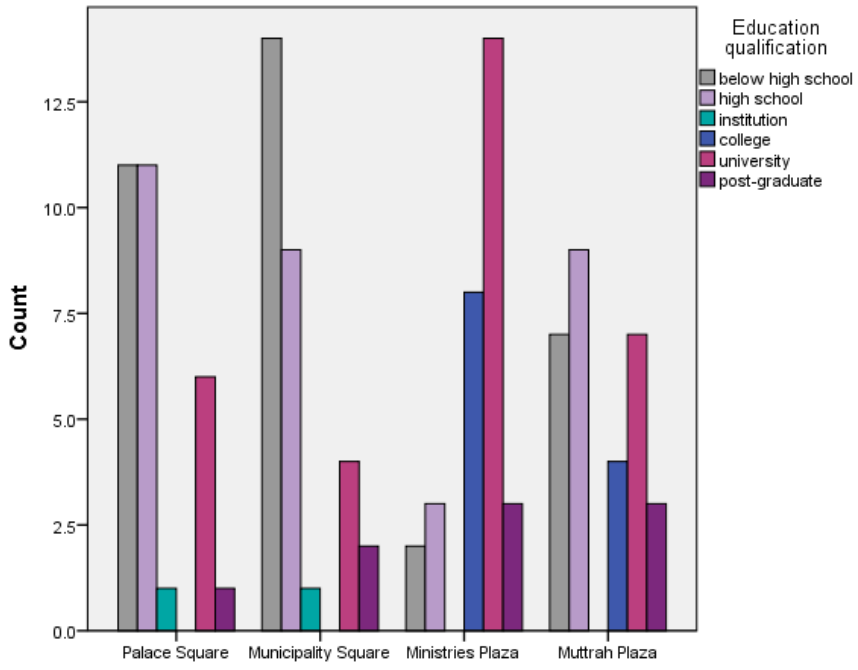


Figure 6.16: Respondents' education qualification

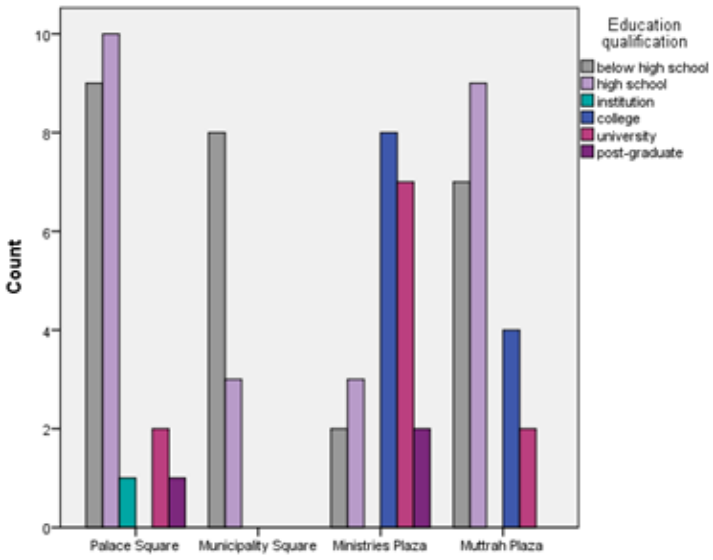


Figure 6.17: Omani respondents' education qualification

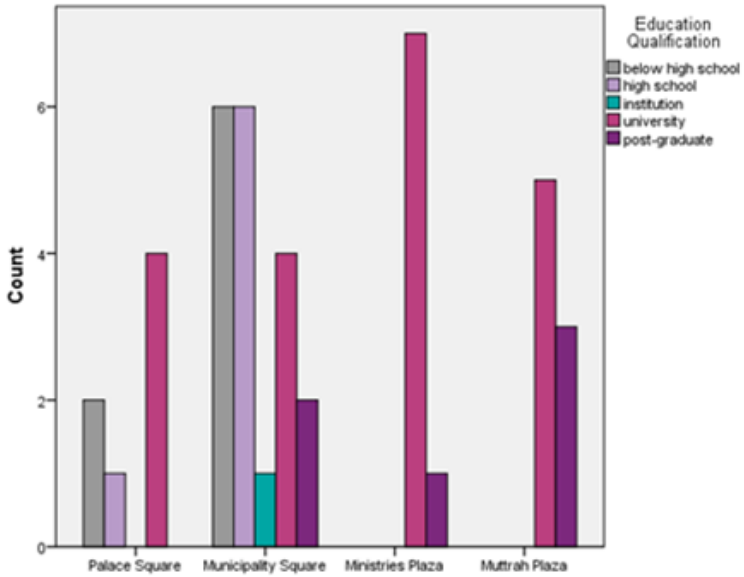


Figure 6.18: Non-Omani respondents' education qualification

6.2.5. Users' occupation

According to the data collection all case studies were visited by different users in terms of their occupation. As shown in Figure 6.19 private sector employees and students were the most common users in the Palace Square. Students were also the

highest users in Municipality Square, followed by office workers from the private sector. However, there is an absence of office workers users from the government sector, who are mainly Omani. In the Ministries Plaza office workers from the private sector were the majority, followed by office workers from the government sector. Muttrah Plaza was the most balanced in spread of users according to their occupation. Still office workers from government and private sectors were dominant in this space.

As shown in Figure 6.20, Muttrah Plaza, followed by Palace Square, are the most accessible to Omani respondents from a wide range of occupations. Ministries Plaza is missing self-employee and unemployed Omani users. Omani users in Municipality Square were only students and private sector employee users. Expatriate users were rather more balanced in all case study spaces with extra domination of students in the Municipality Square (see Figure 6.21).

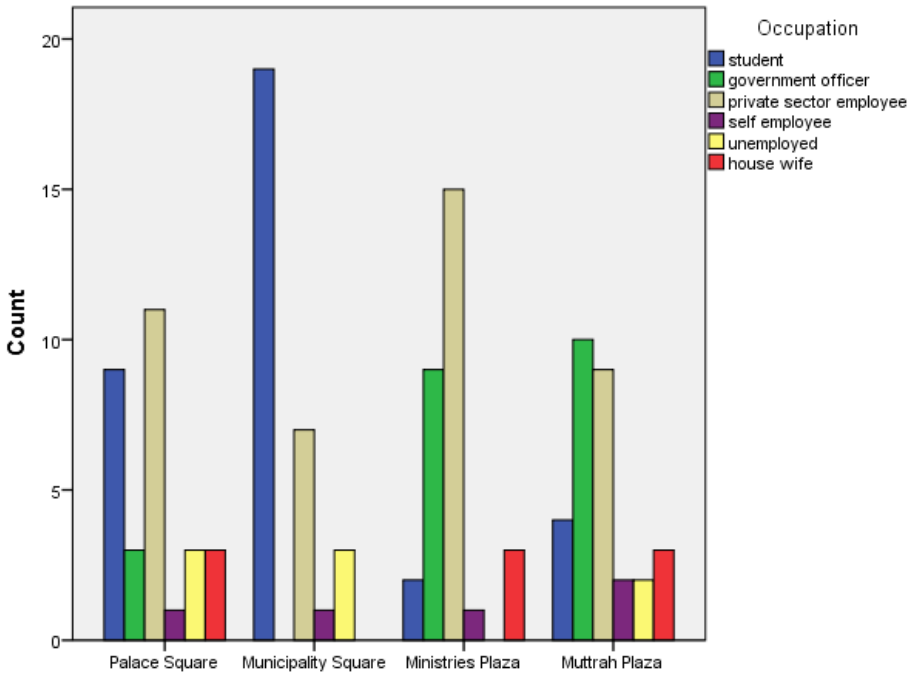


Figure 6.19: Respondents' occupation

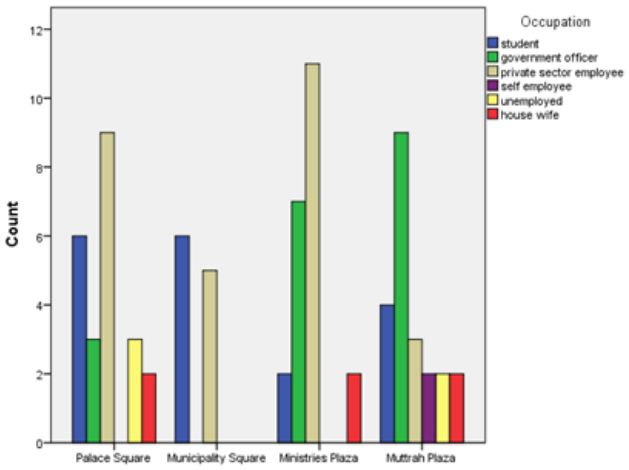


Figure 6.20: Omani respondents' occupation

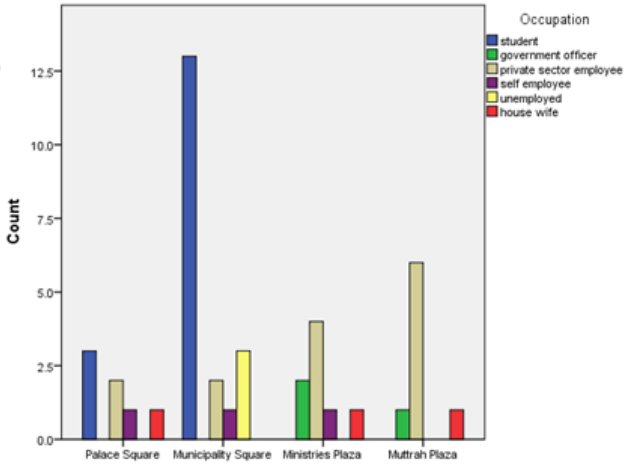


Figure 6.21:Non-Omani respondents' occupation

6.2.6. Users' income

The income question was left to the very end of the survey, where it was expected that a rapport would have been built up with the interviewee which would allow easy and honest responses. The importance of their answer to the question was explained briefly to each participant. As shown in Figure 6.22, good responses were collected; only 10% of the participants did not answer, mostly from the young age participants, generally in Municipality Square, because they did not have their own income and they were uncertain about their family income. The survey shows that the case studies are used by various income groups. 41.67% of case studies users were in the less than OR500 monthly income group, 35% were in the RO500- RO1100 income group and 13.33% were in the more than OR1100 income groups[1]. Low income users were the greater or equal to middle income user groups and high income user groups in all case study spaces among both Omani and other nationalities, except in Ministries Plaza, where both Omani middle income and Omani high income respondents were more numerous than low income (see Figures 6.23 and 6.24). Again, this relates to the location of this plaza near to prestigious residential districts

[1]Omani Rials currency value to Great British Pound: OR500=£ 794.6, OR1100= £1748.13

where the majority of residents are well educated, which is probably linked to having a high income.

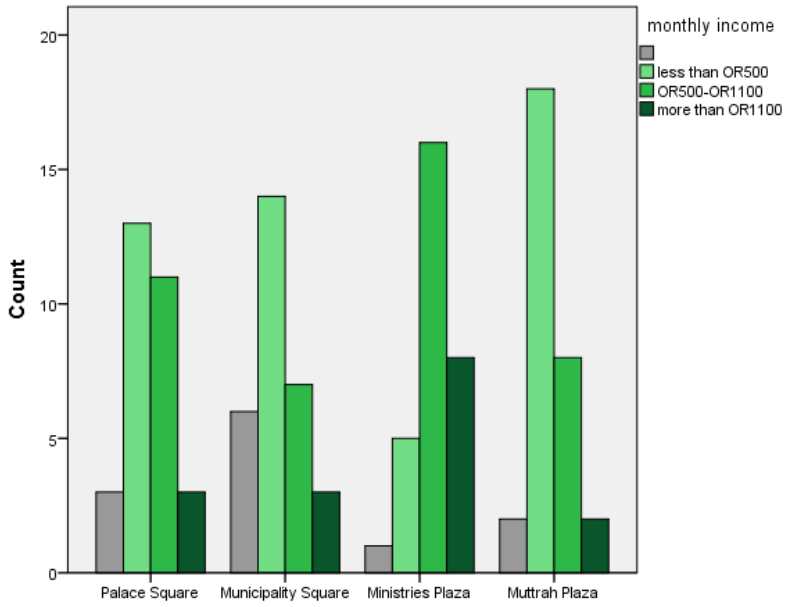


Figure 6.22: Respondents' monthly income

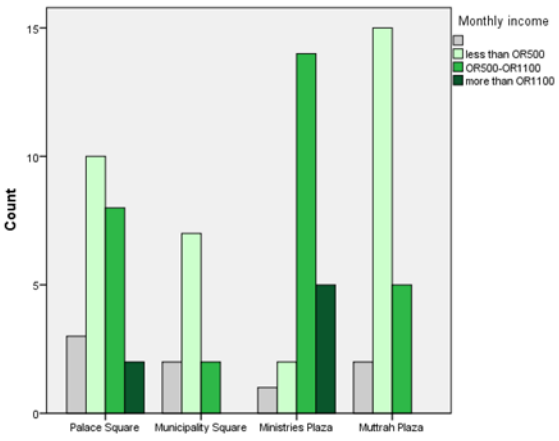


Figure 6.23: Omani respondents' monthly income

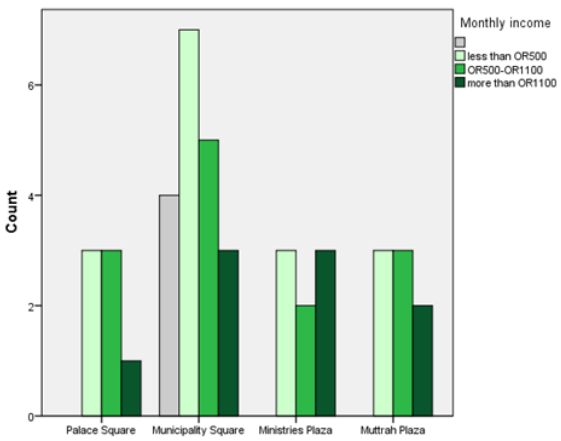


Figure 6.24:Non-Omani respondents' monthly income

Palace Square

As shown in Figure 6.25 the most frequent users for the Palace Square were mostly from lower and middle incomes. This is probably because of the nature of the surrounding residential neighbourhoods. As mentioned earlier, this square is located in a state where local nationals are almost double the number of expatriates. As mentioned in Section 4.3.1, the majority of expatriates in Oman are labour and earn less than Omanis, as is the case in all GCC countries. There was a similar balance in the proportion of users' nationalities and their income, which is not the case in the other three spaces, as is explained below (see Figure 6.26).

Municipality Square

Similar to the Palace Square, users from all income groups were using the Municipality Square on daily and weekly bases, as shown in Figure 6.27. The distribution of income levels among those of non-Omani origin was more even than among Omanis. There is a drop in the Omani users in the middle income group, and they are totally absent in the high income group as shown in Figure 6.28. This clearly demonstrates that the Square is preferred by the expatriates and almost abandoned by the Omani of middle and higher incomes. This is due to lack of user facilities, as is explained later in Section 6.6. Moreover, using such places is a relatively new concept for Omanis compared to the expatriates. Community representatives revealed later in Section 6.7, that the Omani have relatively higher incomes than labour expatriates, which give them more choices in spending their time in spaces with good user facilities. The drop in the standard of maintenance and cleanliness in this square might be another reason behind its abandonment by Omani with better incomes who normally have better choices (see Section 6.5).

Palace Square

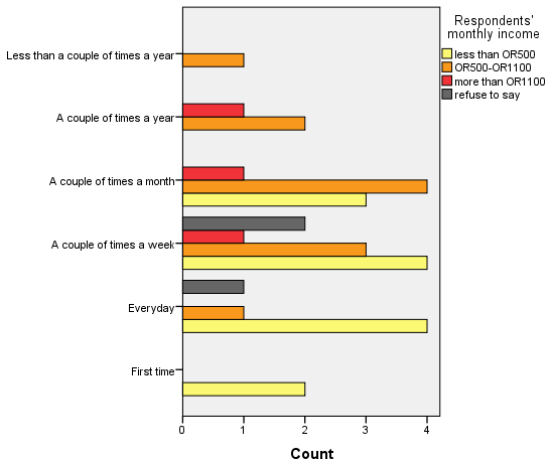


Figure 6.25 Relationship between monthly income and frequency of visits to Palace Square

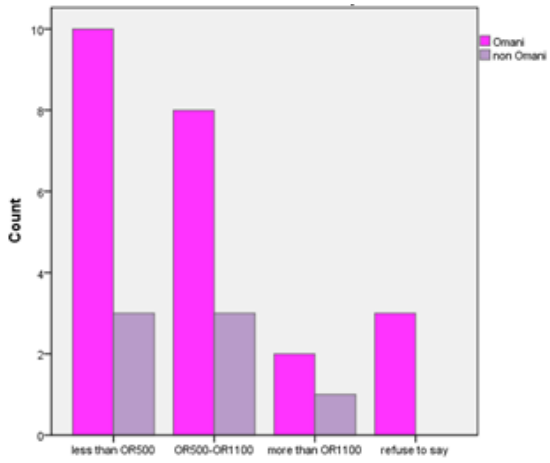


Figure 6.26: Respondents' nationality and income in Palace Square

Municipality Square

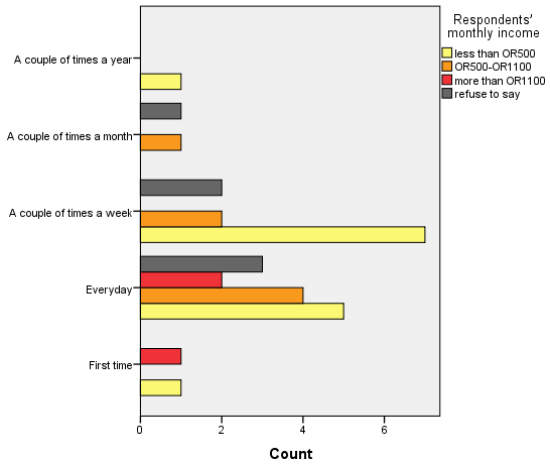


Figure 6.27: Relationship between monthly income and frequency of visits to Municipality Square

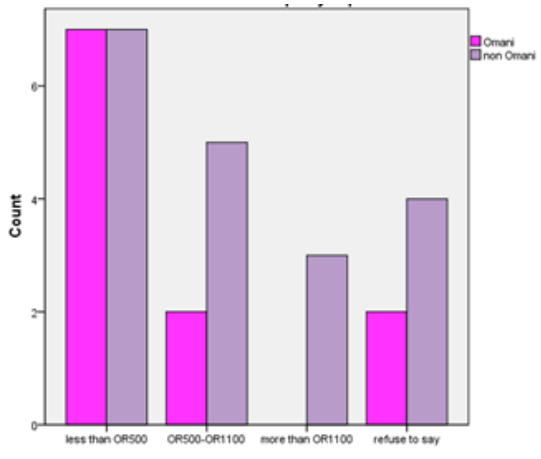


Figure 6.28: Respondents' nationality and income in Municipality Square

Ministries Plaza

The Ministries Plaza, however, has a different spread of users by income where the middle-income users were the majority and the more frequent users (proportionately), followed by high and low income respectively (see Figures 6.22 and 6.29). As discussed earlier, this is possibly because the majority of users in this plaza have a high education degree and it is located near to prestigious residential districts. Moreover, its location with no other uses or close neighbourhoods in its surroundings disincentives its use by lower income users. Expatriate low-income users were fewer compared to Omani users of the same group (see Figure 6.30), possibly because they are not motivated by the type of activities that users from higher income groups engage in, which are more related to fitness, as was identified by Thrane (2006). Vehicular travel is required to access this plaza, and Omanis rely more than expatriates on cars, especially as families. Low-income users would not travel to keep fit either because it is costly or because of lack of health awareness, whereas the number of expatriate users in the same group was slightly higher probably because, as Naithani (2008) states, most of the expatriates are from Asia, and these are used to using such spaces and public transport in their original countries.

Muttrah Plaza

There was an equal number of respondents from low and middle incomes in Muttrah Plaza, with fewer being from high-income groups (see Figure 6.22). It has less income diversity in frequent users as demonstrated in Figure 6.31. The expatriate users practically followed the general pattern of income with a drop in the lower income. This, however, probably reflects the limitation in accessing interviewees from this group during the field research. However, as shown in Figure 6.32, there is no presence of the Omani users with high income. as the explanation provided by community representatives (see Section 6.7) was that people with high-income would probably require certain standards of space quality and activities to motivate

them to use the space, since they probably would have a wider range of choices from which to select.

Ministries Plaza

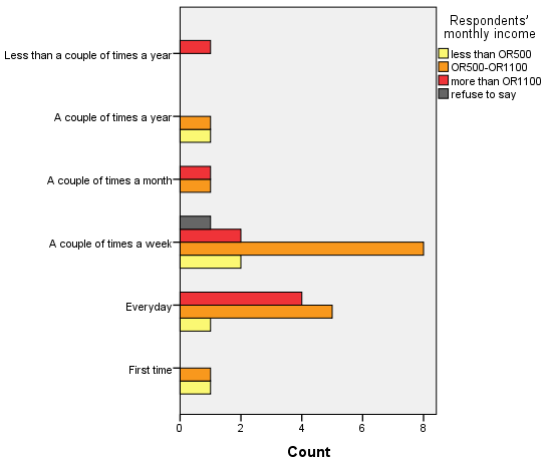


Figure 6.29: Relationship between monthly income and frequency of visits to Ministries Plaza

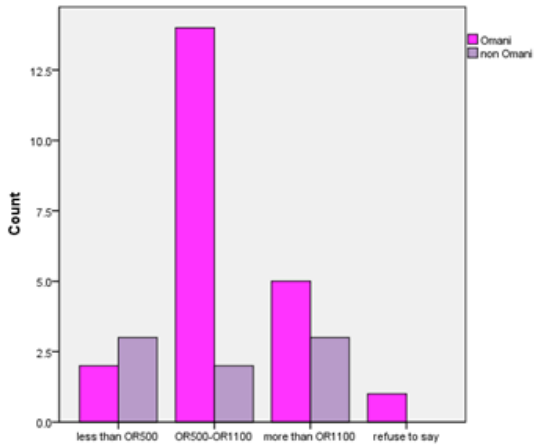


Figure 6.30: Respondents' nationality and income in Ministries Plaza

Muttrah Plaza

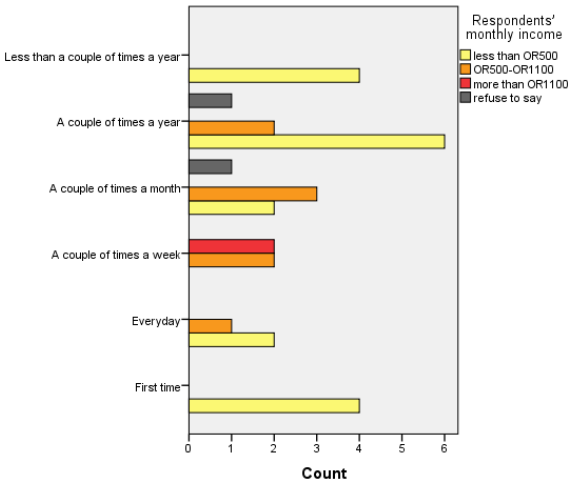


Figure 6.31: Relationship between monthly income and frequency of visits to Muttrah Plaza

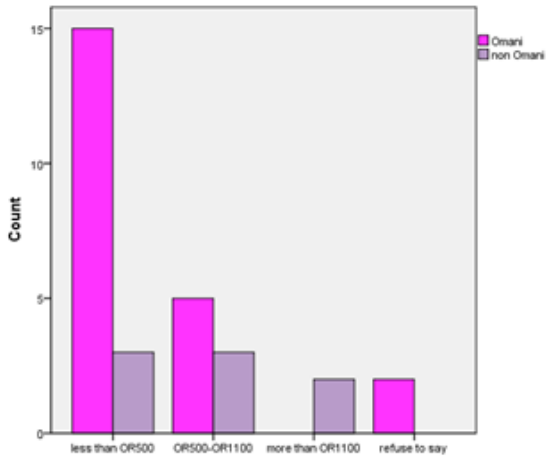


Figure 6.32: Respondents' nationality and income in Muttrah Plaza

6.2.7. Users' company

Over half of the respondents reported that they usually visited the places accompanied by others, and over a quarter visited equally accompanied or individually. Visiting alone was reported by less than a quarter in all case studies. The Municipality Square reported the highest proportion of lone users with 20.69%, followed by the Palace Square and the Ministries Plaza with 17.24% 17.24% in each (see Figures 6.35, 6.33 and 6.37). Muttrah Plaza was the less visited alone, with only 11.54% (see Figure 6.39). The range of types of company users reported differed in each case study between Omanis and non-Omanis.

Palace Square

In the Palace Square, for those visiting with company, visiting with friends and family were the highest in the case of Omani users and the only cases for non-Omani, as shown in Figure 6.34. Additionally, this space recorded the highest number of Omanis visiting accompanied by their partner, which was recorded as the highest compared to the other case studies, followed by accompanied by their children. This demonstrates that this square is a family-friendly area.

Municipality Square

On the contrary, the data shows a wider spread of expatriate accompanied respondents than in the case of Omanis. Non-Omanis were using the square accompanied by friends, family and children, whereas most of the Omanis participants were visiting with friends and few with a family (see Figure 6.36). This could probably be because most of the Omanis were from the young age users.

Ministries Plaza

Similar to all cases, the Ministries Plaza had visiting with friend as the highest in the Omani group, followed by family and children respectively, as shown in Figure 6.38, whereas for expatriates the most frequent categories in descending order were with partner, family and followed by childern. This plaza is also domestically-oriented for both Omanis and non Omanis.

Muttrah Plaza

In Muttrah Plaza the survey shows a variety of user groups among both expatriates and Omanis with different sequences as shown in Figure 6.40. In descending order, friends, family and partners are the most common company for Omani users. In non-Omanis, family was the highest, followed by partner, children and friends with the same ratio.

Palace Square

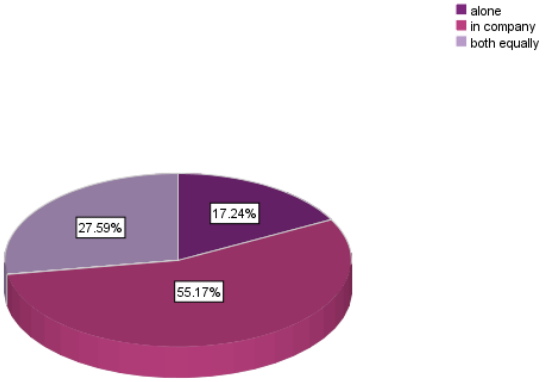


Figure 6.33: Visiting alone or in company in Palace Square

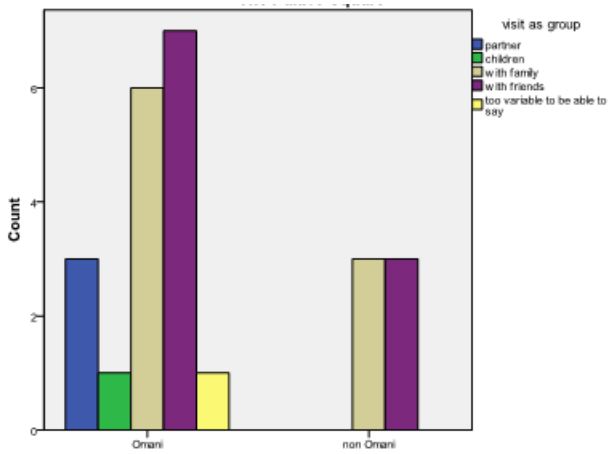


Figure 6.34: Company typology in Palace Square

Municipality Square

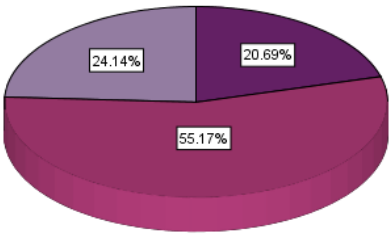


Figure 6.35: Visiting alone or in company in Municipality Square

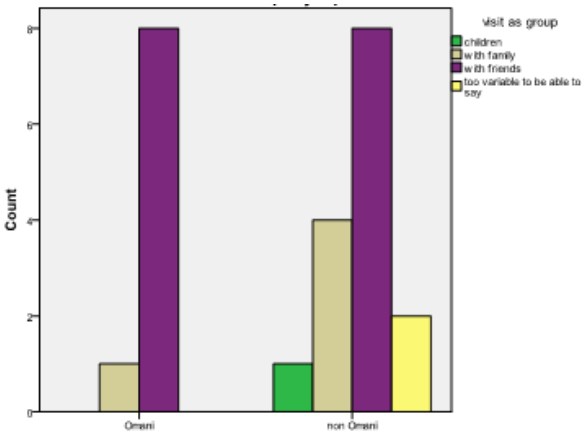


Figure 6.36: Company typology in Municipality Square

Ministries Plaza

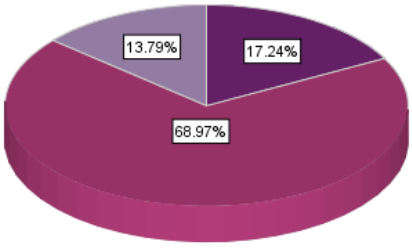


Figure 6.37: Visiting alone or in company in Ministries Plaza

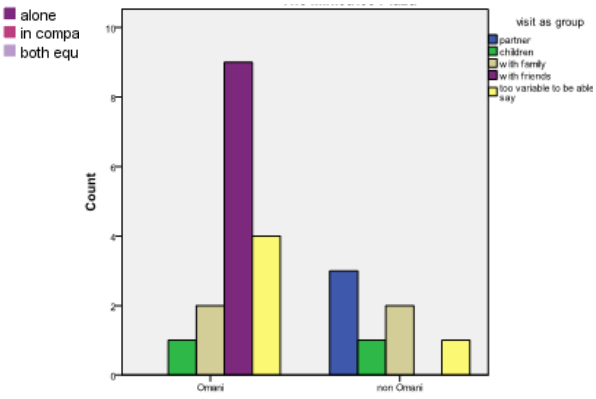


Figure 6.38: Company typology in Ministries Plaza

Muttrah Plaza

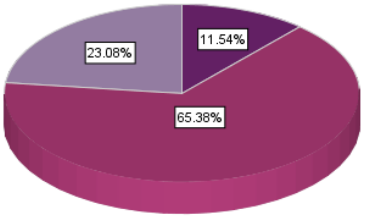


Figure 6.39: Visiting alone or in company in Muttrah Plaza

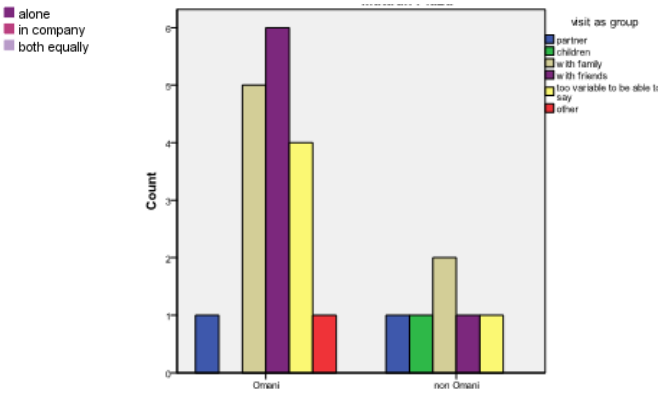


Figure 6.40: Company typology in Muttrah Plaza

6.2.8. Disability

A good quality public open space has to welcome those with special needs. This question was addressed through observation by the author rather than through asking respondents directly. As shown in Figure 6.41, participants with disabilities were 3.33%, 6.67%, 3.33% and 0% in Palace square, Municipality Square, Ministries Plaza and Muttrah Plaza respectively. Despite the design of Municipality Square including steps and different levels, it has more disabled users.

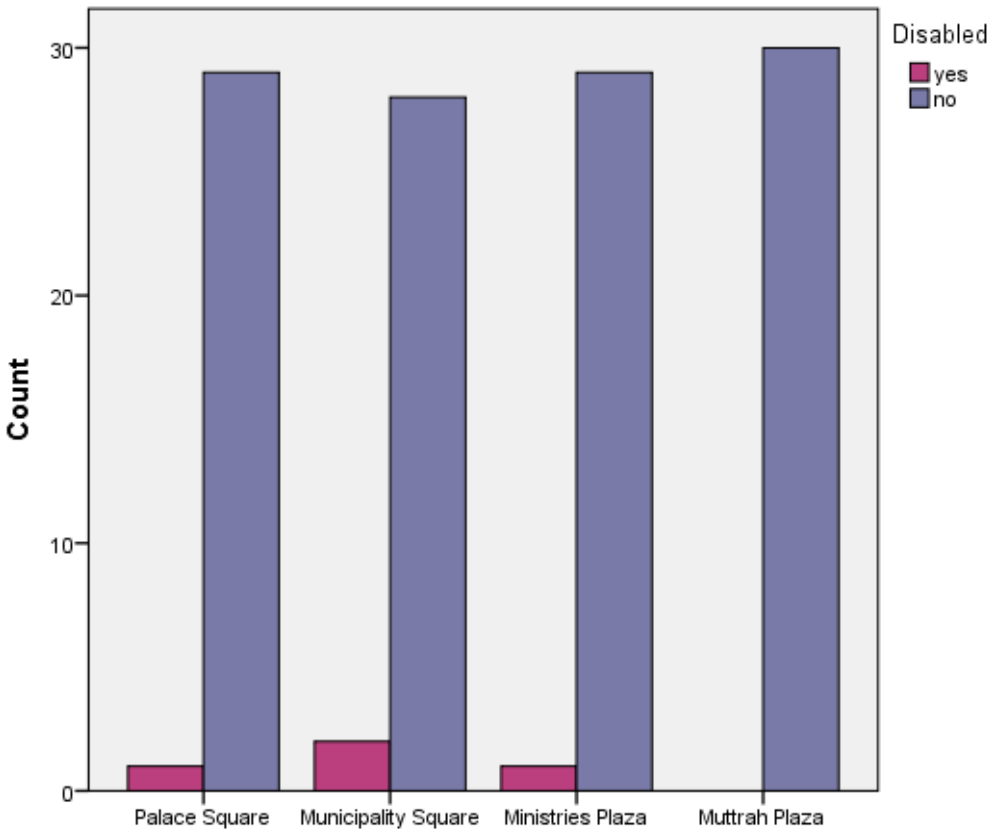


Figure 6.41 Disability among respondents

6.2.9. Accessibility (travel means used by respondents)

The majority of the participants in all case studies thought the spaces were accessible and easy to reach. Questionnaire data indicates that the two case study squares are more accessible by different travel means compared to the plazas, where the car is the dominant travel means (see Figure 6.42). This is because the squares are located within residential areas.

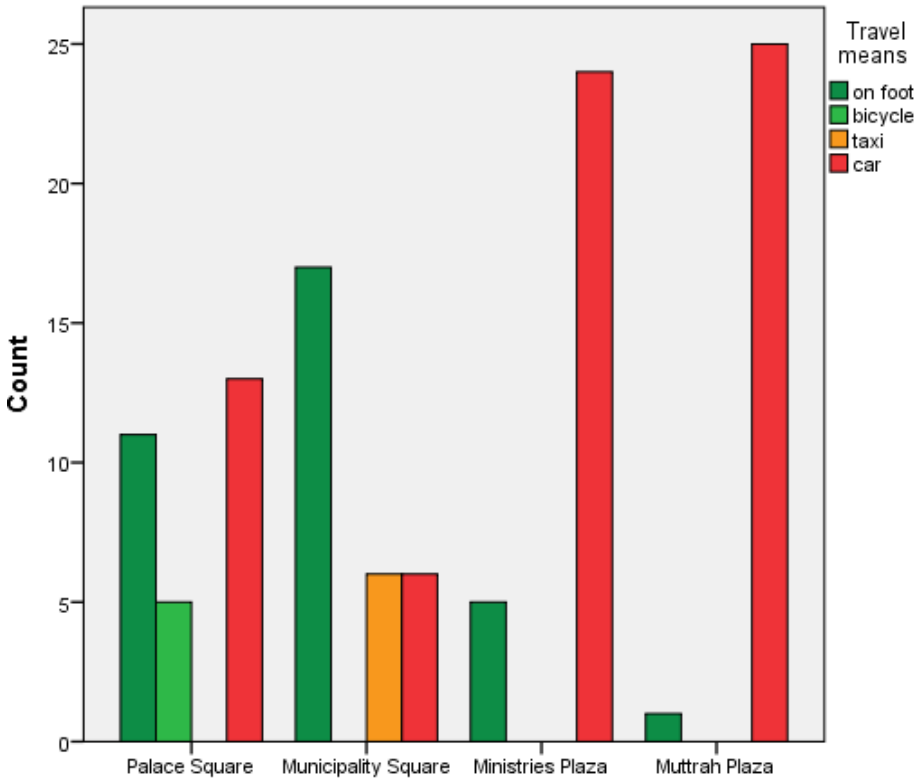


Figure 6.42: Respondents' travel means

Palace Square

Despite some restrictions in using the Palace Square during the royal reception and for security reasons, it has the highest rate of accessibility according to interviewees compared the other cases. Up to 66.67% of the participants thought it is very accessible and 16.69% found it easy to access (see Figure 6.43). As shown in Figure 6.44, 92.86% of the participants travelled to the space from their homes rather than from other possible locations such as work or shops, which probably included users from outside the local area as shown in Figure 6.45. It is considered accessible even by those who travel long. Participants using different travel means found the square accessible as shown in Figure 6.46, with a larger number of respondents from the local area considering it very accessible. However, some of the unsatisfied users were from the local community, as illustrated in Figures 6.46 and 6.47, because of security restrictions on the gathering of large groups and on certain activities, and road crossing risks. There were also unsatisfied users from the longest journey group because of the parking restrictions at certain times due to security reasons, traffic and travelling time as discussed later in Chapter 7.

Municipality Square

As shown in Figure 6.48, 56.67% of the participants in the Municipality Square said it is very easy for them to access the square and 30% said it is easy. The majority of the users were from the local area (see Figure 6.51) and it was easily accessible for them from their homes; only 6.9% of the participants travelled from work and 3.45% from shops (see Figure 6.49). There were displeased users from the local area apparently due to the street crossing issues and lack of proper walking and cycling paths since, as mentioned earlier, those were young and travel on foot (see Figure 6.50). The majority of walking participants and all of those travelling by car or taxi found the square easy to access, as shown in Figure 6.52.

Ministries Plaza

Accessibility was rated as fair and better in the Ministries Plaza. As shown in Figure 6.53, 60% of respondents found it very easy to access and the rest was evenly split between easy and fair. This is probably because the majority travelled by car and, as shown in Figure 6.57, they were all either pleased or satisfied with the plaza accessibility. 82.14% of the participants travelled from home and 17.86% from work as shown in Figures 6.54. Users from the local area with lower journey time were the most satisfied with the plaza's accessibility, as shown in Figures 6.55 and 6.56.

Muttrah Plaza

In Muttrah Plaza, 53.33% of the participants believed that it is very easy to access and 13.33% thought it was easy (see Figure 6.58). Unlike in the previous cases, the number of respondents from outside the local area was higher than that from inside the local area, as illustrated in Figure 6.61, probably because of its natural beauty by the seaside. Still, some of visitors from outside the local area were unsatisfied with the accessibility. Users who had to travel more than half an hour found it less accessible probably due to the traffic and journey time (see Figure 6.60). Compared to the previous cases, fewer users travel from their homes, though this is still the predominant point of origin of trips to the open space, as shown in Figure 6.59. Up to 80.77% of participants travelled from their homes, 11.54% from shops and 7.69% from work. This is probably due to the diversity in the urban fabric of the surrounding area. However, driving a car is almost the only way used by participants to visit the space (see Figure 6.62).

Palace Square

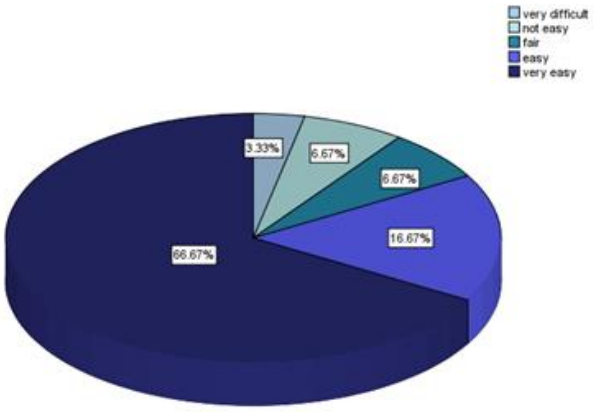


Figure 6.43: Accessibility of Palace Square

Figure 6.44: Point of origin of trips to Palace Square

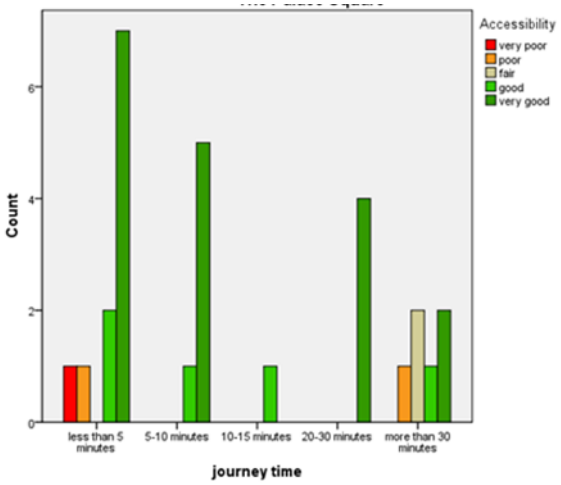


Figure 6.45: Accessibility and journey time relationship among Palace Square respondents

Palace Square

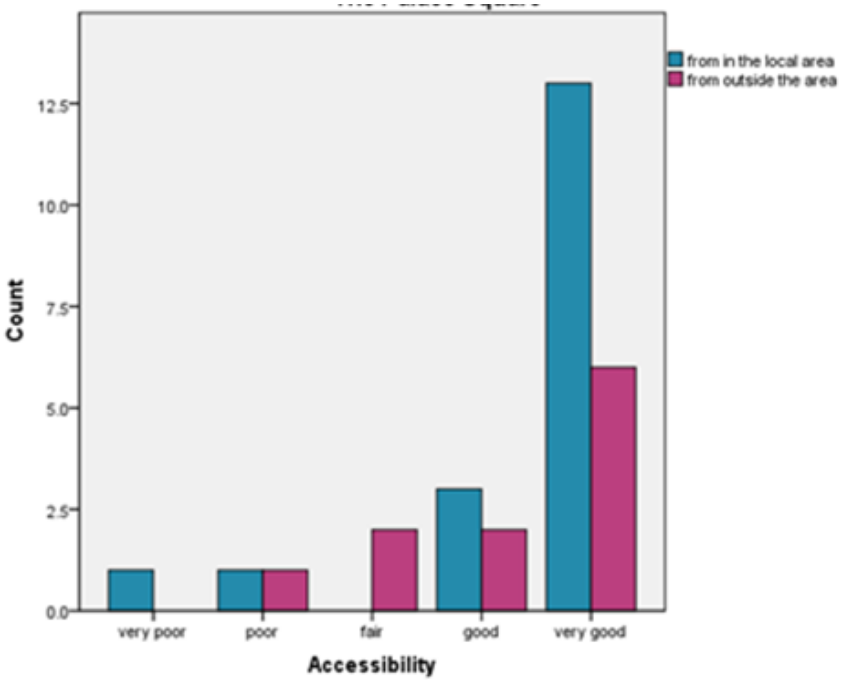


Figure 6.46: Palace Square respondents' area of residence

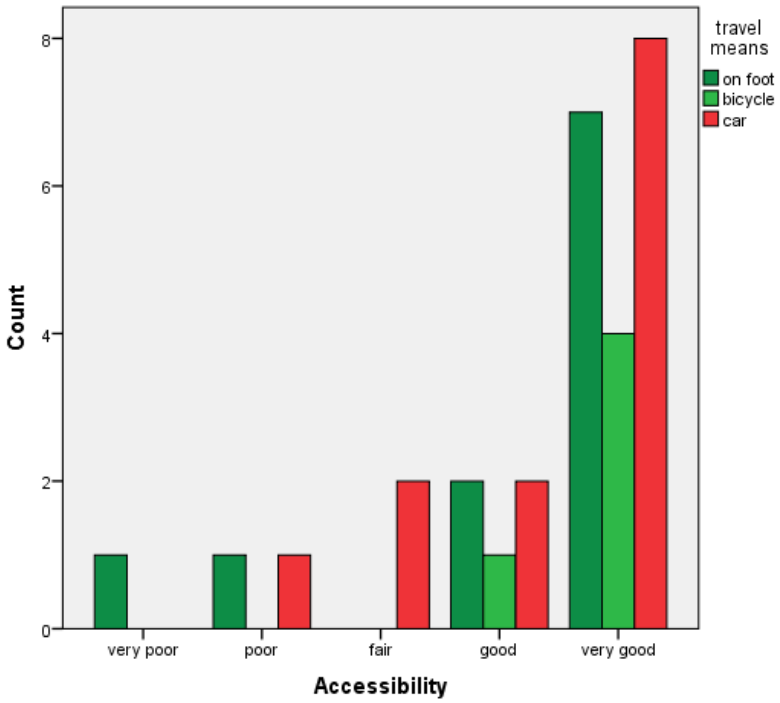


Figure 6.47: Accessibility and travel means among Palace Square respondents

Municipality Square

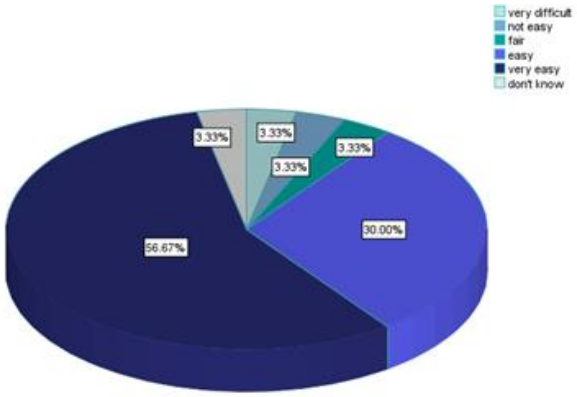


Figure 6.48: Accessibility of Municipality Square

Figure 6.49: Point of origin of trips to Municipality Square

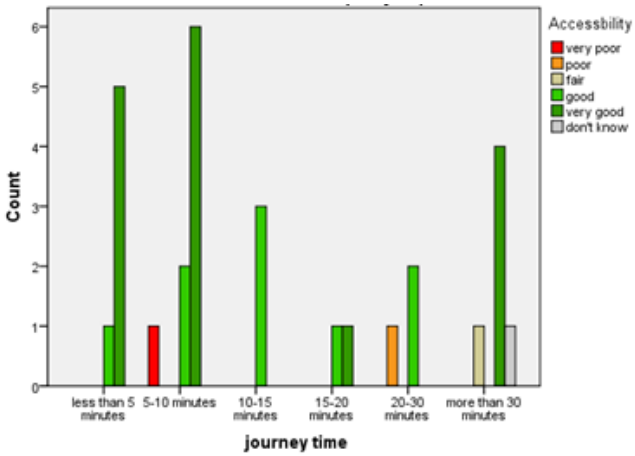


Figure 6.50: Accessibility and journey time relationship among Municipality Square respondents

Figure 6.51: Municipality Square respondents' area of residence

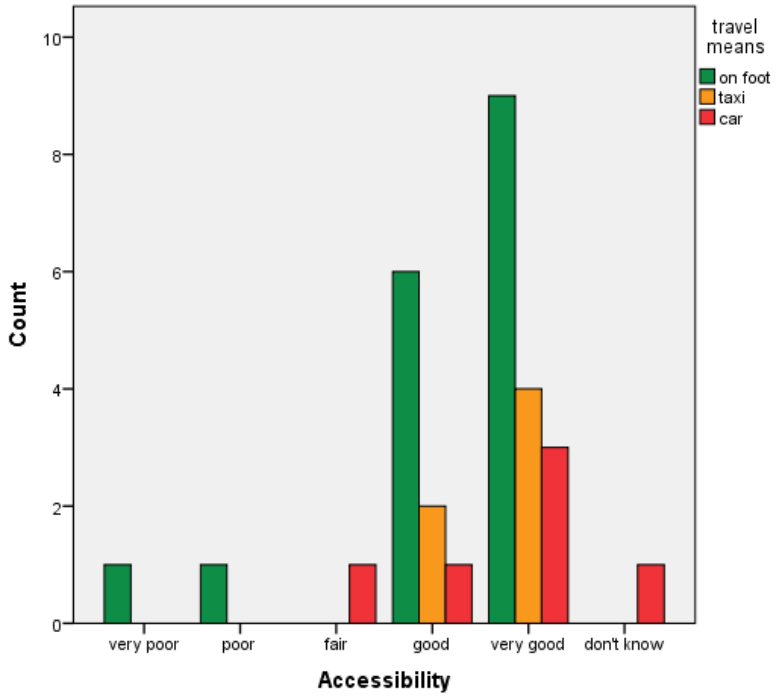


Figure 6.52: Accessibility and travel means among Municipality Square respondents

Ministries Plaza

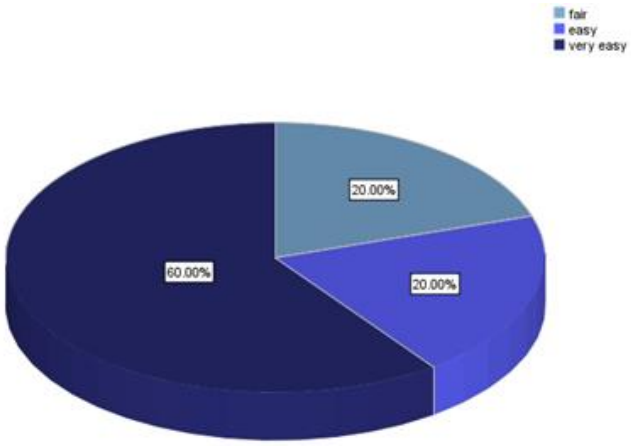


Figure 6.53: Accessibility of Ministries Plaza

Figure 6.54: Point of origin of trips to Ministries Plaza

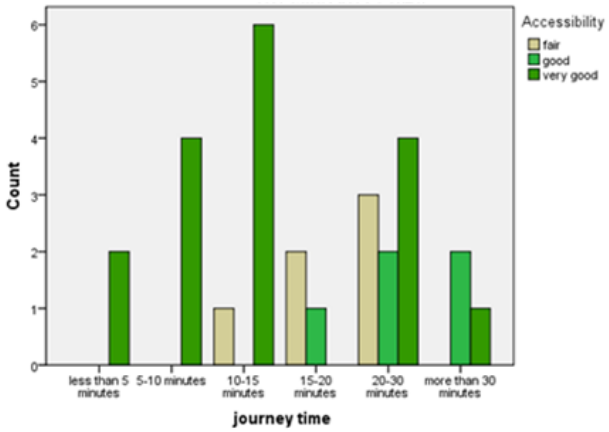


Figure 6.55: Accessibility and journey time relationship among Ministries Plaza respondents

Ministries Plaza

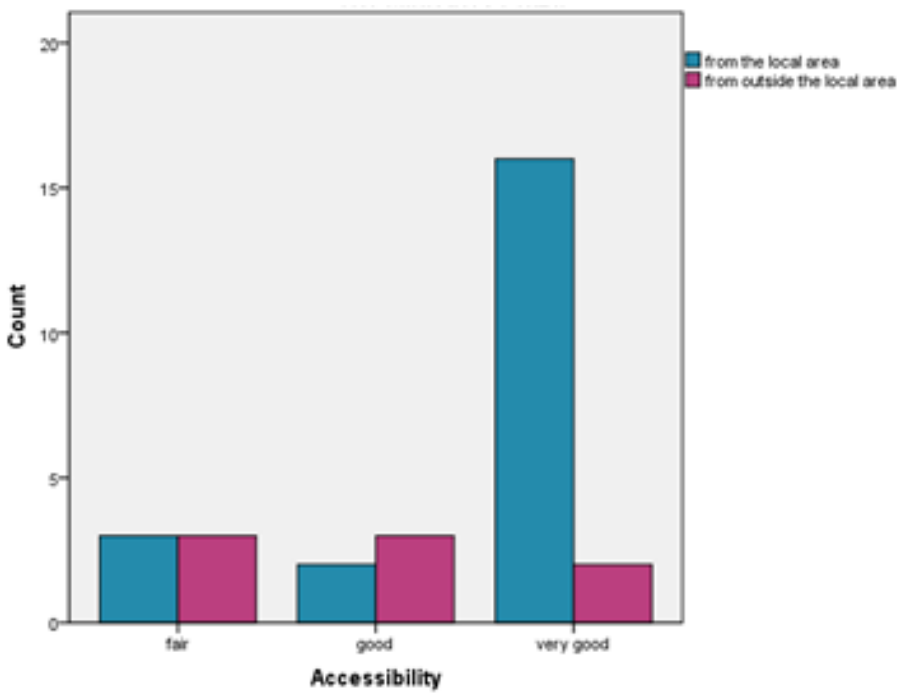


Figure 6.56:Ministries Plaza respondents' area of residence

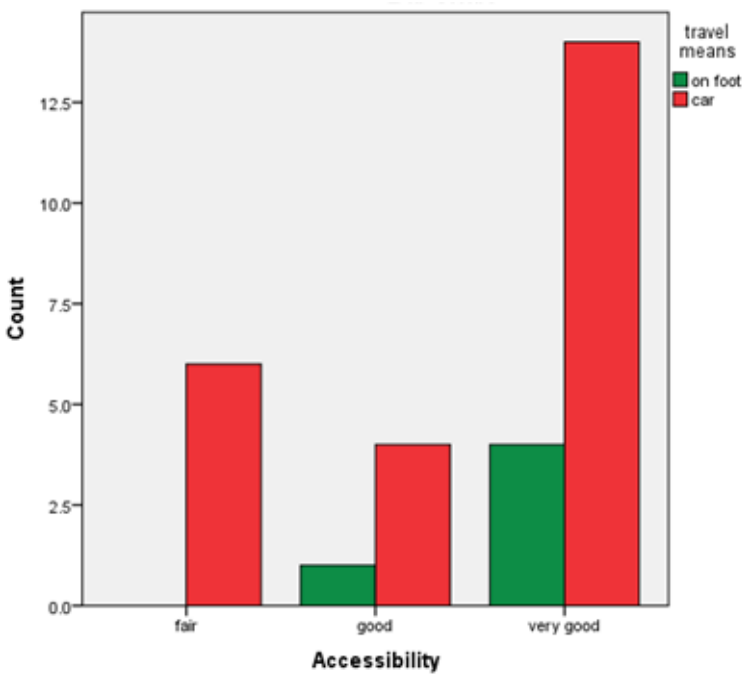


Figure 6.57: Accessibility and travel means among Ministries Plaza respondents

Muttrah Plaza

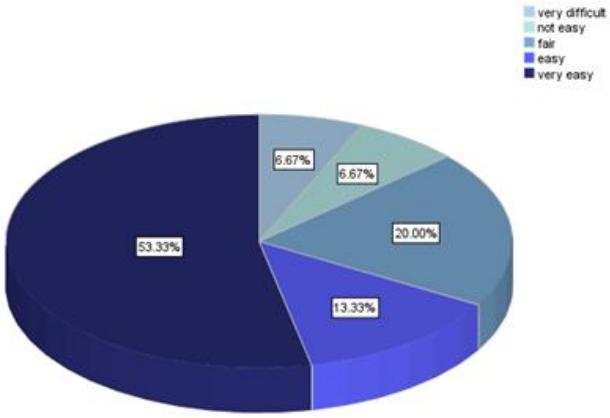


Figure 6.58: Accessibility of Muttrah Plaza

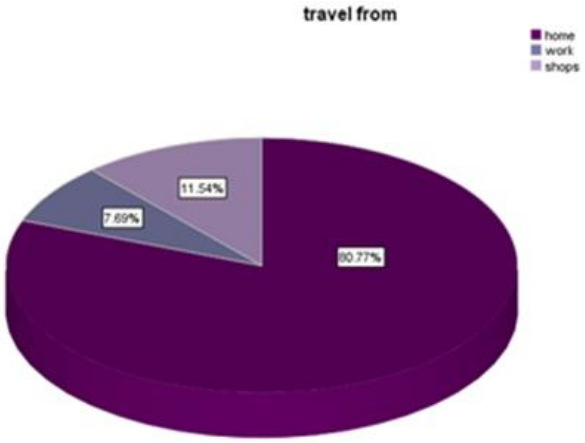


Figure 6.59: Point of origin of trips to Muttrah Plaza

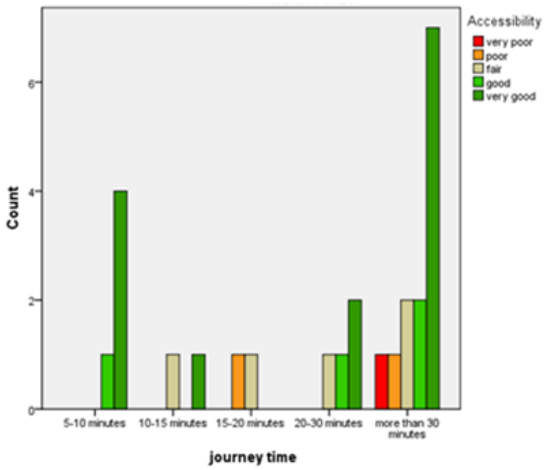


Figure 6.60 Accessibility and journey time relationship among Muttrah Plaza respondents

Muttrah Plaza

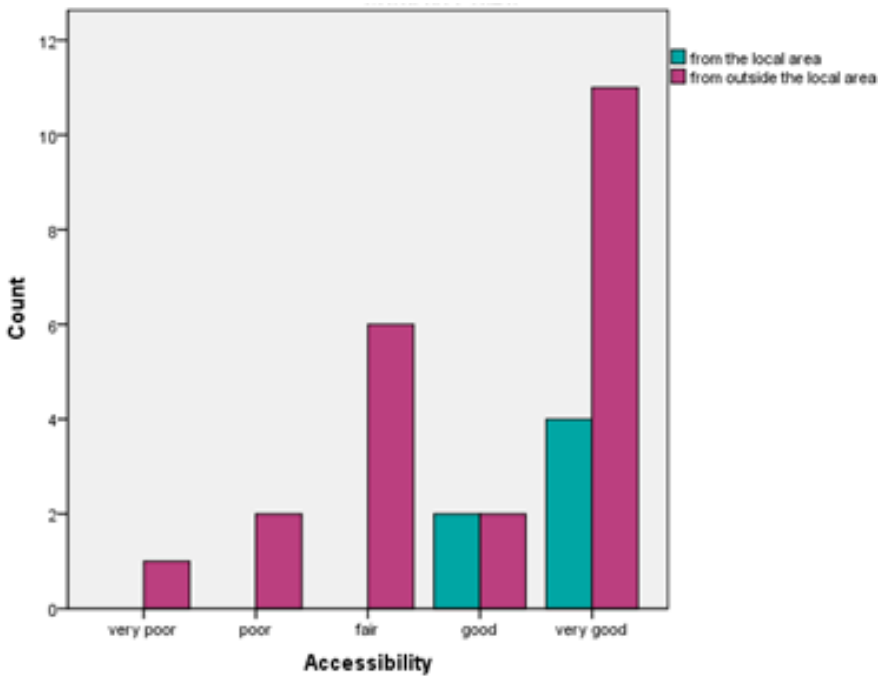


Figure 6.61: Muttrah Plaza respondents' area of residence

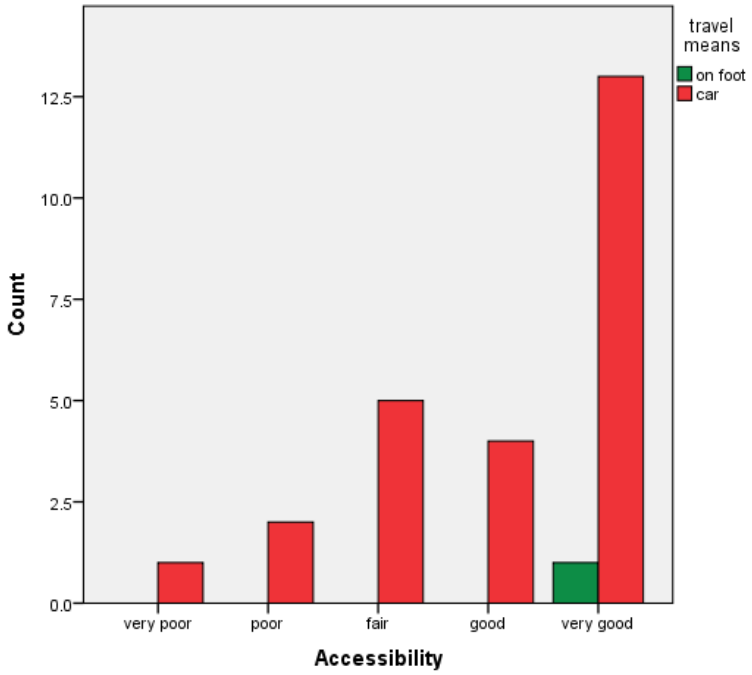


Figure 6.62: Accessibility and travel means among Muttrah Plaza respondents

6.3. Contribution of the case study spaces to the city according to users

Strong positive relationships were shown between designs of the spaces, making a good impression of the space and contribution to the urban character of Muscat as a city.

6.3.1. Space Identity and urban character

Over 70% of the participants thought that the case studies represent a very good/good characterisation of Muscat's identity and character. The majority of the participants (as shown in Figure 6.63) thought that the case studies do have a distinctive local character and contribute to pride in the city. The Palace Square has the highest rate followed by Ministries Plaza, Muttrah Plaza and the Municipality Square respectively. Although the Palace Square is the most recently built, it recorded the highest rate in contributing to the urban structure as a city land mark and in making a very good impression (as in Figure 6.64). This is due to its unique design and specific royalty and historical context, as mentioned earlier in Chapter 4. Next is the Ministries Plaza; users found it contributes to the setting of the city and also has good appearance and design. Muttrah plaza, however, was given the lowest rating for its design and its contribution to the urban character of the city (see Figure 6.65). However, compared to the Municipality Square, Muttrah Plaza made a higher impression due to its natural beauty and spectacular view of the corniche and old Muttrah market. On the other hand, the responses in Municipality Square were higher for the design and contribution to the city character because, unlike Muttrah Plaza, it represents a national symbol, as discussed in Chapter 4.

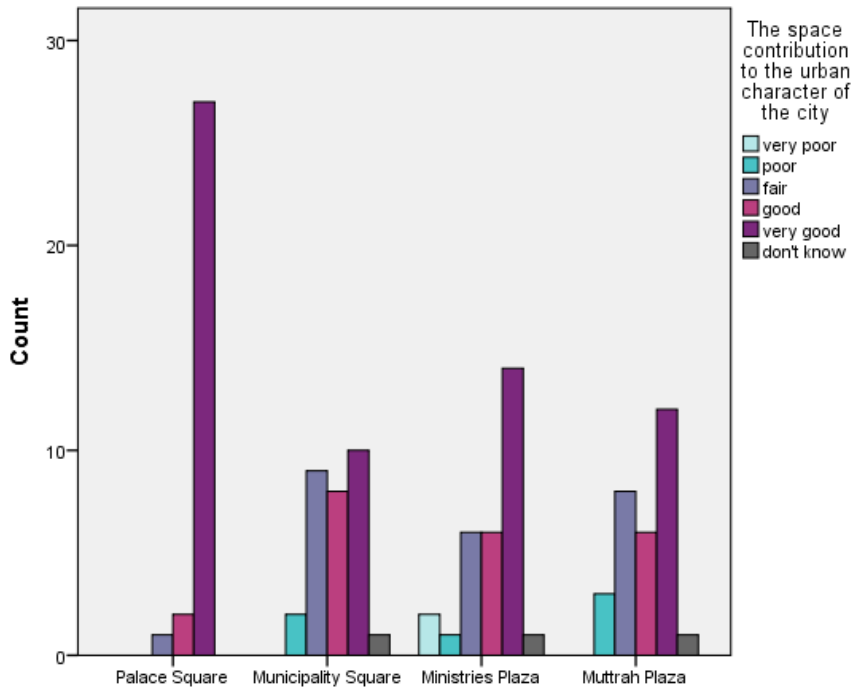


Figure 6.63: Case study spaces as landmark and contribution to the city

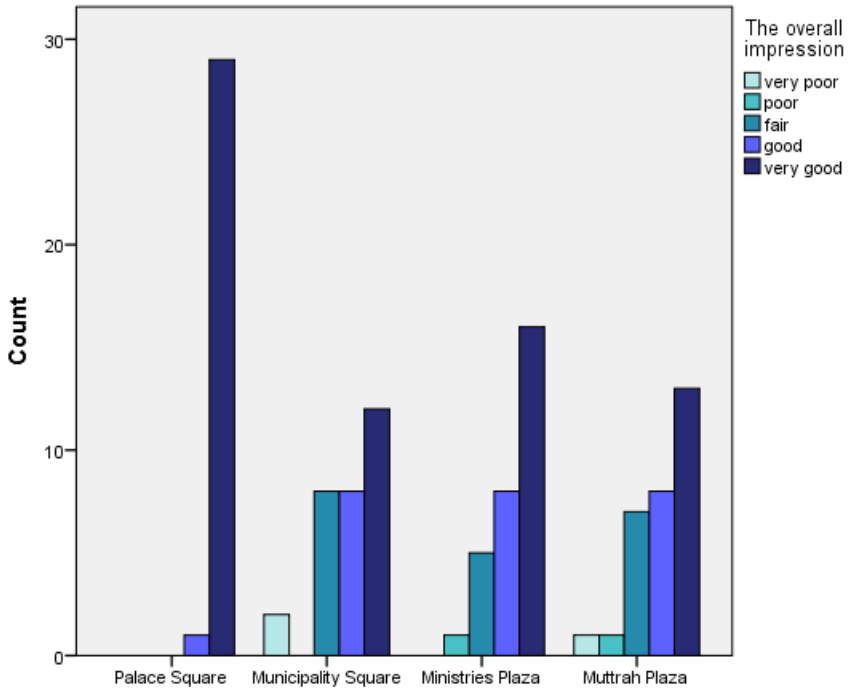


Figure 6.64:Overall impression of the case study spaces

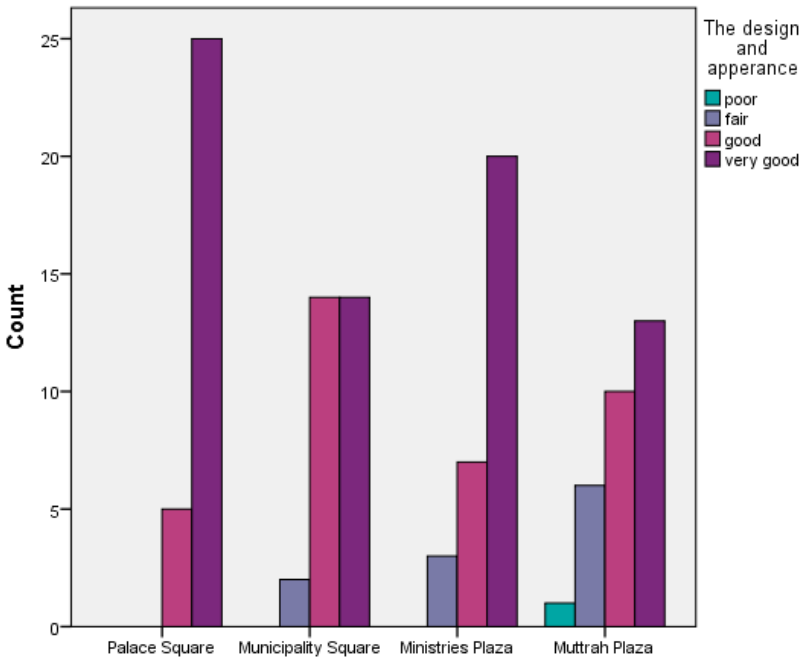


Figure 6.65: The design and appearance of the case study spaces

6.3.2. Urban context

The urban context of the public space is essential in making places. To evaluate the space context, participants were asked about their journey to the space and to what extent they found the space linked to its surroundings. The majority of the participants preferred to use the spaces from home most of the time. In all cases the field data shows the shorter the journey, the more frequent is the use of the space.

Palace Square

In the Palace Square, the shorter the journey the users need to make, the more frequently they come (see Figure 6.66). Since it is a landmark and tourist destination, around one third of the participants travelled for more than 20 minutes. Over twice that travelled for no more than 10 minutes (see Figure 6.67). As mentioned in Chapter 4, the urban fabric of the square includes the royal palace, government

buildings and residential neighbourhoods. Walking or cycling in the case of younger users were the means used by daily and weekly users to reach the square (see Figure 6.68). However, the longer the journey, the lower the frequency of usage is. For those not visiting frequently, cars were the only way mentioned to get to the square. In terms of the integration to the surroundings, 40% and 23.33% of the participants said that the square has very good and good linkage and integration to the surrounding amenities respectively (see Figures 6.69 and 6.70). Users who had travelled longer found it less linked to the surrounding amenities, perhaps because their requirements differ from the local community's. They probably expected more linkage to facilities to which they would move around.

Users from different age groups were equally satisfied by the design and the overall appearance of the space (see Figure 6.71). Users with qualifications above high school level found the design good; however, they were less impressed than those with lower qualification (Figure 6.72). Moreover, Figure 6.73 shows that all the participants who thought the design was fair were Omani. Data indicates that all female users were very satisfied with the design whereas male users were more critical, as shown in Figure 6.74.

The Palace Square

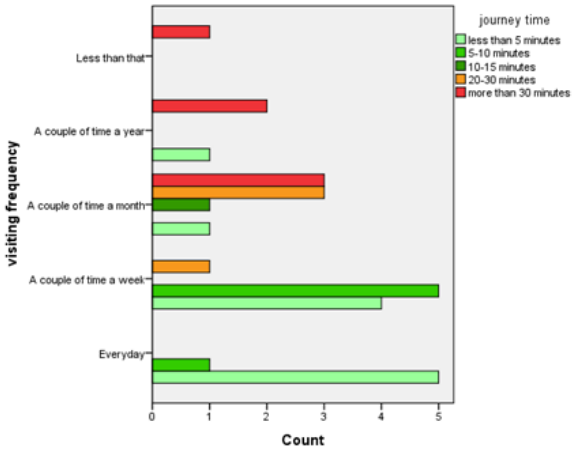


Figure 6.66 Journey time and usage frequency relationship in Palace Square

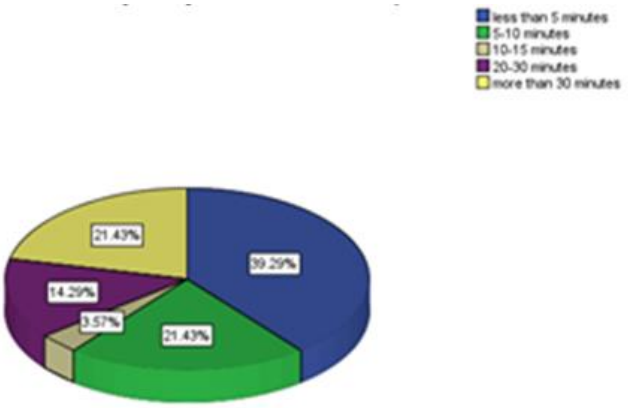


Figure 6.67: Respondents' journey time in the Palace Square

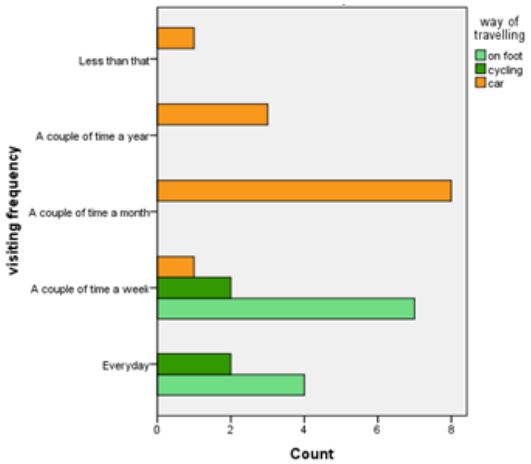


Figure 6.68: Respondents' travelling means in the Palace Square.

The Palace Square

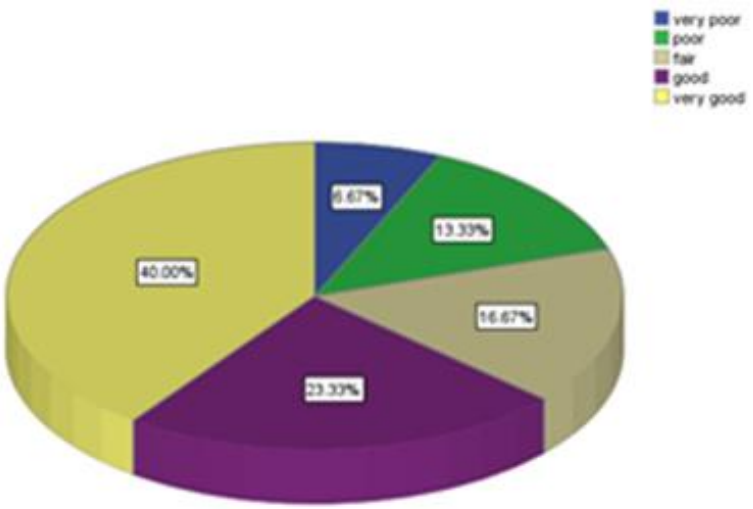


Figure 6.69: Contribution to the surrounding amenities in the Palace Square.

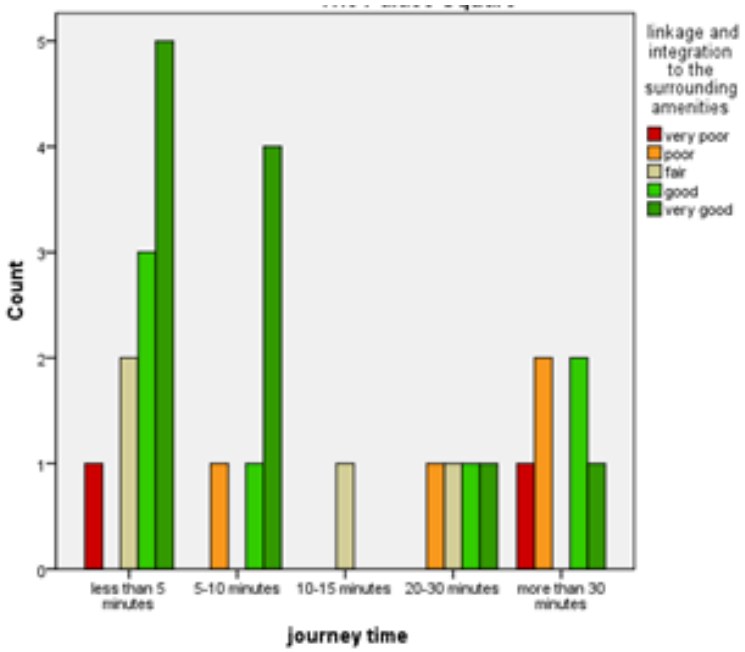


Figure 6.70: Linkage to the surroundings and journey time relationship in the Palace Square.

The Palace Square

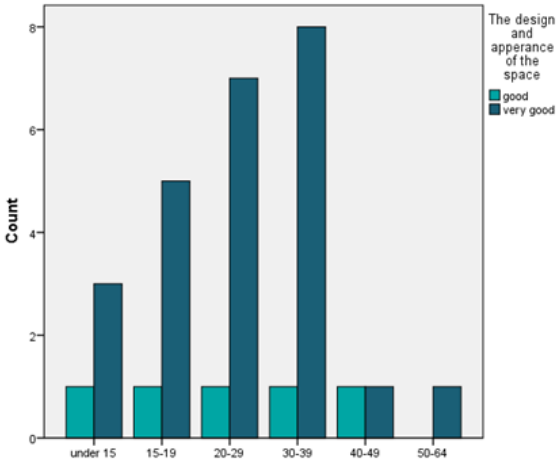


Figure 6.71: The evaluation of the design and appearance of the Palace Square from different age groups

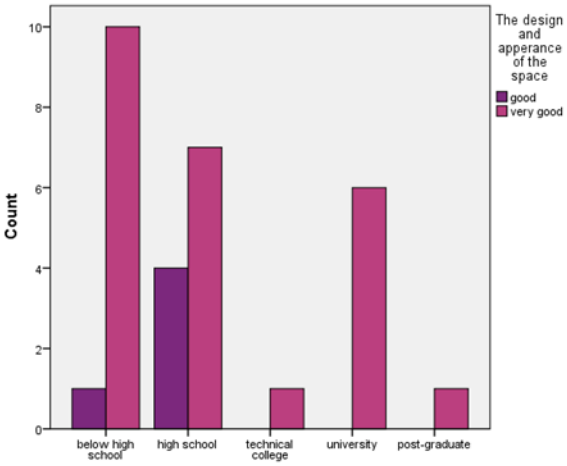


Figure 6.72: The evaluation of the design and appearance of the Palace Square from different qualifications

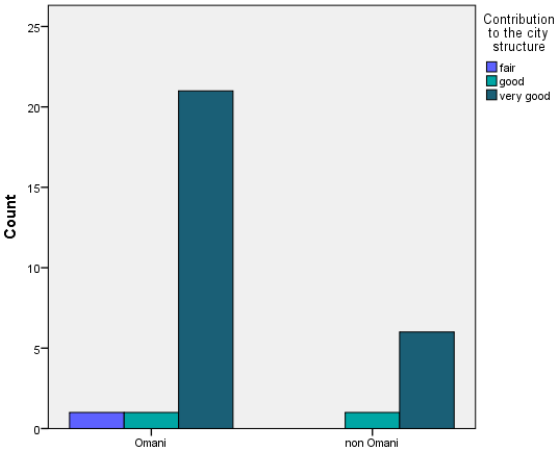


Figure 6.73: The evaluation of the contribution of the Palace Square to the city structure from Omani and non-Omani respondents

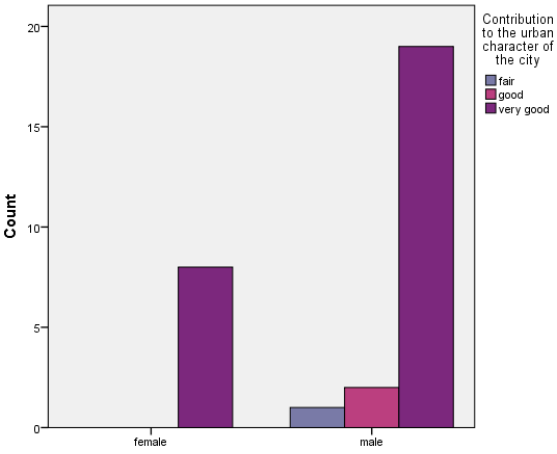


Figure 6.74: The evaluation of the contribution of the Palace Square to the city structure in terms of respondents' gender

Municipality Square

Figure 6.75 illustrates a variety of users' journey lengths in the Municipality Square on daily and weekly bases. Over half of the users needed less than 15 minutes to reach the square (see Figure 6.76). As shown in Figure 6.77, frequent users use different travel means to get to the square. Users with longer journeys used either car or public transport. Taxis were used by teenagers and expatriate labourers since they probably do not own a car. The majority of the participants found the square well integrated with the urban fabric (see Figure 6.78). However, nearly half of users with short journey were unsatisfied with the linkage between the square and its context (see Figure as in Figure 6.79).

The less satisfied users regarding the design of the space were all under the age of 30, as is illustrated in Figure 6.80. There was no clear relationship between users' educational qualification, or their gender, and their perception of the square, as is shown in Figures 6.81 and 6.82. However, there were strong differences in perception between Omani and non-Omani. Omani users were far less satisfied with the design compared to the non-Omani participants (see Figure 6.83).

The Municipality Square

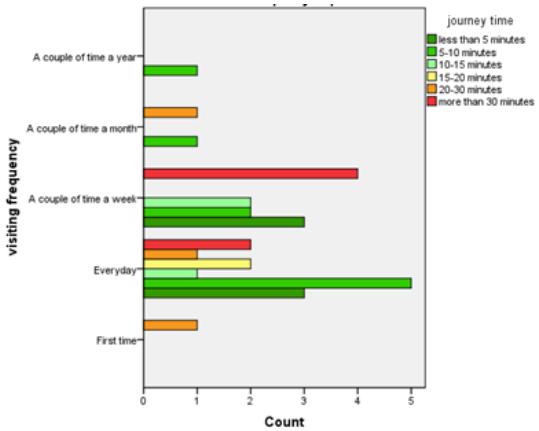


Figure 6.75: Journey time and usage frequency relationship in the Municipality Square

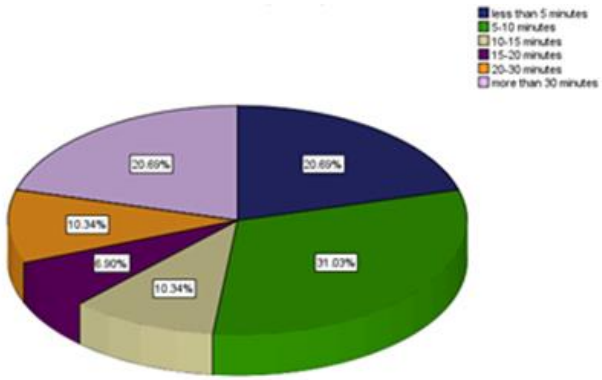


Figure 6.76: Respondents' journey time in the Municipality Square.

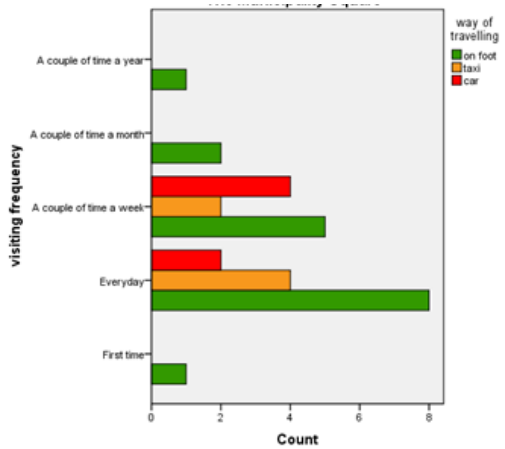


Figure 6.77: Respondents' travelling means in the Municipality Square.

The Municipality Square

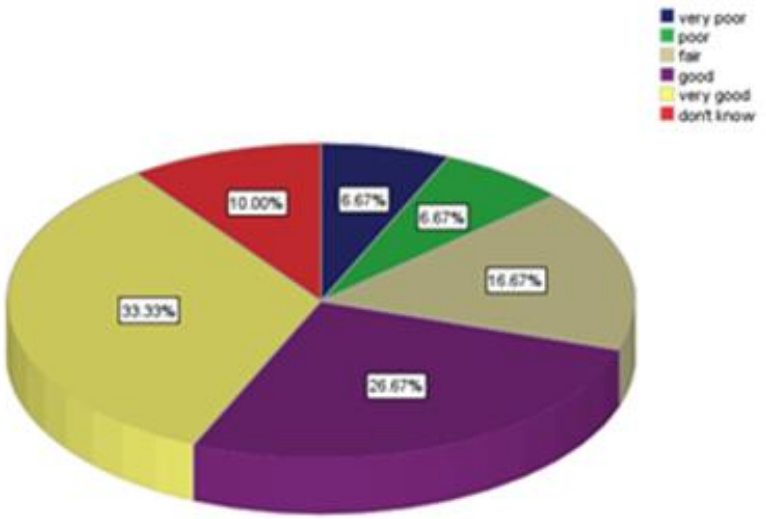


Figure 6.78: The contribution to the surrounding amenities in the Municipality Square.

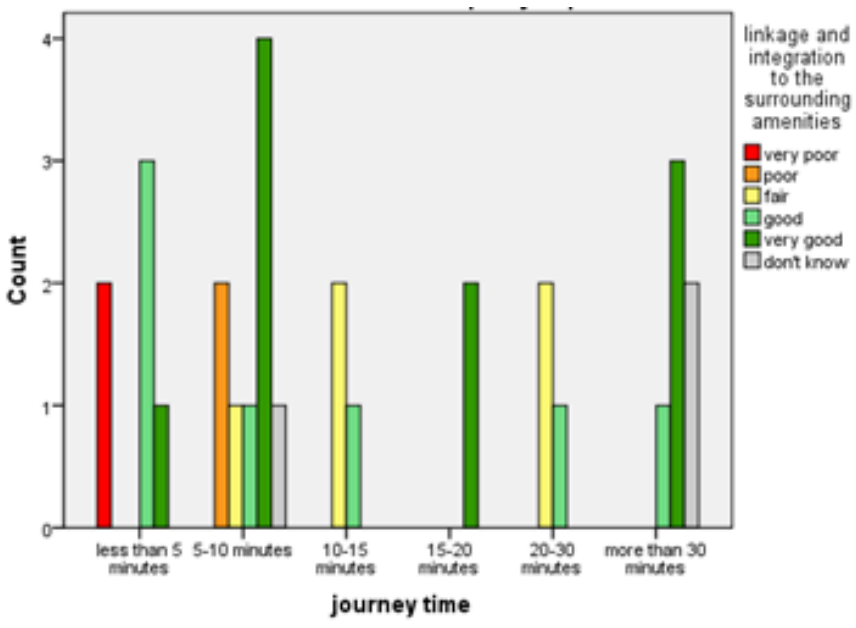


Figure 6.79: Linkage to the surrounding and journey time relationship in the Municipality Square

The Municipality Square

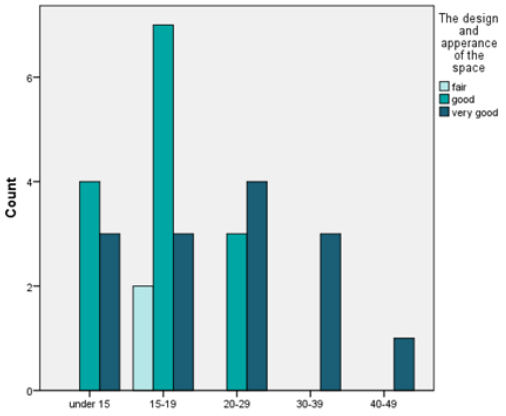


Figure 6.80: The evaluation of the design and appearance of the Municipality Square from different age groups

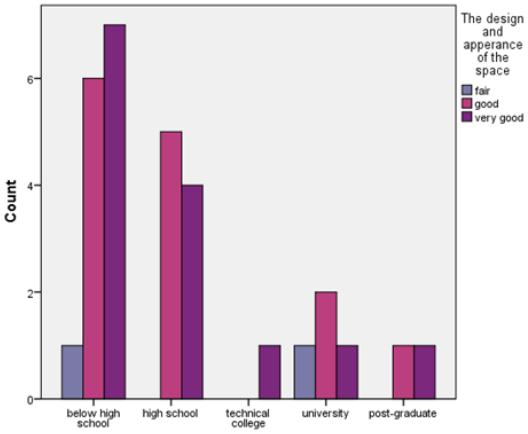


Figure 6.81: The evaluation of the design and appearance of the Municipality Square from different qualifications

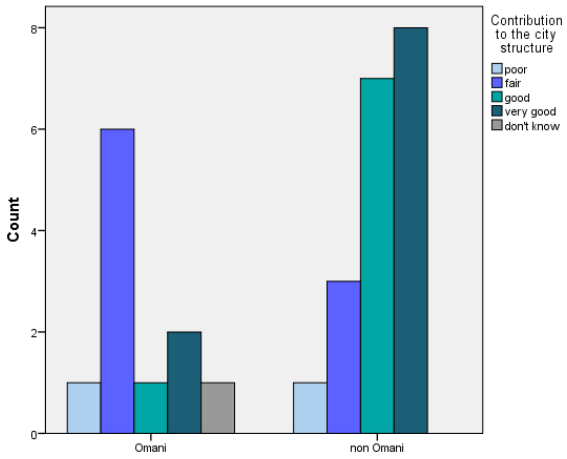


Figure 6.82: The evaluation of the contribution of the Municipality Square to the city structure from Omani and non-Omani respondents

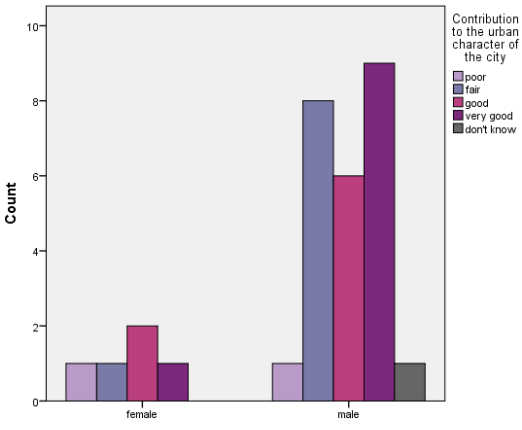


Figure 6.83: The evaluation of the contribution of the Municipality Square to the city structure in terms of respondents' gender

Ministries Plaza

In Ministries Plaza, 53.56% of the users needed more than 15 minutes to reach the plaza, as is shown in Figure 6.85. The plaza's location within the Ministries district is not surrounded by residential neighbourhoods, and the absence of open spaces within the nearer neighbourhoods made users travel longer. The field data shows frequent users with varied journey length (see Figure 6.84). Due to the type of urban fabric, the car is the dominant means of travel. The majority of the users, as illustrated in Figure 6.86, used cars and only part of the daily and the weekly users were on foot. As shown in Figure 6.87, 23% of the participants were unsatisfied with the plaza's integration to the urban fabric. This is the highest percentage of unsatisfied among all the case studies. Users with different journey times criticised its integration to the urban fabric, as shown in Figure 6.88. This is probably because of lack of diversity in the surrounding context in the first place, which required use of a car to get to the nearest amenity.

Users under the age of 30 were generally more satisfied with the design of the plaza compared to the older users (see Figure 6.89). Figure 6.90 shows no clear correlation between the users' qualifications and their perception of the design of the space. Users with high level qualifications were more pleased with the design than those less qualified. Yet the majority were pleased with it. Unlike with the Municipality Square, the Omani participants were more impressed by the design compared to the non-Omanis (Figure 6.91). Furthermore, female were less satisfied then male users (see Figure 6.92).

Ministries Plaza

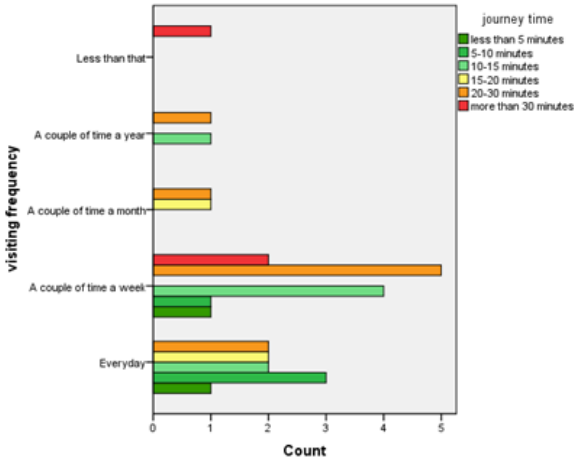


Figure 6.84: Journey time and usage frequency relationship in the Ministries Plaza.

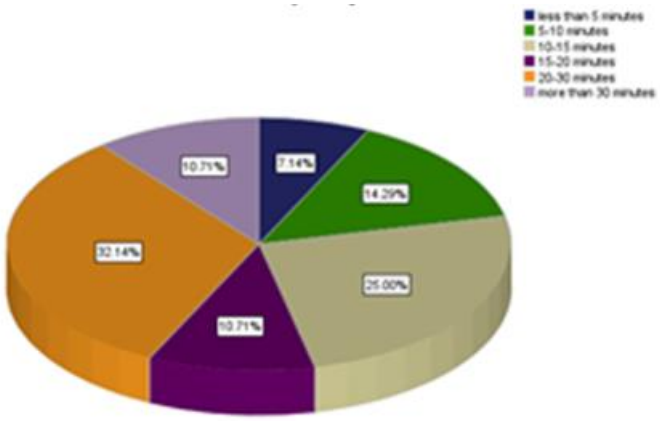


Figure 6.85: Respondents' journey time in the Ministries Plaza

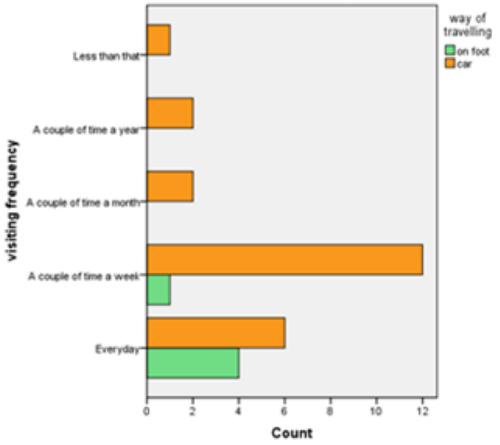


Figure 6.86: Respondents' travelling means in the Ministries Plaza

Ministries Plaza

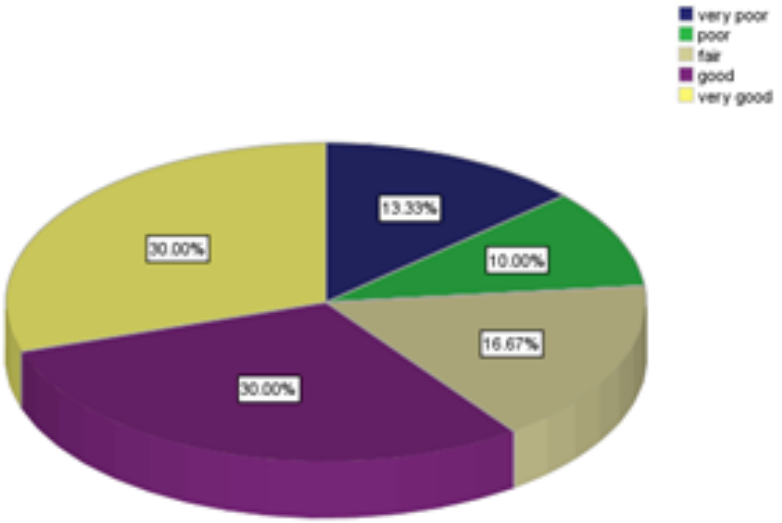


Figure 6.87: Contribution to the surrounding amenities in the Ministries Plaza.

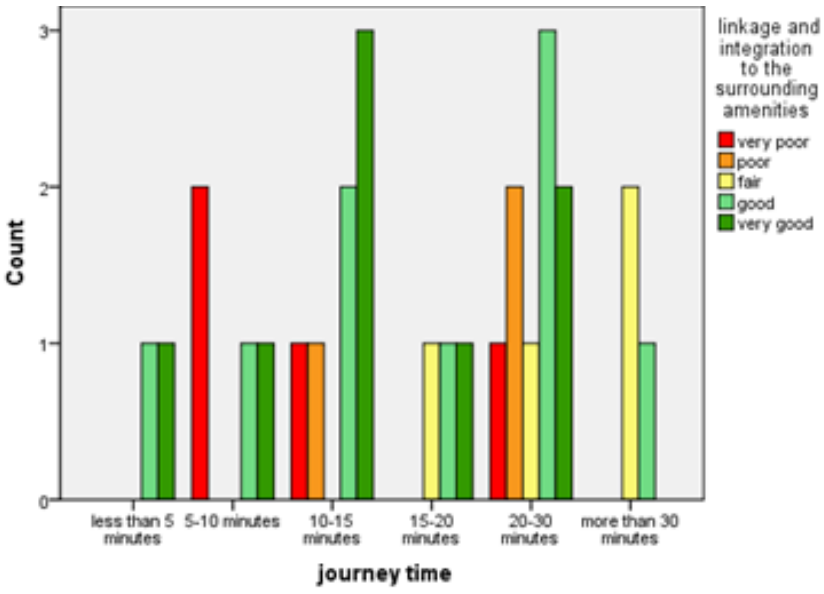


Figure 6.88: Linkage to the surrounding and journey time relationship in the Ministries Plaza.

Ministries Plaza

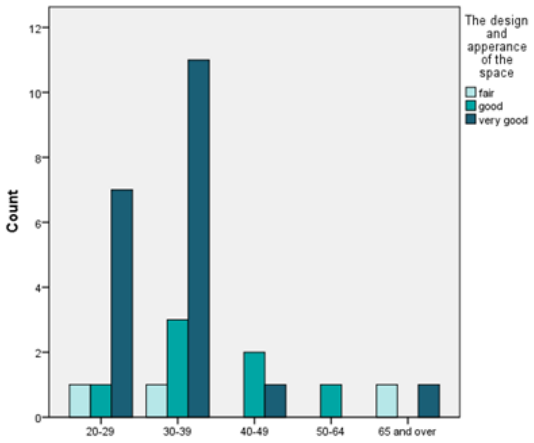


Figure 6.89: The evaluation of the design and appearance of the Ministries Plaza from different age groups

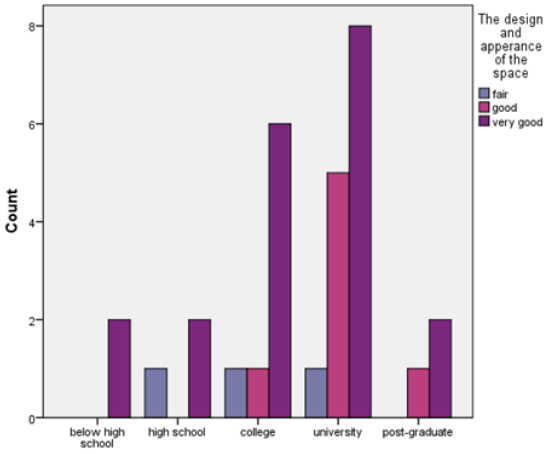


Figure 6.90: The evaluation of the design and appearance of the Ministries Plaza from different qualifications

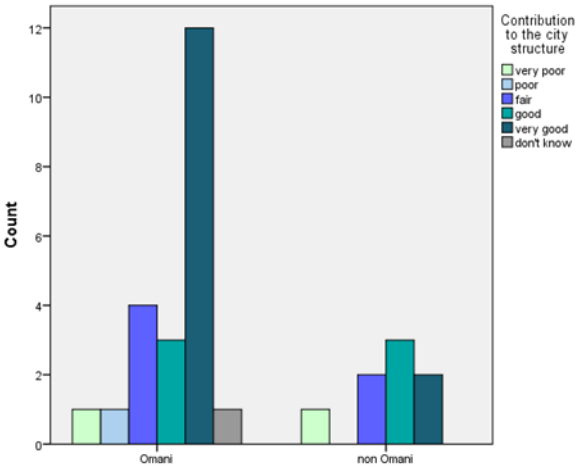


Figure 6.91: The evaluation of the contribution of the Ministries Plaza to the city structure from Omani and non-Omani respondents

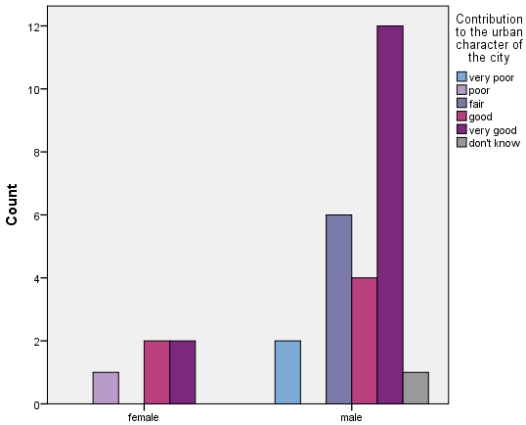


Figure 6.92: The evaluation of the contribution of the Ministries Plaza to the city structure in terms of respondents' gender

Muttrah Plaza

Over 70% of the participants in Muttrah Plaza said they usually travel for more than 15 minutes, as illustrated in Figure 6.94. The majority of users travelled long and did not frequently use the plaza, as shown in Figure 6.93. The car is the major means to reach the plaza. This is probably, as mentioned in Chapter 4, due to its location isolated from the mixed use fabric and its character as a natural beauty spot and next to a historical market, which makes it a destination for many residents and tourists. This could be the embedded reason behind having more users from a far distance. Although there is safe street crossing at the souq, only one third of daily users walked (see Figure 6.95). This is because the linked walkway is literally a street side which make it less convenient to use. Nearly half of the participants were not happy with the plaza's linkage with the surroundings (see Figure 6.96). Unsatisfied users were those with the shortest and the longest journey time, as shown in Figure 6.97. They thought there is no proper linkage with the surroundings through safe walking paths.

Field work data indicates that users over the age of 50 were more satisfied about the space design compared to those who were younger (Figure 6.98). Users with qualification levels below college were more critical of the design of the plaza compared to the university graduate and post-graduate respondents (Figure 6.99). This plaza has Omani and non-Omani almost equally satisfied about its design (Figure 6.100). Yet, males were far more pleased than females about the space design (Figure 6.101).

Muttrah Plaza

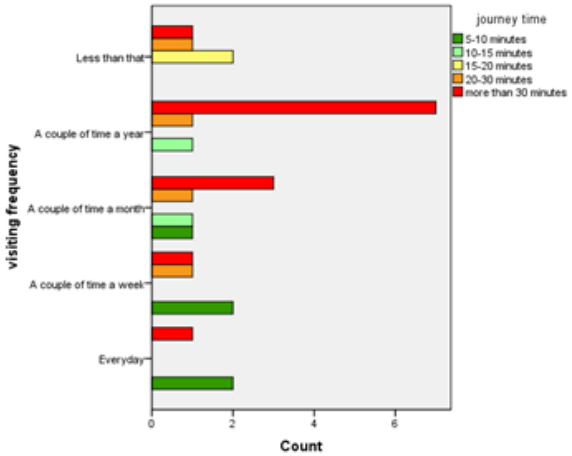


Figure 6.93: Journey time and usage frequency relationship in Muttrah Plaza.

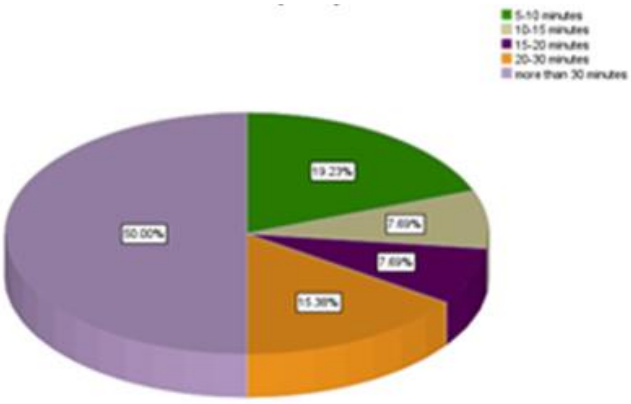


Figure 6.94: Respondents' journey time in Muttrah Plaza.

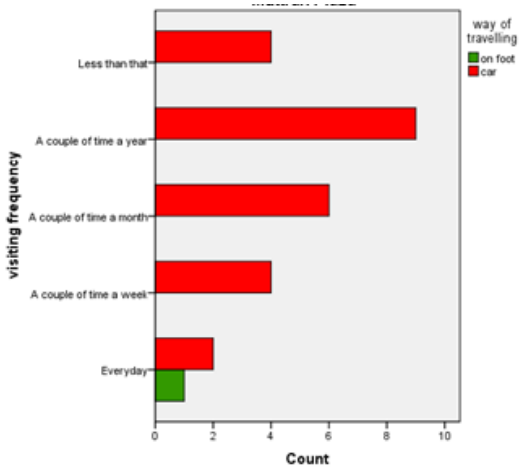


Figure 6.95: Respondents' travelling means in Muttrah Plaza.

Muttrah Plaza

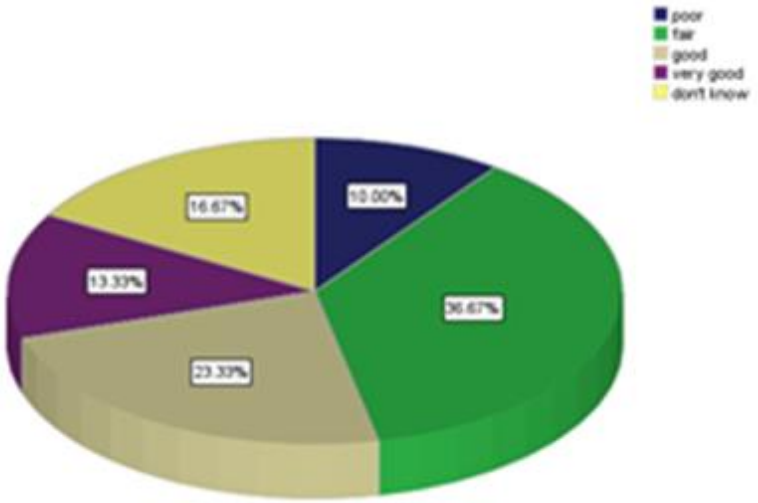


Figure 6.96: Contribution to the surrounding amenities in Muttrah Plaza.

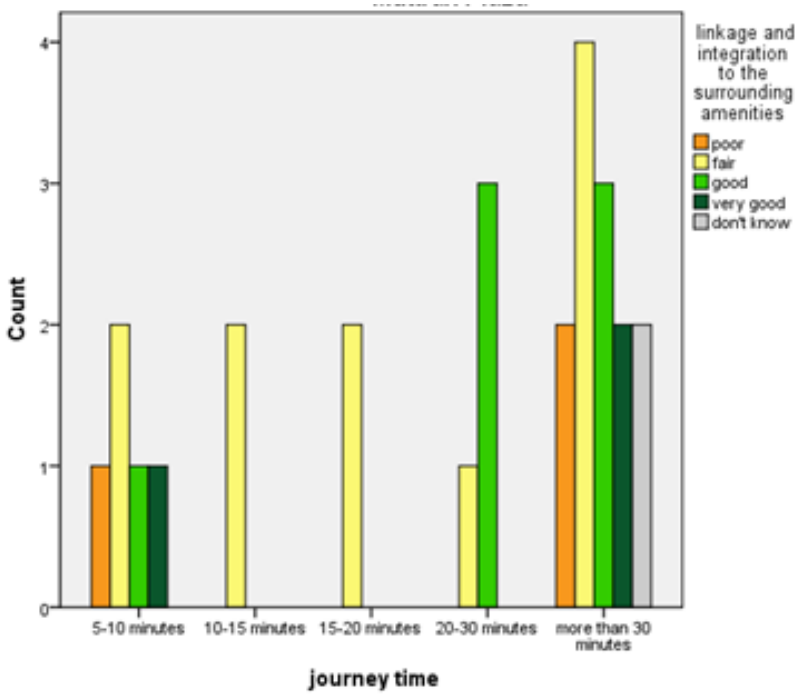


Figure 6.97: Linkage to the surrounding and journey time relationship in Muttrah Plaza.

Muttrah Plaza

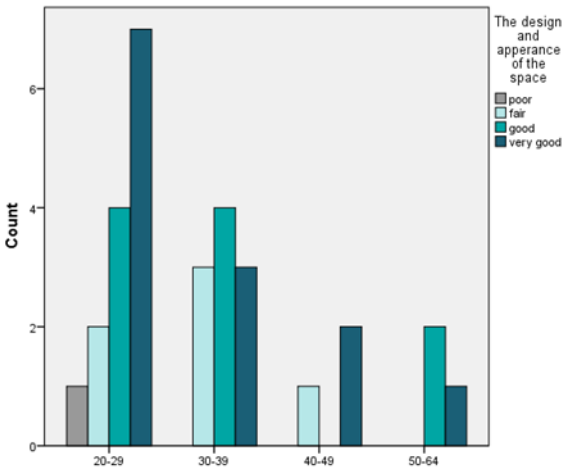


Figure 6.98: The evaluation of the design and appearance of the Muttrah Plaza from different age groups

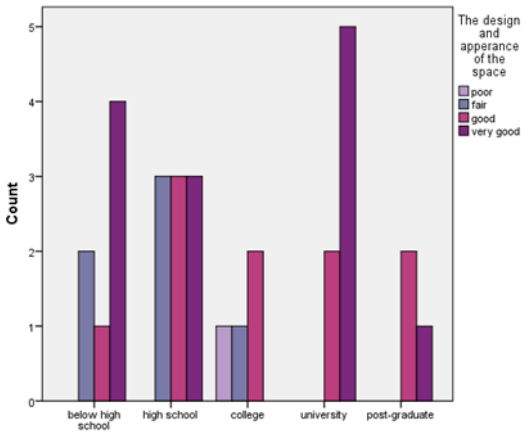


Figure 6.99: The evaluation of the design and appearance of the Muttrah Plaza from different qualifications

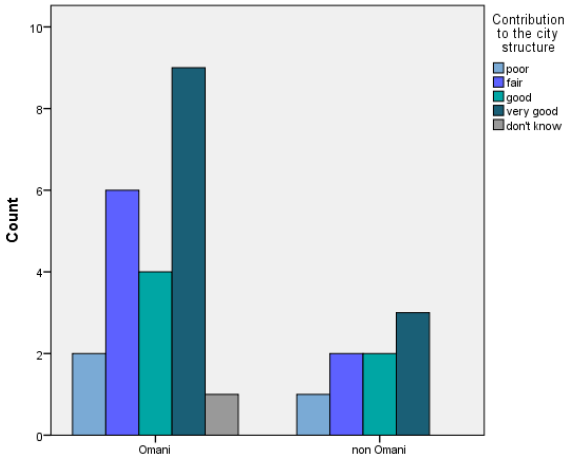


Figure 6.100: The evaluation of the contribution of the Muttrah Plaza to the city structure from Omani and non-Omani respondents

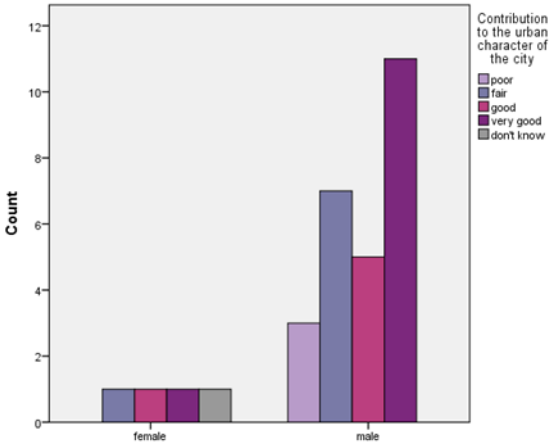


Figure 6.101: The evaluation of the contribution of the Muttrah Plaza to the city structure in terms of respondents' gender

6.3.3. Contribution to the economy

As mentioned earlier in Chapter 2, good design can be significant in economic terms. Participants were asked for their opinion on the impact of the existing design and its contribution to the economy. However, results did not show that there was a perception of there being a strong correlation. Despite the high ratings given to the design and appearance of the case studies (see Figures 6.102, 6.104, 6.106 and 6.108), unexpectedly the responses demonstrate a perception of weakness in the economic contribution of these spaces. This is possibly because, as mentioned in Chapter 5, none of the case studies have a direct connection to commercial activities. As is shown in Table 6.2, a strong linkage was found between respondents' rating of the visitor facilities and of the spaces' contribution to the economy.

Over 60% of participants in the Ministries Plaza thought it has no effect on the surrounding commercial activities (see Figure 6.107). This is the highest rate of negative responses among the case studies, possibly because it is surrounded by official buildings and there are hardly any business activities surrounding it. Despite the perception of good design of the Palace Square, 33.33% participants found its contribution to commercial activities to be very poor or poor, and only 23.33% thought its contribution was good or very good, with the remaining 43.33% considering it was fair (see Figure 6.103). Unlike the Ministries Plaza the square has more diversity in its surroundings, but the economic environment probably is not properly addressed. This is probably due to the lack of visitors' facilities and economic activities. In Municipality Square responses were better than in the previous spaces, with participants who thought its contribution was good or very good exceeding by 13.33% those who thought it was poor or very poor (see Figure 6.105). Muttrah Plaza had the most positive responses, with half the participants stating it is contributing and only 23.4% of respondents finding that it is not enhancing the economy (Figure 6.109). This is possibly because of the range of economic activities surrounding those two case studies. It is clear from the responses that design has to be reinforced with facilities in order to achieve better economic

performance. Participants thought that visitor facilities are missing in these spaces, which does not help attract businesses.

Palace Square

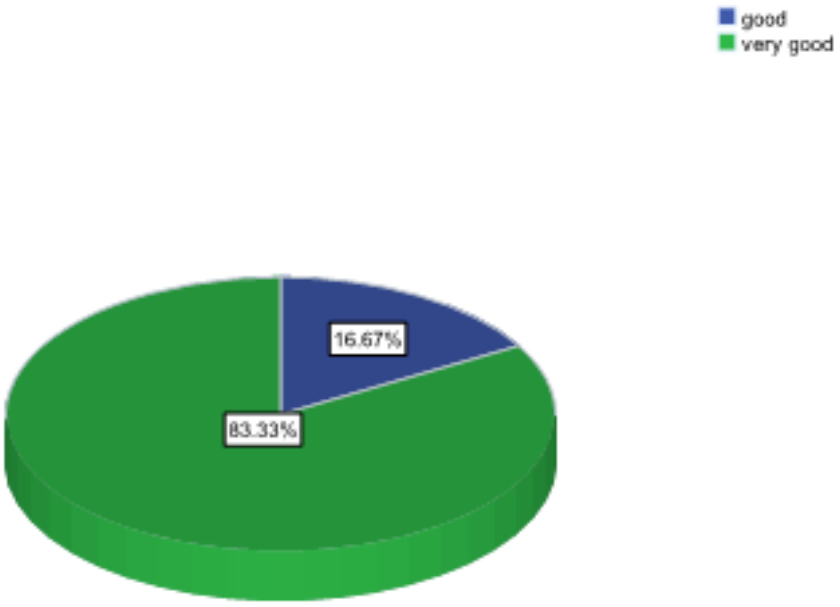


Figure 6.102: Design and appearance of the Palace Square

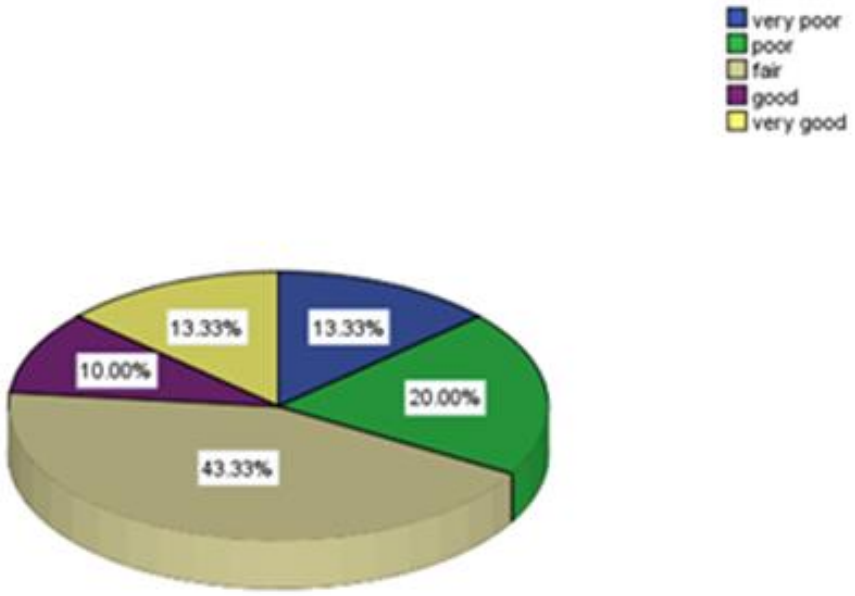


Figure 6.103: The contribution of the space to the surrounding commercial activities in Palace Square

Municipality square

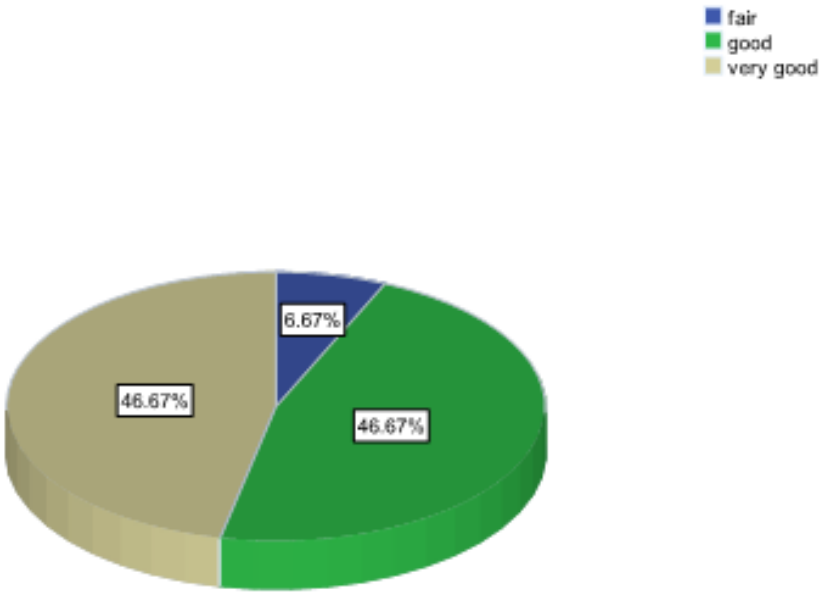


Figure 6.104: Design and appearance of the Municipality Square.

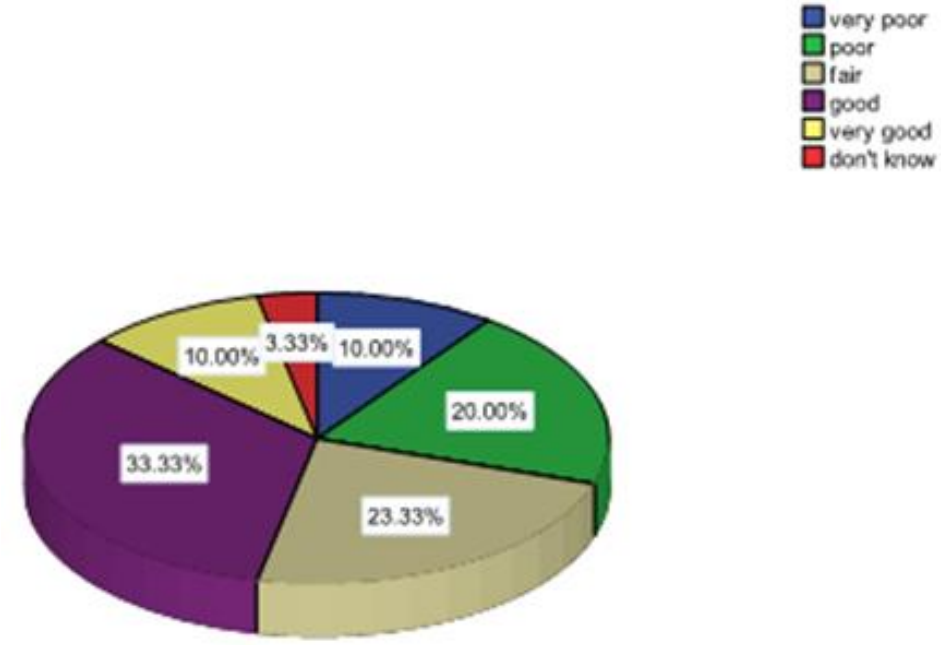


Figure 6.105: The contribution of the space to the surrounding commercial activities in the Municipality Square

Ministries Plaza

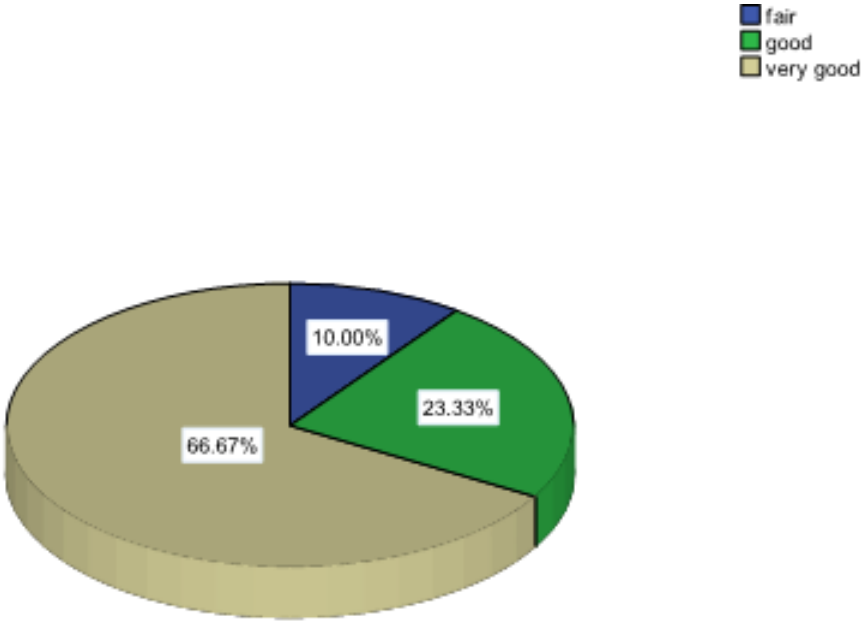


Figure 6.106: Design and appearance of the Ministries Plaza

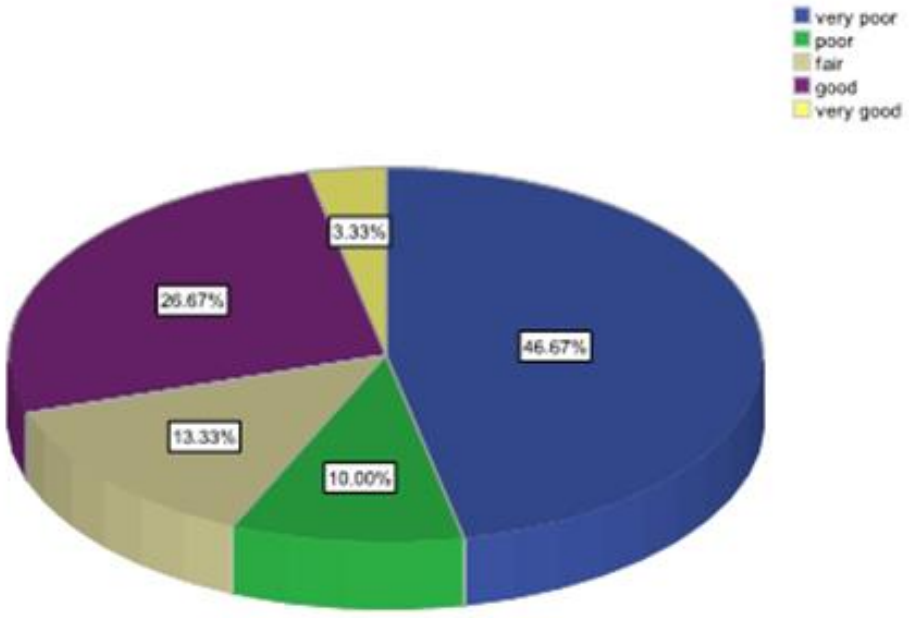


Figure 6.107: The contribution of the space to the surrounding commercial activities in the Ministries Plaza

Muttrah Plaza

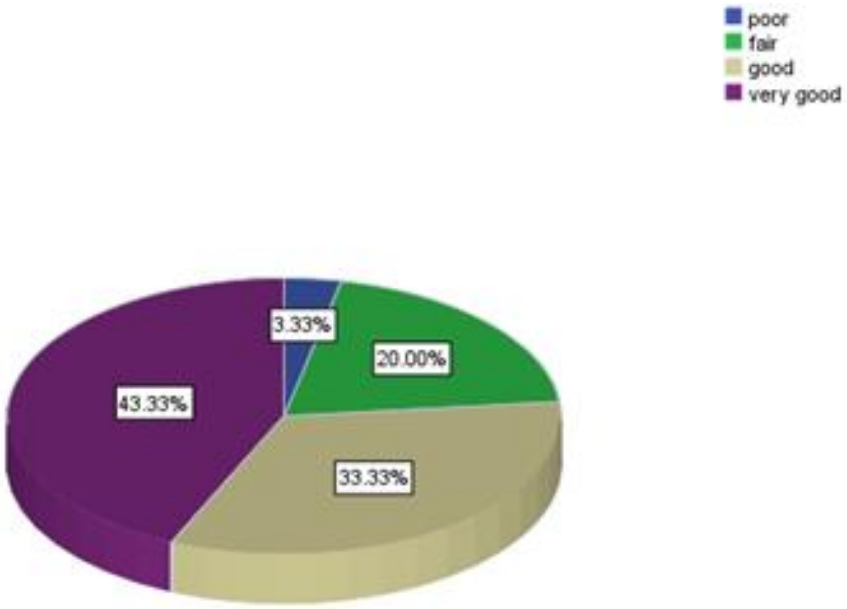


Figure 6.108: Design and appearance of Muttrah Plaza

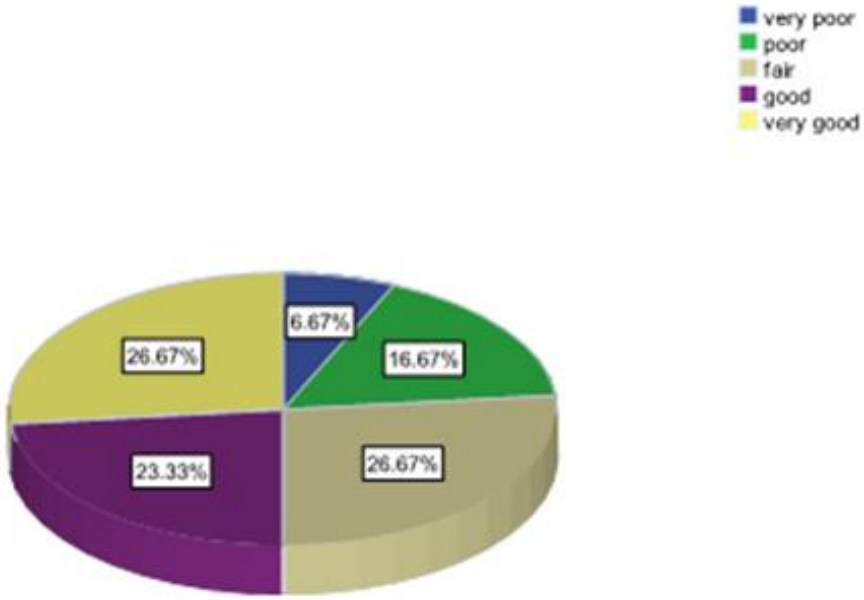


Figure 6.109: The contribution of the space to the surrounding commercial activities in Muttrah Plaza

Availability of visitor facilities	contribution in prosperous the commercial activities around it					
	very poor	**Poor**	**fair**	**good**	**very good**	**don't know**
very poor	51.6%	12.9%	16.1%	9.7%	6.5%	3.2%
poor	4.3%	21.7%	21.7%	34.8%	17.4%	0.0%
fair	10.7%	21.4%	28.6%	25.0%	14.3%	0.0%
good	4.5%	13.6%	40.9%	36.4%	4.5%	0.0%
very good	12.5%	12.5%	31.3%	12.5%	31.3%	0.0%

Table 6.2: Relationship between visitor facilities and contribution of the space to economic activity

6.3.4. Environmental quality

The case studies are common examples of civic areas where hard landscape is dominant, providing focus for pedestrian activity. Micro climate conditions in Muscat play a major role in the usage of public open spaces as mentioned in Section 6.7.2. According to the community representatives, the hot humid weather is a reason for those who are not using the spaces. They claim that people would rather go to indoor spaces for leisure activities than spend their spare time in public open spaces. However, as shown earlier in Table 4.1 in Section 4.2, the weather in Muscat is pleasant between October and April, and evenings are bearable in September and October. This suggests there are other factors that influence the lack of usage by people. The survey was conducted in July and August, which are the warmest months after June, as shown in the Table 4.1 in Chapter 4. Only 10% of the participants preferred summer and evenings most of the time. Due to lack of daytime users, only 6.7% of the questionnaires across the four case study spaces were completed in the mornings and afternoons, whereas evenings were much more lively. 45% of the respondents stated they preferred to use the space in winter, but this did not stop them from using the spaces during the survey period (summer), as shown in Figure 6.111. Moreover, 47.5% of the participants threated the design consideration to the local climate as very poor, poor, or fair, as shown in Figure 6.110, thus indicating that there is scope to improve the conditions that provide thermal comfort, and that may encourage more users. It is clear from the responses that having space

designs dominated by hard landscape discourages day usage of the spaces, especially in the summer. *'More trees'* and *'Shade'* were frequently mentioned in responses to the question on what would encourage them to use the space more often, or to stay for longer.

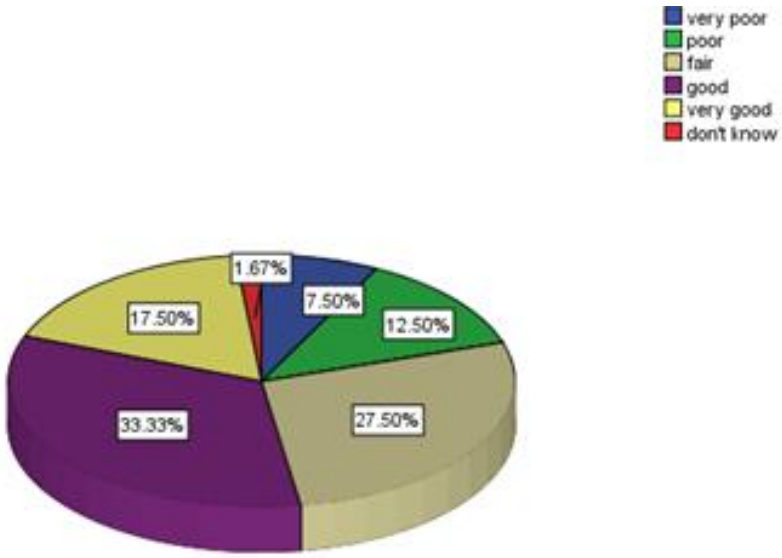


Figure 6.110:Consideration of the local climate in the space design

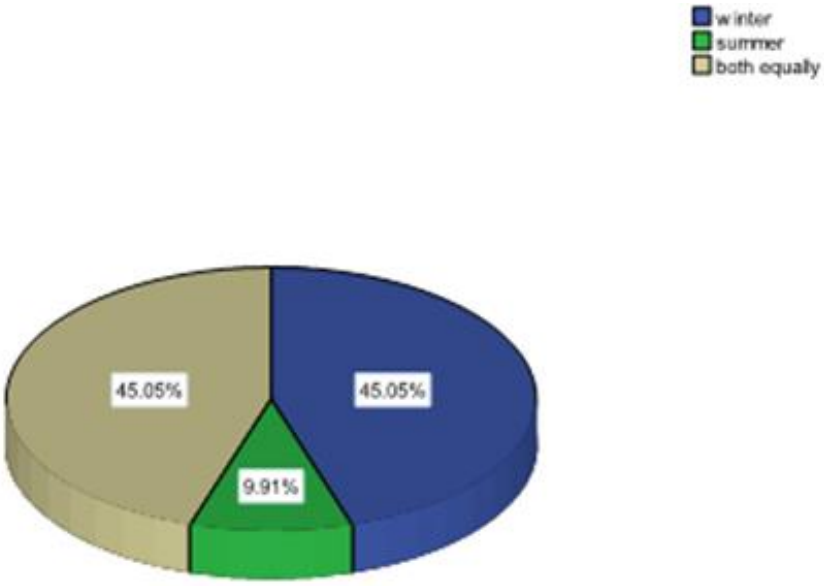


Figure 6.111: Preferred visiting season

6.3.5. Political value

As mentioned earlier in Chapter 4, the selected case studies are the most formal examples in the city. Having all been located next to highways, like in case of the Municipality Square, Ministries Plaza, or streets within highly political value area, like the Palace Square and Muttrah Plaza, raised concerns around the embedded political motivation and value behind the provision and design of these spaces. As illustrated in Figures 6.112 and 6.113, 43.3% of respondents either agreed or strongly agreed with the statement that the authorities provided these spaces mainly as a display of power to satisfy either the officials or the royal court. 16.7% strongly disagrees and only 2.5% disagreed that they were mainly provided as a display of power to satisfy the royal court, whereas 20% were undecided. However, this is a critical question which made 17.5% of participants feel unconfident to answer. Around one third of the total participants thought these spaces were not public-oriented spaces. They thought they are spaces to look at rather than spaces to be used.

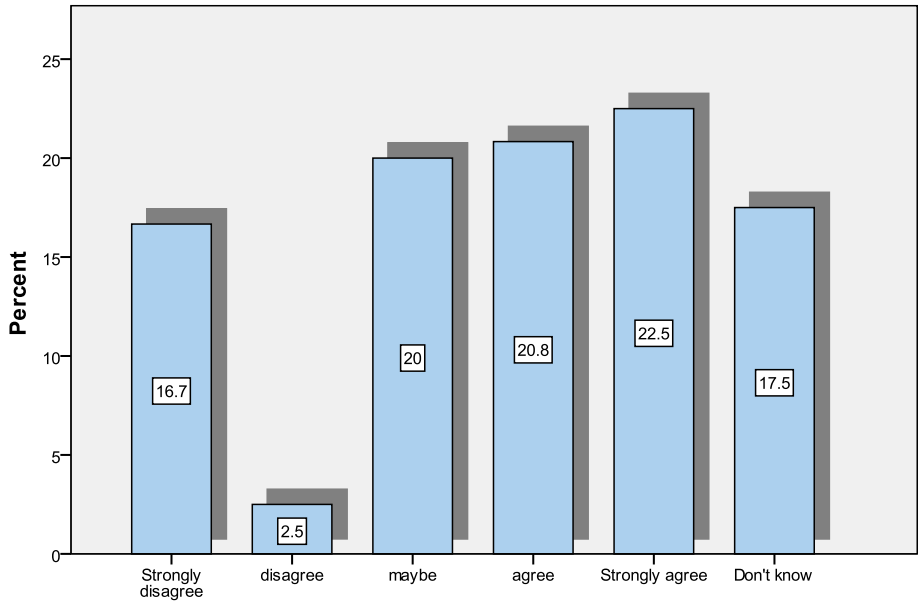


Figure 6.112: Power display priority in providing case study spaces.

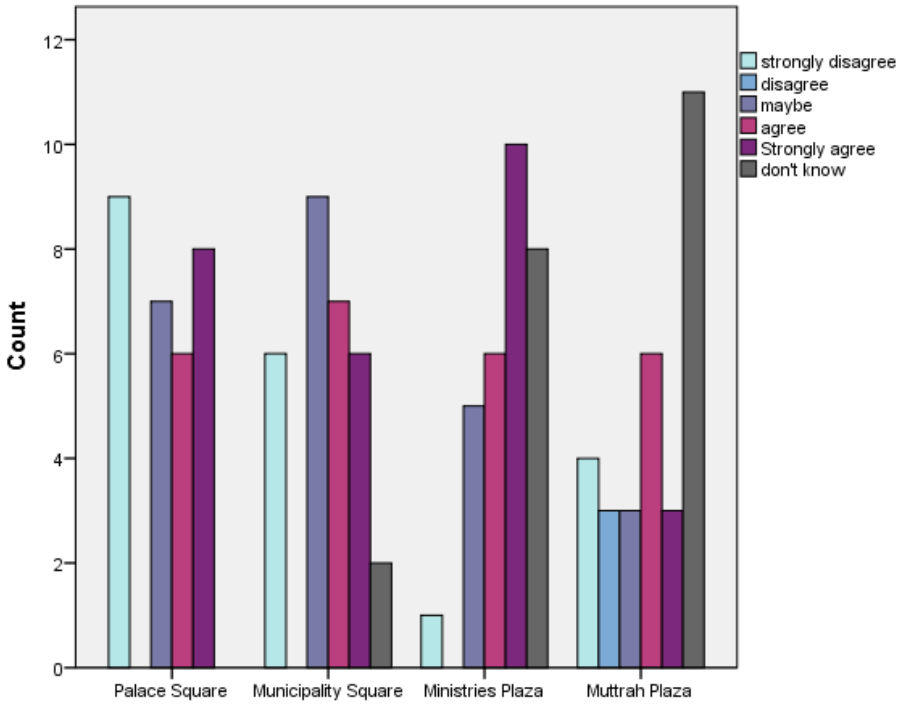


Figure 6.113: Power display priority in providing in each of the case study spaces.

6.4. Safety

Safety is a crucial element in encouraging people to use open spaces. Participants were pleased with the perceived safety, as shown in Figure 6.114. In the Palace Square users were very satisfied with its safety. The majority found it very good and only a few said good. All women participants found it highly safe, as shown in Figure 6.115. This is because it is a royal location with a very high level of security. For those who were less satisfied, this was because of the traffic from the two roads that cross the square. On contrary, the Municipality Square has the lowest safety rate, where 3.33% of the participants said it is poor and 10% very poor – though the predominant views are still very good and good. Female users did not feel quite as safe as males Municipality Square, as shown in Figure 6.116. This is probably because of the large gathering of teenagers and expatriate labourers. Some of the adult users criticised their anti-social behaviour, which includes playing loud music, vandalism, noise nuisance, litter, and dancing. The Ministries Plaza was second in

safety rating, where the lack of a barrier against the highway at one side and the edging street at the other side were the main reasons for lack of satisfaction given by the participants. A few female participants found the plaza fair in terms of safety and a few men thought it is poor (Figure 6.117). Moreover, the field data shows that road-related risks raised the same concerns in Muttrah Plaza. In this respect road-related risk is the only recorded issue for all cases which could be addressed by design. The lowest evaluation of safety issues in this plaza came from male users, as in Figure 6.118. However, the only concern about social behaviour was in Municipality Square. This could be resolved by providing effective control mechanisms in the planning system to respond positively, inclusively and creatively to teenagers' requirements and involving them in the provision process, and ensuring that what is provided reduces unit-behaviour activities (Shaftoe 2008).

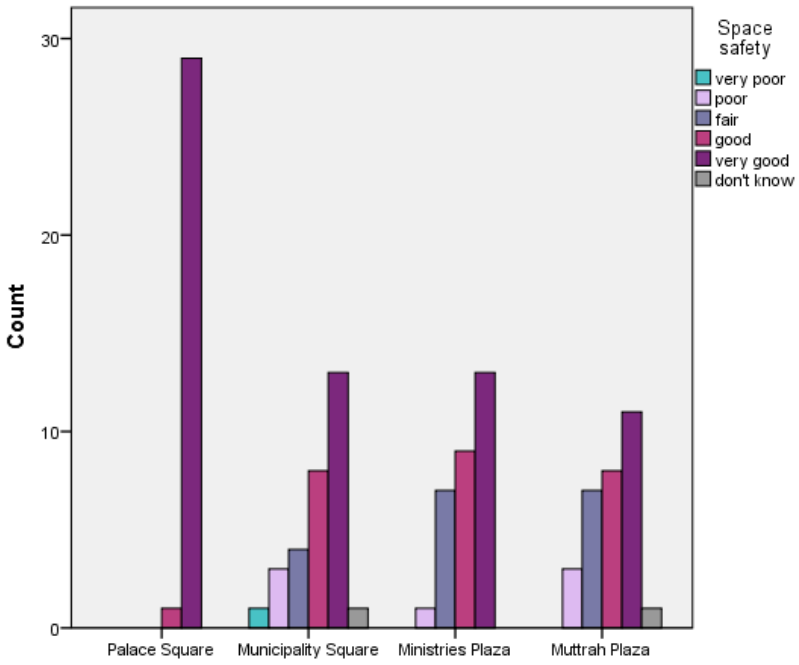


Figure 6.114: Safety

Palace Square

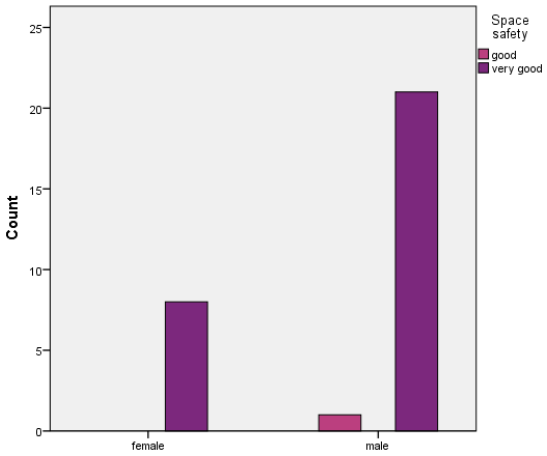


Figure 6.115: Safety perception according to gender in Palace Square

Municipality Square

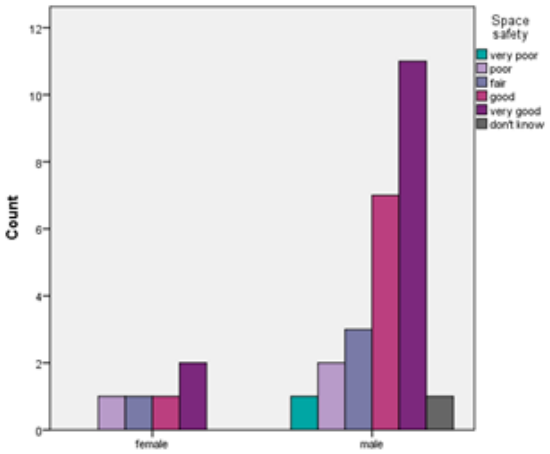


Figure 6.116: Safety perception according to gender in Municipality Square

Ministries Plaza

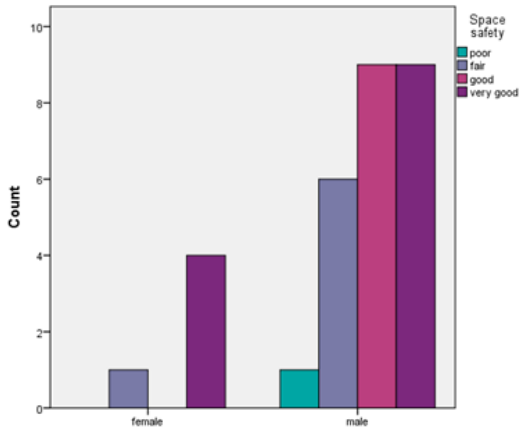


Figure 6.117: Safety perception according to gender in Ministries Plaza

Muttrah Plaza

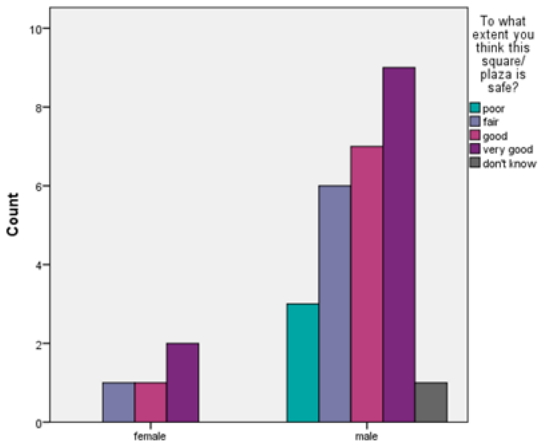


Figure 6.118: Safety perception according to gender in Muttrah Plaza

6.5. Maintenance and place keeping

Maintenance and cleanliness are essential aspects in sustainable and thriving use of any space. Participants were asked about the standard of cleanliness and maintenance of the case studies, as shown in Figure 6.119. The majority of users of Palace Square agreed it is very well kept up to high standards in this regard, and the rest of them said it is well kept. The participants in Municipality Square were the least satisfied by the standard of maintenance and cleanliness. They criticised the bad condition of fountains, lighting, and soft and hard landscape. Additionally, cleanliness was not up to standard in their opinion. In the case of Ministries Plaza, users were mostly satisfied but a few concerns were mentioned regarding a broken lamppost. Good and very good were the majority answers from participants in Muttrah Plaza. They, however, stated the need for extra attention to the space hygiene and fountain maintenance.

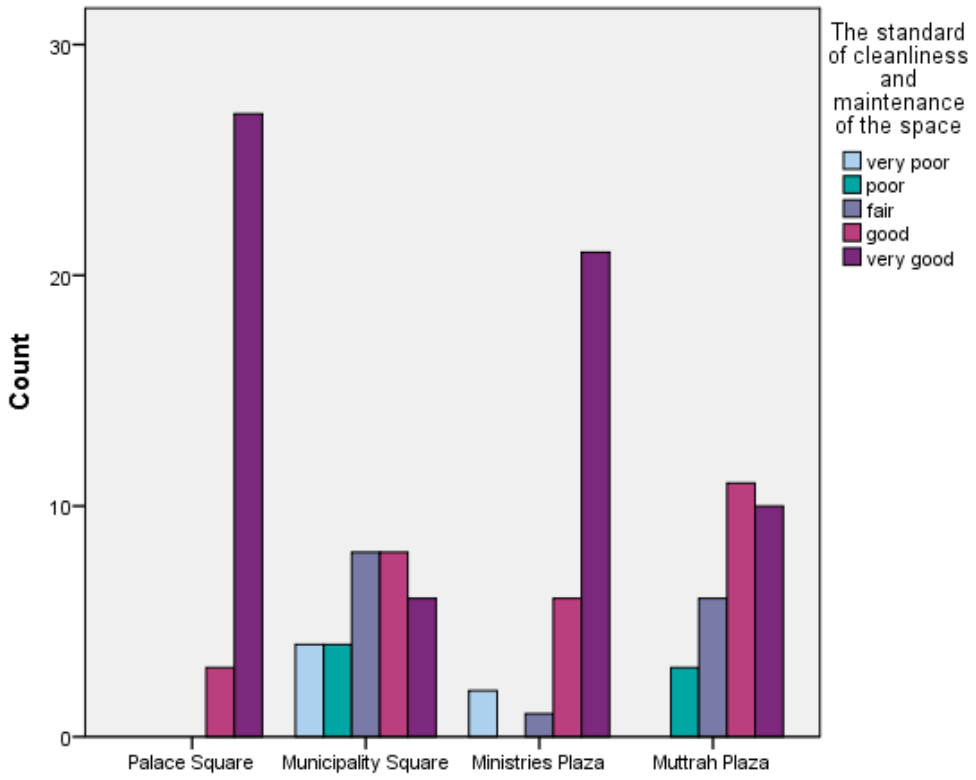


Figure 6.119: Standard of cleanliness and maintenance

6.6. Users' activities

In order to evaluate users' engagement, participants were asked what activities they would normally do in the square or plaza. Although sequences of preferable activities vary between the places, they were all more or less oriented towards exercising, sport, having a quiet time and enjoying the place. As shown in Table 6.3, the most frequent responses in Palace Square were *'to play sport or game'*, *'enjoy the beauty of the place'*, *'for peace and quiet'*, *'to keep fit'* and *'take a shortcut'*. Despite it being summer, which is not a tourist season in Muscat, *'tourism'* and *'taking photo of the palace'* were mentioned, which probably emphasises the importance of the square as a touristic focal point. Participants who were not from the local authority area were visiting to enjoy the place as a Muscat landmark and to take photos. Users from the surrounding neighbourhood were more enjoying walking in the space to keep fit and using it as a shortcut to the masjid. The young users from the neighbourhood were enjoying cycling and roller skating despite the restriction of such activities due to royal security of the palace. One unanticipated finding was *'to play sport or games',* including cycling, roller skating and football, which came at the top of users' activities, despite this square not being specifically equipped for such activities.

In the Municipality Square common responses were *'to play sport or game'*, *'meeting someone', 'for peace and quiet'* and *'to eat and drink'* (see Table 6.3). As we discussed earlier, users in this square were mainly from a young age group. The spread of preferred activities was dominated by youth interests such as enjoying meeting their friends, street dancing and eating or drinking. There were also families who enjoyed meeting other families, having peace and quiet while their kids scooted and cycled around, and could also eat and drink. Adult individuals mainly from expatriate groups were enjoying meeting each other, peace and quiet and also eating or drinking. Although this square is not specifically equipped for sport activities, surprisingly *'to play sport or game'* was recorded at the very top of users' activities

In Ministries Plaza, the most frequent activities were similar but in a different sequence of *'to keep fit'*, *'for peace and quiet'*, *'to play sport or game'*, *'enjoy the*

beauty of the place' and *'get fresh air',* as shown in Table 6.3. Individual users preferred walking and jogging around the plaza. Adult users fancied playing football and cricket. Despite the plaza not being provided with any cafe or stall, not even within a reasonable walking distance, *'To eat/ drink'* was mentioned by nearly one third of users, even more than in the other locations. It is also the preferred site for children and family outings, which was mentioned 8 times. Families use it as a mini-picnic spot where the younger can ride bicycles or roller skate, adults walk around enjoying peace and quiet.

Muttrah Plaza's location has great impact on the activities users most like. Despite its location on the long corniche walkway, exercising is not in the top sequence of preferred activities. This is probably because walking or jogging is not very convenient due to the road risk. The natural beauty of the port marina and its spectacular view to the historical Souq Muttrah and the Muttrah fort seems to encourage the user to sit and relax. *'Enjoy the beauty of the place'*, *'for peace and quiet', 'get some fresh air', 'children and family outing'* and *'meeting someone'* were the most commonly given responses, as shown in Table 6.3. This plaza comes second in stating *'children and family outing'* as an activity. It is also well used by families for mini-picnics. Some Muttrah market shoppers use the plaza parking, and then use the plaza as a resting point at the end of their shopping journey.

Activities	Palace Square	Municipality Square	Ministries Plaza	Muttrah Plaza
Enjoy the beauty of the place	11	8	11	18
Get some fresh air	-	7	11	10
Attend event	-	-	3	-
Organised education visit	-	-	-	-
Watch sport or game	-	4	3	-
For peace and quiet	9	9	14	10
To keep fit	7	6	22	1
Children and family outing	3	5	8	4
Guided walk and talks/ tourism	2	-	1	-
Meeting	1	11	-	4
Enjoy wildlife	-	-	2	2
Take a shortcut	4	2	2	-
To eat/ drink	1	8	9	3
Play sport or games	14	18	13	2
To read or study	-	2	1	2
Other:	Take photos of the palace: 3	-	-	Shopping: 2

Table 6.3: Respondents' activities in case study spaces

6.7. User requirements

6.7.1. Current users

This section discusses what would enhance users' active engagement in the spaces, according to respondents. Participants were asked what would encourage them to use the case study spaces more often or to stay longer. Users thought providing visitor facilities based on basic services and leisure activities was fundamental in obtaining attractive well used spaces. Users complained about the lack of visitor facilities such as toilets, drinking water fountains, cafés and shops (Aljabri and Smith 2013b). Toilets, with a stress on their cleanliness, however, ranked as the first missing need in the all cases. They thought it is a major requirement, especially for children and

elderly users. Some of them did not mind paying as long as these facilities were clean.

Palace Square

In the case of the Palace Square *'toilets'*, *'shops/souvenir shop'*, *'coffee shop'*, *'drinking water'* and *'site self-explaining photos in the arcade'* were most commonly mentioned (see Table 6.4). As a land mark location, users thought they needed souvenir shops and self-explaining photos of the place history in the arcade. They were also unsatisfied with the quality of the cafe across the street. They said they would like to see a high class coffee shop and they would certainly use it. Those with foreign respondents also complained about the lack of a proper cafe to keep people longer. They thought it is a shame that the only thing they can do in such square is to walk to the palace and take a few photos. They imagined that a cafe, souvenir shop and some exhibition photos would make local users and tourists hang around for longer. Providing a drinking water fountain was mentioned frequently by cyclists who were teenagers and shortcut users who walk to and from the masjid.

Needs	Frequency
Toilets *'clean'*	18
Shops/ Souvenir shop	10
High class Coffee shops	8
Drinking Water fountain	5
Self-explain photo	4
Good quality Restaurant	3
Seat near the palace, seat for families	3
More greenery	2
Tourist guide	2
Kids play ground	2
Allowing to play football or cycle around all the time	2
Toy shop	1
Lights	1
Traditional market	1
litter bin	1
Shade	1
Walking path	1
Arranging event	1

Table 6.4: Respondents' requirements in the Palace Square

Municipality Square

In Municipality Square the needs most frequently mentioned by participants were: *'toilets'*, *'maintenance and cleanness'*, *'good quality café'*, *'switching on the fountain and the screen'* and *'arranging events'* (see Table 6.5). Lack of maintenance is the main cause of user dissatisfaction in this square. They said there are toilets but they are out of order and have been closed for years. Users criticised the fountains' situation as very pitiful, as they have not been working for a long time, their tiles are missing and they are gathering litter. *'Some lamp posts are broken'*, *'some steps are broken'*, *'painting needs to be done in some areas'* and *'soft landscape is very shabby'* were frequently mentioned. Young users regretted that the projection screen has not been working for years. It is still there in their memories, how they enjoyed watching it when it was working. Most of them mentioned that *'it would have been nice if we could watch certain events such as London 2012 opening ceremony through the big screen'*. They also liked to see events on the square's

theatre as it used to be years ago. Some of them talked about having street dancing shows. Although there are two cafes in the square, a high quality coffee shop is the third most frequently mentioned facility to encourage staying longer. Probably quality is essential in motivating people to use public space.

Needs	Frequency
Toilets *'clean'*	18
Maintenance and cleaning	8
High class Coffee shops	7
Switch on the screen and the fountains	6
Event, street dancing and photo exhibition	5
Shade	4
More greenery	4
Drinking Water fountain	4
Shops	3
Good quality Restaurant	3
Kids play ground	3
Seats	1
Aqua park	1
First aid	1
Parking	1
Football field	1

Table 6.5: Respondents' requirements in the Municipality Square

Ministries Plaza

'Toilet', *'walking and jogging path'*, *'high quality café'*, *'outdoor gym'* and *'shops'* was the sequence of the most commonly mentioned needs by participants in Ministries Plaza, as shown in Table 6.6. As discussed earlier, exercising is the activity-oriented theme of this plaza. Many users said the current walkway is designed as a walkway alongside the road and they would rather have wider walkways designed to accommodate walkers and joggers. They said that the current walkway is around 1.2m, which not convenient to be used by the different genders, as one has to walk on the street shoulder every time they approach each other. Corbett (2004) found that a comfortable personal distance in a western context is

1.2m. However, as mentioned in Section 2.6.1, this is wider in Arab culture, where it reaches 1.69 to 6.53 between different genders (Farah 2001). Moreover, due to safety reasons, users prefer walkways not to be edged by a vehicular lane. Outdoor exercising equipment was mentioned frequently by participants. They thought this would widen the place's potential and encourage them to hang around. Users thought a good quality coffee shop would certainly give them a good reason to enjoy and stay longer. Shops were the fourth most frequently mentioned, especially by families. Respondents talked about a toy shop, a bicycle rent shop and a fresh juice stall. They said this would add excitement to the plaza, especially as it is located in the ministries district, where it feels dull in the evening.

Needs	Frequency
Toilets *'clean'*	21
Walking and jogging path	14
High class Coffee shops	10
Out-door Gym	9
Shops/ Fresh Juice Stall	7
More greenery	6
Kids play ground	4
Mosque	4
Safety barrier from the street	3
Drinking Water fountain	2
Having the water fountain on	2
Maintenance	1
Mosquito free	1
Amphitheatre	1
Barbecue are	1

Table 6.6: Respondents' requirements in the Ministries Plaza

Muttrah Plaza

At Muttrah Plaza the sequence of the needs most frequently mentioned by the participants was: *'Toilets'*, *'good quality coffee shop'*, *'having the fountain on'*, *'juice stall'* and *'more greenery'* (see Table 6.7). As discussed earlier, relaxing and enjoying the place are the users' activities theme in this plaza. The type of the leisure

facilities they requested were biased towards sitting and enjoying such as coffee shop, juice stall and fountain to be switched on all the time. They said it is a lovely place to hang about but there are no visitors' facilities that would keep them. They added that a cold fresh juice or hot coffee or tea would definitely encourage them to come more often and stay longer. The fountain was a concern for some users. Users complained that they often either found it switched off or working without its lighting on. They thought it is indeed a nice feature of the plaza, but they also preferred it not to jump as high and not to be as noisy. A couple of users mentioned that more should be done in soft landscape such as grass, trees and flowers.

Needs	Frequency
Toilets *'clean'*	23
High class Coffee shops	18
Having the fountain on	12
Juice stall	9
More greenery	4
Shade	3
Mosque/ pray area	3
shop	2
Safety barrier from the street	2
Drinking water fountain	2
Seat	1
Maintenance and cleaning	1
parking	1
Events	1

Table 6.7: Respondents' requirements in Muttrah Plaza

6.7.2. Potential users

There are people in the community who do not use these spaces. The interviews conducted with the community representatives explored the embedded reasons that hold back groups within the community from enjoying the selected open spaces. They said that the hot weather is the people's most common excuse; however, this does not appear to be the precise (or only) reason because, as was mentioned in Chapter 4, there are at least eight months of pleasant weather. In fact, community

representatives agreed that this type of public open spaces is a new concept for the local society. To some extent the findings in the observation and the survey supported what the community representatives mentioned, as most of the case studies are used mostly by expatriates because they, unlike the Omanis, are used to enjoying such type of open spaces in their culture. However, the new generation is more open to such ideas due to westernisation. In this regard, squares and plazas have to be provided with high quality to encourage the society to use them.

The Omani society, according to the interviewed community representatives, needs external stimulation to encourage them to use the public open space. This could be done by creating sustainable spaces which provide leisure and commercial activities, and organizing events which will help accustom the society to using them. Since Omani society is a collective community, it essentially needs to have multi-functional spaces that people with different interests can enjoy. Community representatives stated that the current situation of the case study spaces is that they are missing the functions which would give space meaning. However, as mentioned in Section 2.5.1, function was a fundamental principle in providing traditional public open spaces in Islamic cities.

All case studies were mainly designed as showcase projects and they are not user-oriented spaces. Users required spaces where they would choose to spend their spare time. Lack of visitor facilities is a major reason behind some people not using these spaces. According to community representatives, they would rather choose to spend time in indoor artificial environment such as shopping malls where they are well serviced. Commercial and leisure activities are very good attractive elements in enhancing users' active engagement in the space. The locations of all case studies are not directly surrounded by mixed-use activities, which results in not giving people reasons to use the space. People not only required good design but also need good quality of leisure services such as toilets, cafés, stalls, restaurants, sports, recreational facilities and shops. Community representatives agreed that public involvement in the planning process is the first step in providing liveable pubic open spaces.

6.8. Public participation in providing public open spaces

Public participation is a key element in any mature planning system in order to produce user-oriented spaces. It is seen as a citizen right in 'developed' western countries but it is still viewed as a new 'method' in middle-eastern countries. As mentioned in Chapters 2 and 4, the changes in the production of the built environment from a bottom-up process to top-down process has weakened the public input in the Middle East since the early 1990s. In the Omani current 'modern' planning system, public participation, if implemented, is done so at the information stage to avoid obstacles rather than as real involvement in the actual planning decisions. From the previous discussion, one third of respondents in the case study spaces believe these are not user-oriented spaces. A few timid attempts at involving the community in planning were made by what was the Supreme Committee for Town Planning in a few development projects, but not in Muscat. Up to 93.97% of the participants had never been consulted on the way public open spaces are provided or had been asked if they would be involved, whereas only 8.55% of them stated they had no intention to be part of, and have a say in, planning their city (see Figures 6.120 and 6.121).

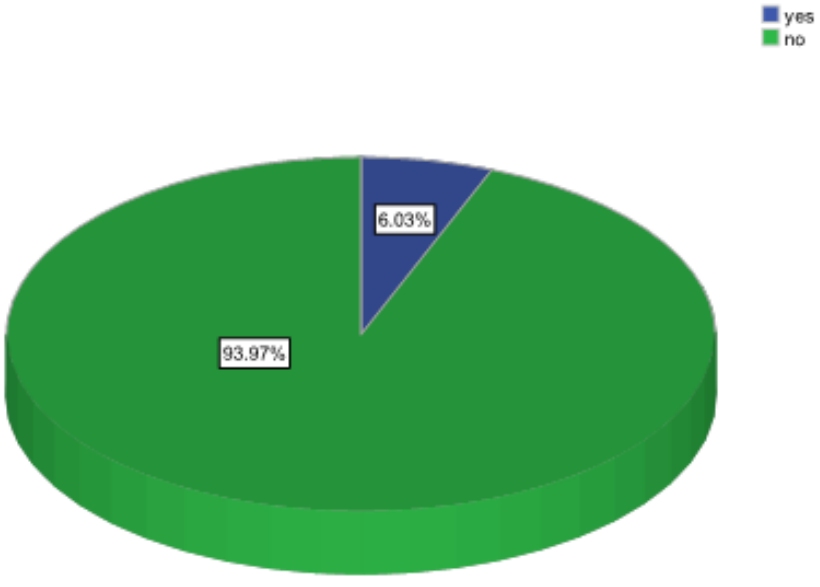


Figure 6.120: Involvement in the planning process

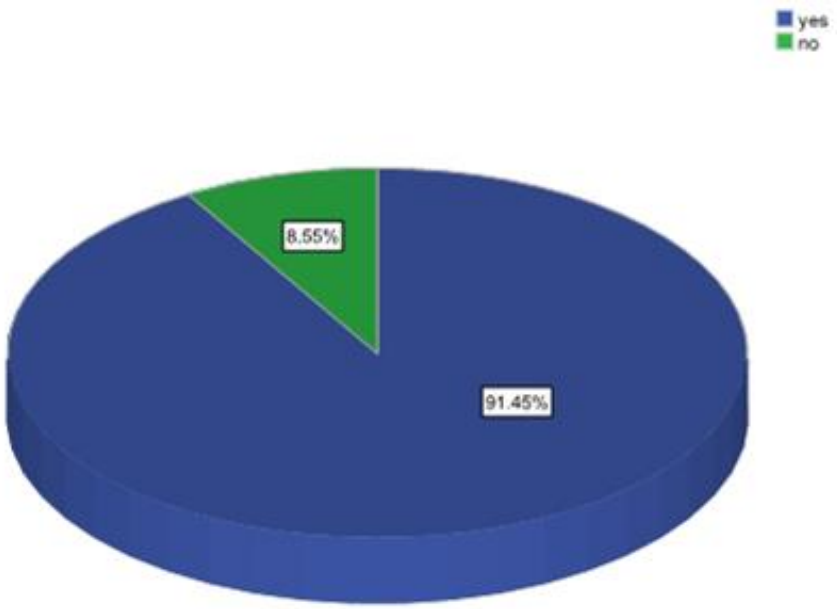


Figure 6.121: Willingness to take part in the planning process

6.9. Conclusion

This chapter traced the user perceptions of public open spaces in Muscat in order to evaluate the product of planning and urban design of public open space in Oman. Case study spaces were used as a focus to understand the demand for open spaces, to identify deficiencies, to recommend improvement in the provision process, and in summary to enhance liveability in current and new provision of public open space. The key issues discussed include social aspects, contribution to the city including the economy and environment, political value, usage of the space, users' activities and user's requirements.

The findings presented in this chapter show success in some aspects and need for improvement in other aspects. The design aspects were to some extent were perceived by respondents as successful in all case studies, but the absence of the functional aspect was the main issue. In the best case, Palace Square users were

satisfied generally with the physical design, appearance, identity value, its contribution to the city, accessibility, safety and maintenance. This square is mainly provided as a royal reception space in which everyday users were not the first priority. However, even the other case studies designs were not found to be user-oriented. In all cases appearance came before function, the latter being seen as what would give most spatial meaning to the space. In the case of Municipality Square, as designed it had both appearance as a national symbol and a proposed multi-functional nature including a stage, big screen, coffee shops restaurants and toilet. Nevertheless, the lack of importance given to place keeping led to low maintenance and it gradually ended up being abandoned by the community. Although the plazas were less impressive in their design compared to the squares, the level of maintenance did help to encourage visitors, but failed to keep them in the space for longer. Missing users' priorities resulted in lack of services and excitement, which is a planning and management failure. However, in general there is no sustainable management of spaces to provide liveable spaces in Oman.

The findings show that hot weather is one of the main challenges in those spaces. To the users the designs of all case studies were not good at considering the climate because their provision was not based on proper micro-climate study in terms of materials used, shade, greenery and sun movement. In all case studies, people were not given opportunity to practice different necessary, optional and social activities. The spaces do not respond to the needs of the wide range of users. Users, especially Omanis, were influenced by the quality of the spaces. Elements like safety, the standard of maintenance and cleanliness, visitor facilities, links to the surrounding area and commercial activities clearly affected the liveability of the case study spaces.

It is now broadly accepted internationally that public involvement is a fundamental principle in the planning process. It is vital to ensure that community requirements and values are adequately addressed to create liveable spaces. But this is not yet the case in Oman. Furthermore, planning did not view those open spaces as a marketing tool, opportunities for communication, increasing expectations, safety and leisure

recreation, sport and active recreation. The majority of users in all cases have never been consulted in planning their environment. Participatory planning would certainly contribute to providing liveable spaces that are used by all community groups. It would also help in addressing the current absence of women users, especially Omanis, lack of user facilities, and promote place keeping. Planning and urban design must integrate adequate involvement of the public to ensure liveability in the public open spaces. Furthering the investigation why the case study spaces are not more liveable, the next chapter evaluates the planning and urban design process in Muscat from a provider's perspective.

Chapter 7: Producers' Perception

7.1 Introduction

The previous two chapters have revealed a problem in the liveability of public open spaces in Muscat. In this chapter the researcher examines the effectiveness of planning and urban design practice in order to explore the factors behind this phenomenon. This is done by implementing the analytical framework established in Chapter 3 to evaluate the achievements, problems, opportunities and challenges of providing liveable public open spaces in Muscat. This chapter investigates the effectiveness of the planning and design process in promoting liveability of the selected squares and plazas from the providers' point of view. In order to fulfil this aim, structured interviews were held with professional architects and planners in academic bodies, government sector and private sector (see Chapter 3). Some of them were involved directly in providing the case study spaces. Decision making is a key element in the production of the built environment, therefore a policy maker at the legislative level was interviewed to explore the interaction among actors in the process. Moreover, community representatives were interviewed to show the interaction of opinions.

The chapter begins by examining the traditional understanding and the transformation of public open spaces. Then the chapter moves on to the process of providing public open spaces in order to understand why they are provided in the way they are. Lastly the chapter presents the weaknesses in the planning and urban design process in providing liveable public open space in the Muscat, from the providers' perspective.

7.2 The traditional concept of public open spaces

According to interviewees, city open space is a crucial part of any city created to meet the need of dwellers to gather. Their terms of understanding, usage and design

differ among cultures. Ancient Muscat, as most Arab Islamic historical cities, has public open space related either to the masjid or to the souq of the city (see Chapter 2). Interviewee no. 9 illustrated that there are six main design features for gathering areas in the Arab Muslim countries: gates, nodes, edges, paths or lanes to it, neighbourhoods and landmarks such as masjid or jamia'a. It is clear that the interviewee has been influenced by Kevin Lynch's description of the city space component in his book *The Image of the City* (see Chapter 2). The interviewee did not acknowledge the source of these concepts, which represents the lack of precision in subject knowledge by some experts. However, having those features depends on the size and wealth of the city. From the interviewees' perspective, traditional public open space features were greatly shaped by its surrounding and usage. This has kept them under risk of gradually vanishing as their survival depends on their surroundings and function. This could be the reason why the some traditional open spaces were gradually viewed as empty spaces when the importance of their surroundings and usage have declined.

According to interviewees, public open spaces play an essential role in the Omani society. Their provision was based on religious, social and commercial factors. From professionals' observations, the concept of traditional pubic open spaces in Muscat could be classified into three main types: religion-oriented places, commercial-oriented places and social-oriented places. Usually those spaces were strongly linked and located in the centre of the city, as Islamic city design is centralized with the masjid and souq in the central hub. Such spaces are created by the community themselves as bottom-up processes to fit their needs, as mentioned in Section 4.4.

From professionals' observations, religion-oriented gathering spaces could easily be found in all Oman. They classified them into: sirh el masjid, sahan el jamia'a and musalla el-Eid. Sirh el masjid is an open area in front of the village's or town's Masjid. This space is effectively used for gathering at five prayer times every day. The sahan el jamia'a space is relatively bigger and is used similarly to sirh el masjid. Both are also used as extension prayer space. Usually there is one jamia'a in each town, subsequently, its gathering space is larger and its usage expands on Friday

noon. Musalla el-Eid is less used compared to the masjid's space. It is a huge open space used only twice a year for the Eid or 'Muslim festival' prayer. Before and after the prayer there is usually a kids' seasonal market known as eltalaa near to musalla el-Eid. There is only one musalla el-Eid in every village or city. As in all Muslim countries, it is located outside the urban fabric of the town because of its size. For that very reason it was used also to gather people as a military preparation area. All previous religion-oriented spaces are dominated by men, as women in Islamic religion preferably pray at home.

Professional participants categorised habta as the traditional commercial-oriented open space. Habta is an open space associated with the commercial hub of the village or town. It is a very effectively used area. It has different usages as selling point by vendors, usually on a certain day in the week. It is also used for biding and auction, mainly for selling animals such as goats, sheep, cows and camels as mentioned in Chapter 4. During Eid, habta is used for selling seasonal goods, which begins with cloths in the early preparation days, then seasonal food and ends with toys and sweets for kids on the Eid days. This type of space still functions in Oman.

The social-oriented spaces, from the interviewees' point of view, are very important because they tie the community together. They were either small open spaces within the urban fabric or relatively larger ones next to the village masjid and/or fort or castle. They were multi-functional spaces where social activates happened. There are different types of social-oriented spaces with different reasons for gathering such as education, celebration, political and decision-making meetings, and as market extension. Madarsa, which is the educational open space, was used daily for teaching, and was normally found in traditional scenarios as an area shaded by a very large tree, where the teacher and his students normally had their lecture in the morning. The other example of social open space is albrha. This is in front of the fort or castle, and is used daily as a sitting and hanging around area. The community used it for celebration using music, singing songs and dancing. Traditionally people would gather there for different celebrations and cultural events such as Eid festival, karankasho *'15th Ramadhan eve celebration'*, memorising Quran completions party,

poetry events, playing popular traditional games, holhol *'child's first birthday'*, weddings and funerals. Furthermore, it is used for solving problems such as disputes around use of falaj (see Chapter 4), buying and selling water. On special occasions it is used as a market extension for seasonal selling. It is also used for meetings with the head of the village's or town's alderman for speeches or announcements. It is well organised in the way it is used effectively by both genders and different age groups. As mentioned in Chapter 4, this type of space still exists in Oman, as in the example of Nizwa and is usually strongly linked to the masjid, souq, fort, head of state office and the court. However, this no longer exists in Muscat.

7.3 Transformation of public open spaces

Cities go through regeneration and reinvention to meet the economic and other needs for each generation, and Muscat also goes through that. The oldest gathering space was in central Muscat and Muttrah since these are the oldest part of the city (interviewees no. 7, 8, 9 and 10). Muscat ancient city is what is known today as Muscat state. From its name, Muscat, which means *'dropped place'*, was very tight, small in size and restricted by the surrounding mountains. The city was all very dense with narrow lanes. Figure 7.1 illustrates the city wall surrounding the main buildings. It is presumed that this drawing was prepared after 1622 AD, as that is when the city walls were built. There were big commercial houses and the palace as it is today, on the right on the sea front, and then a series of lanes that radiated and spines that came out towards the city wall, all to connect the two hill cliffs (see Figure 7.2). The drawing also shows the 2 gulfs of Kalboo and Muttrah. Muscat city was the natural growth of the national port. Wealthy people lived inside the city wall and everyone else lived outside, with services also being outside. The old plans and early aerial photographs show a very small community, which made the gathering spaces relatively very small inside the city wall. For climate reasons those spaces were in between buildings for shade. The gold and silver souq and city souq were inside the city wall. The gathering spaces within the city wall were associated with the souq, Masjid Alkhour, the palace and Al-Mirani and Al-Jalali Fort. There were

commercial-oriented, social-oriented and religion- oriented spaces. According to professionals, the early 30s to 70s aerial photographs of the city show an urban configuration that was quite close to the original state of the city, as shown in Figures 7.3 and 7.4 (interviewee no. 16).

Figure 7.1: Muscat in a Portuguese drawing made in the 17th century (Source: http://andyinoman.com/tag/muscat-ancient-drawing/).

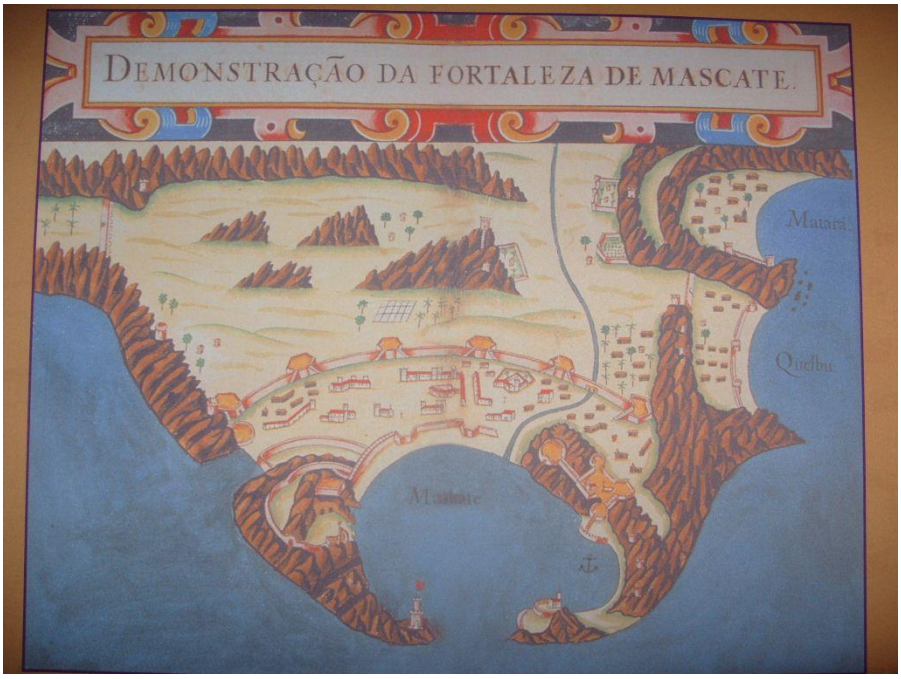


Figure 7.2:Muscat in Portuguese drawing made in the 18h century (Source: http://andyinoman.com/tag/muscat-ancient-drawing/).

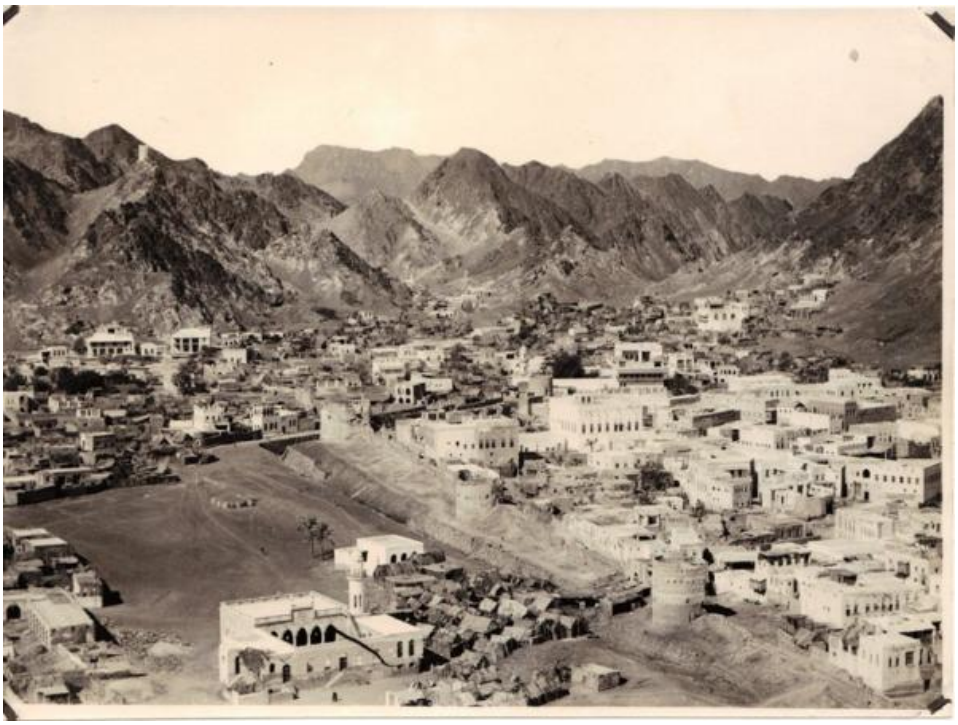


Figure 7.3: Aerial photo taken by member of the British 211 squadron based in Iraq around 1938 (source: http://www.omanisilver.com/contents/media/hvw1938b1.jpg)

Figure 7.4: Aerial photo taken by member of the British 211 squadron based in Iraq around 1938 (source: http://www.omanisilver.com/contents/en-us/d20.html)

7.4 Modern understanding of public open space in Muscat

Middle-Eastern cities adapted new design concepts as part of the modernisation process (see Chapter 2). Interviewees explained that square and plaza are relatively new concepts in the planning system in the Middle-East. It is clear from the interviews that each country in the Middle-East has evolved those two concepts in different ways. The concept of the square is widely spread in the Middle-East compared to that of the plaza (interviewee no.1). It is mainly found in the central area of the city surrounded by official buildings. Squares in some Middle-Eastern cities are effectively used and have recently even played an influential political role in the Arab Spring. However, participants could not see similar spaces in Muscat since most of them have been provided recently and are not well connected to community events. Participants believed that in Muscat there is no specific or clear

understanding of the terms and usage of modern public open space. In Muscat there are large spaces which are not well defined. For both professionals and public the difference between square and plaza does not go beyond a simple use of terms. They believed that there are no clear functional or design features which make a difference between the two spaces. Interviewee no.7 believed that the two concepts are vague because the consultants' offices have been implementing the clients' wishes without deep logical thinking. He said *'we need qualified experts who could raise the knowledge and general understanding…*[*of the difference between squares and plazas in their designing and usage*]*'*. All case studies are provided by the government bodies.

Although the concept of squares and plazas in Muscat were adopted from the West, they are not as successful as western examples (interviewee no.18). Professionals certainly agreed that they are not similar in their setting and function to the western examples. Most of those spaces are provided as individual statements, missing the overall picture. Interviewee no. 18 stressed that *'we have to look at the best practice and learn from their experience in order to create successful open spaces'.* Community representatives believed there is a big difference between open spaces in Muscat and Western cities in sensing their importance. Interviewee no.2 expressed that *'we cannot compare our public open spaces with the one in the West since they are relatively new'*. In western understanding, that kind of space will be associated with a historical monument, or a focus on commerce. He claimed that public open spaces in Muscat probably would gain importance with time, maybe after 100 or 200 years, when they are connected to peoples' events, as is the case of Tahrir Square in Egypt. There is still a lack of historical and national value of such spaces.

7.4.1 Typology of public open spaces in modern understanding

There are different types of public open spaces in Muscat, as mentioned in Chapter 4. Parks and gardens in the Middle East are at the very top of preferred public open spaces as part of Islamic and Arabian culture during history (see Chapter 2). Muscat

is relatively new to the concept as people used to have private gardens in the past. Today people in Muscat use them effectively because, as a Middle Eastern culture, they are attracted to greenery. However, urban spaces such as the sea front, streetscapes, squares and plazas are not provided as well as parks and gardens are. Participants thought they were given less attention by providers compared to other open spaces such as gardens and parks. Muscat is a coastal city where the community is linked to beaches, but are still no examples of liveable seafront. Streetscapes are not well designed since most of the time they are provided as a response to market forces. Streetscape has potential in Muscat since people already have a reason to be there, but their built environment is not well provided. However, from the interviewees' observations, currently there are two types of gathering open spaces in Muscat, as discussed below.

Old gathering spaces

Old gathering spaces are related to what has been left from the traditional spaces. They were designed by users for commercial and celebration events. This type of open space was used more effectively in the past. Today they are gradually vanishing in Muscat because they have been relocated by Muscat Municipality where not necessarily convenient for users, and they are gradually not being recognised by the new generations. Today this type of space is not suited to the modified new culture of the new generation.

New gathering spaces

New gathering spaces are provided as part of the Omani Modern Renaissance Era. Therefore, all of them are relatively new as the renaissance emerged in the 1970s. They are designed as city land marks using modern features, mostly as city beautification for reasons such as celebrations for national events. Apart from parks

and gardens they are not effectively used. Participants categorised and defined them in the context of Oman as follows:

***Garden*:** is well designed greenery which cultivates pleasure space with defined paved paths, sitting areas, toilets and stalls or restaurant. Water features such as fountains are very important elements, especially in big gardens. It usually includes a children's playground. The majority of interviewees were satisfied with parks and gardens and most of them mentioned Al'Sahwa Gardens as a successful example (Aljabri and Smith 2013a). Gardens are very important as a state symbol and as an expression of wealth. *'It is also a way of showing power by taking the most valuable commodity in the Middle-East, which is water, and making a garden'* (interviewee no.16).

***Park*:** is a designed space on a natural site used for public leisure. It incorporates both natural and man-made materials. To add more excitement greenery, paved paths, stalls and toilets are provided. There are no limits to man-made elements in providing parks such as amphitheatre and artificial water cascade, as in Al-Qurum Park or the lookout tower in Al-Riyam Park. However, the natural elements are considerably changed in all existing examples, which has led parks to appear as gardens.

***Recreation space*:** is a small designed space for leisure usage. It is provided to acknowledge a natural beauty spot. Greenery, paved paths, stall and sitting areas are provided in such spaces. Kalboo Bay is a successful example of such spaces.

As noted, the understanding of parks, gardens and recreation spaces in Muscat are overlapping. Interviewee no.8 thought that authorities gave extra attention to the parks and gardens in response to people's demands. As is was discussed in Chapter 2, Middle-Eastern people strongly value green spaces and running water features because of the harsh climate in the Middle-East, and due to emotional religious reason as they represent heaven, which for Muslim is the ideal life and their target.

***Seafront*:** is a paved designed walkway with shaded sitting areas along the beach edge. Although a seaside space like Al-Sarooj is not very well provided as a public open space, it is well used and preferred by the current modified culture due to the good quality of restaurants, shops and coffee shops. Academic interviewee no.19 stressed that '*in a city like Muscat you would expect to have public open space that like St Mark's Square in Venice that is well defined by buildings and open to the sea. The spaces in Muscat are self-generated and not designed'.* However, such areas are dominated by cars and parking spaces.

Streetscape: Streetscapes are not well designed since most of them are shaped by market forces. Streetscape has potential in Muscat since people already have a reason to be there such as Alkhoud Street, Al-Qurum Commercial District and A'Seeb Market Street. However, there is no consideration to the pedestrian in urban spaces and they are dominated by roads and parking areas.

Square: it is the space at intersection of paths or roads designed to gather and distribute people in the city. It is usually associated with government and administrative buildings or masjid or gates. It is old formal space located in the centre of the city and surrounded by the market.

Plaza: it is an open space designed to gather people in their celebrations and traditional events. It is normally an informal leisure space associated with sitting areas, shops, cafes and restaurants.

Professional interviewees perceived that old gathering spaces are gradually vanishing and the new ones are not used effectively. Reasons for this are weakness in the planning system and/or culture changes as discussed later. Moreover, seeking modernity has resulting in replacing the old with new rather than transforming the spaces according to social needs. Squares and plazas in Muscat specifically, and in the Middle East, are even more overlapping and vague terms that they are in the West. Though both are used as terms for open spaces in urban areas.

7.5 Planning practice of the case studies

7.5.1 Muscat city planning

According to the interviewees, the planning system in Oman is still not mature. Muscat is a city that developed organically to some extent. It historically developed from fishing villages along the coastline. As a part of developing the city, they tried to link between them, despite the traditional development system being on hills to avoid flooding risk. Professionals observed that the city had grown along a narrow strip of the coastline which is available between the mountains. The consultant companies which designed the city expansion focused on the coastal areas because it was easier to avoid the hill area due to cost and technical difficulties. Interviewee no.19 said *'you could not define the spirit of Muscat plan as the city had grown in a non-controlled way from a strip of coast line'*. This all led to having a linear city. While implementing the concept of *'built as you need'*, the city continued to grow naturally by joining development projects to meet the housing targets as mentioned in Chapter 4. To professional interviewees, Muscat is designed for cars as the only transportation without any other alternative means. Then, in the first decade of the 2000s, the city faced a major problem of traffic and flooding disasters in 2007 and 2010. Still there is no substantial solution; all that has been done is considered by the interviewees as crisis management in which while one problems is resolved others are developed. Instead of introducing sustainable transportation solutions, more roads have been developed; the most recent example is the Muscat Express way, which was constructed to solve traffic problems by chopping through the mountains. In terms of prevention from flooding risk, there is still serious need for a comprehensive solution to protect the whole development areas rather than focusing only on redeveloping the highway network with high protection from flood.

Today in Muscat there are different districts, but without a distinctive character or focal point for each of them or central area to define certain urban spaces (interviewee no.19). It is more planning based on grouping of development needs where ministries, industry, commercial and residential areas are put together without

specific character in general and no specific public civic areas. Therefore, there is no urban plaza where people will congregate for social interaction, as in any other city, and this is considered a big drawback (interviewee no.19). The city has very low density horizontal growth, the main component of which is housing.

Muscat has been planned by the Ministry of Housing as planning body, Muscat Municipality as the services provider and the Supreme Committee for Town Planning as legislation body. Providing as many plots as possible has been a top priority in the agenda of the Ministry of Housing (see Chapter 4). His Excellency, a head member in Majles A'Shura the 'parliament council', stated that *'it is true that the Ministry of Housing has been recently focusing on quantity rather than quality. This is probably because modernisation happened very fast in a relatively short time and due to lack or missing of qualified people. Moreover, the lack in coordination work between authorities led to contradiction in their work and missing some of the priorities in providing the city with facilities such as public open spaces'*. The General Director in the Supreme Committee for Town Planning criticised the shallow thinking in planning of the Ministry of Housing, as they do not plan for such open spaces professionally with deep logical thinking. They provided left over plots after providing the buildings – such as highway or road right-of-way areas and random plots – for the Muscat Municipality to create public open spaces for the city, with no clear strategy of what or how they should be. There is no social, economic or environmental thinking in their planning. Interviewee no.11 said that the Supreme Committee for Town Planning did not play their role as it should, because of an authority conflict with the Ministry of Housing. The Supreme Committee did not have the authority to plan Muscat. Even their planning guide was provided as a planning recommendation guide rather than policies, and planners in the Ministry of Housing revealed that they implement their own guidelines. Those guidelines are more design codes rather than comprehensive planning regulations.

However, the Supreme Committee for Town Planning was cancelled in mid 2012 and the Supreme Council for Planning was established. A General Director in the Supreme Committee for Town Planning explains that they were working on

legislation on such spaces in the national planning just before cancelling the Supreme Committee. In interview with one of the Head of Planning Department in the Ministry of Housing, as planning Muscat is their responsibility, they revealed that *'providing squares and plazas is not within the services that the Ministry of Housing seeks to provide'.* Moreover, he said that '*the ministry offers plots under the category of general services land use to Muscat Municipality and they could design whatever they think suitable such as parks, squares or plazas'*. This clarifies the weakness in the planning system, which does not have a clear vision around which all the work will be structured.

Interviewees expressed that the planning system desperately needs a national plan. There is no national plan where structural, regional and local plans can be elaborated from. A community representative said *'currently our planning is crisis management; we do not have national planning, we plan like a jigsaw puzzle, which makes the city ugly'*. His Excellency, a responsible member of Majles A'Shura, interviewee no.20, expressed that *'it must not be an ad hoc plan only to solve current problems; it has to be for 100 years, where public open spaces are an essential provision'*. Recently, besides its supervisory role, the Majles A'Shura has authority in legislating policies and rules. His Excellency interviewee no.20 revealed that *'at the end, we as a council are not specialised in each and every aspect. We desperately need qualified experts to stand up for the better of the country. Therefore, we are very optimistic by the establishment of the Supreme Council for Planning, as planning will be provided at very high level*'. To some participants, having the Supreme Council for Planning as a higher authority will help to create a wider picture and will pull together all the hard work done by all responsible bodies. However, to others, transferring all planning responsibilities such as urban planning, economic planning, human resource planning and others to the Supreme Council for Planning raises their concerns. They believed that the challenge is very big for the established council, as to them it does not have adequate capacity in terms of qualified professionals to handle such huge responsibility.

7.5.2 Traditional public open spaces in Muscat

The urban fabric of Muscat is extremely changed due to replacing of the old with new development as part of the modernisation movement. Traditional public open spaces still exist in Oman but they gradually vanished in Muscat after the 70s. Academic interviewees believed that the modernisation movement replaced large part of the ancient built environment in Muscat state with new developments. Furthermore, the city extension replaced all the old villages with new districts. This attitude led to loss of the majority of the old gathering spaces in Muscat. According to provider interviewees, the community continues to create traditional gathering spaces in their new developments next to their local market for animal auction, vegetables and fruit vendors and second-hand cars auction. They would select their open space strategically next to the market with easy transportation access (interviewee no.11). These traditional spaces were viewed by the authorities as inappropriate to fit with the modern developments of the city, either because of their inorganic and humble design or for hygienic reasons, especially the one associated with animals. Therefore, Muscat Municipality attempts to control such spaces by designing a proper modern market and by gradually pushing spaces with animal activities outside the central development (interviewees no.7 and 11). The new replacement of the traditional spaces have not functioned as the original examples, and the community has gradually abandoned them. '*Muscat Municipality underestimate the strategic location of those spaces as they are empty in terms of design and thought naively they could shift the activities into another location with fancy design'* (interviewee no.11). Furthermore, Muscat Municipality fees and their bureaucracy discourage business activities in new markets. However, interviewee no.15 claimed that traditional spaces were not sustainable because their location is not appropriate for the new density. Another participant believed that authorities which were represented by foreign consultants underestimated those spaces and viewed them as useless empty areas despite their functions. However, interviewee no.11 expressed that there are traditional gathering open spaces still used in *As'Seeb* market, where every day goods and seasonal markets are held.

7.5.3 Lack of public open spaces in new developments

As mentioned in Chapter 3, the selected case studies were the only squares and plazas found in Muscat, and all are located in the oldest part of the city. The city has vastly expanded but interviewees collectively agreed that there are no squares or plazas in the recent developments in Alamrat State, Qurayyat State and Al As'Seeb State. Despite the new developments having the largest share of the population in the city, they are remarkably lacking in such spaces. For interviewees, this is again due to the weakness in the planning system in new developments. This has led to no identity or character in the new developments where there are only a large number of plots. An academic participant argued that old developments were of high density and therefore there are public open spaces, whereas there is lack of them in the new development because of their low density. The new strategy of planning has been to provide breathing space within the plot itself. The failure to attract people to their earlier few examples of public open spaces turned the authorities off providing others in new developments (interviewee no.2).

However, the rest of interviewees said that we cannot be certain that new developments were provided without public open space. A community representative said *'this could have two possible interpretations; if we tried to think positively we would say that the authority did not provide public open spaces because they did not know the importance of providing such spaces; but if we think negatively we would say public open spaces were there at the very first stage but they got changed later to private ownership'*. Some providers and community representative interviewees confirmed that, to their knowledge, those spaces were there but were gradually converted to private ownership. Community representative interviewees thought planning is currently not institutionally driven, but rather driven by individuals with things being done to please the head of the authorising body. Members in Majlis Al'Shura said that they had raised their concerns on converting public ownership plots to private ownership in many cases. A head member in Majlis Al'Shura (interviewee no.20) described it as *'human greed'*, as many of the responsible people will try to use their authority and influence to convert those areas either into private

ownership or into projects for their interests. He added that Majlis Al'Shura as policy maker has succeeded in rescuing a few open spaces at the very last minute in Bousher and Muttrah, before they were transferred to private ownership by the Ministry of Housing and Ministry of Tourism.

Interviewees noted that the planning system viewed public open spaces as wasted non-functional areas. There is no awareness of the importance of public open spaces in the planning system. They are in such planning circumstances viewed as leisure provision. Therefore, *'they have been sacrificed in order to provide what authorised people in the planning system considered as priorities'*. Interviewee no.10, an Architect in the Municipality, revealed that recently they have been asked to design commercial projects such as an office complex or a shopping centre on a garden plot, since a garden or any public space is considered as a waste of money. This is because there is no clear legislation for their provision. Furthermore, corruption among official leads to breaches of those legislations in someone's favour.

7.6 Contribution to the city

As discussed in Chapter 2, liveable public open space makes a significant contribution to city identity, economy, environmental quality and social aspects. This section reports on professional interviewees' views on such contributions in the context of Muscat.

7.6.1 Contribution to the setting, character and structure of the city

A public space has to represent community identity by providing emotional connection or meaning of the space and by providing spatial or physical qualities which show identity. The Palace Square is located in Muscat state, which was the original ancient city. To participants it makes a good contribution to the setting and character of the city. It integrates with the palace, which is one of the main tourist

points of the city. Municipality Square was officially opened on a national day to represent the modernity of the Omani renaissance era. Academic interviewees thought that the square is a very good example in providing both the emotional and spatial identity of the city. According to academic participants, this square is the most symbolic landmark and it has potential to grow even more connections to the nation with time. However, according to professionals from the Ministry of Housing, both Ministries Plaza and Muttrah Plaza are rather landscape on road reservation areas. They are the result of Muscat Municipality's efforts as part of city beautification projects. Nevertheless, those plazas, according to the academics, might not make a strong symbolic contribution as landmarks compared to the two squares, but they do have a good input to the setting of the city character.

7.6.2 Contribution to the economy

Muscat has natural values and resources which the planning system has still not made the most of to promote the economy (interviewee no.10). Interviewees explained that effective use of open space must have a link to commercial activities. Most participants thought that Palace Square makes no economic contribution but it has the highest potential to input to the economy among the case studies because of its tourist appeal. Providers revealed that future phases are going to add commercial activities to the square. Those activities mostly are tourist oriented such as book shop, souvenir shop, cafes and restaurants. Interviewees agreed that Municipality Square is in the commercial district but it does not contribute to the economy as it could because of its maintenance standards (see Section 6.5). Ministries Plaza also has no input to the economy, whereas Muttrah Plaza is considered by some interviewees to make very little contribution. All interviewees agreed that the case studies would do better with adding proper leisure-oriented businesses to them. There were no economic planning strategies or legislation to follow in providing the case studies.

7.6.3 Environmental quality

As professional interviewees state, there is no serious consideration of environmental quality in the Omani planning system. Due to the pressure of providing as many plots as possible, the Ministry of Housing provided districts on flooding risk areas. After the Gonu cyclone in 2007 and Phet cyclone in 2010, the Ministry of Environment and Climate Affairs was initiated. Still basic environmental standards are missing in Muscat such as flood risk management, water resource management, waste management, industrial regulation, biodiversity and land contamination and soil. According to interviewees there were no environmental planning strategies or legislation to follow in providing the case studies. There is no serious environmental thinking, in fact, more priorities are given to roads and parking areas.

For provider interviewees, a simultaneously top-down and down-up approach must be implemented to achieve environmental quality. However, there is still no environmental awareness among people in Muscat. Artificial indoor environments are preferred – just the opposite of maybe 60 years ago, when they used to consider the outdoors as a major part of living and there was no air conditioning. Environmental professional interviewee no.19 predicted that in the next few decades, due to the energy problem, the planning system will be forced to interact with the environment to make the best use of it. It will have to revive traditional living due to the energy problems and the environmental issues that have to be addressed. This would only happen by getting all stakeholders, community and involved authorities together under a comprehensive planning system.

7.6.4 Political value

The majority of interviewees thought that the case study spaces are show-case pieces and that people do not use or enjoy them. They are all provided next to motorways and highways to please the authorities and the royal court. None are provided as user-oriented spaces since they all lack basic visitor facilities. In this argument, all

interviewees excluded the Palace Square as a special case where they thought it was definitely provided for a specific political value as a royal reception space. Most of them found it an advantage to have it within a residential neighbourhood and open to the public. A few interviewees said that there are restrictions on activities in the square which are associated with large gatherings over 10 persons and sometimes with car parking. The other case study spaces were provided by Muscat Municipality. A community representative expressed that they are rather '*cosmetic touches'* to please people in upper level authority. For academic interviewee no.1 '*right now public spaces are like exhibiting spots and do not have a big role'*. Interviewee no.7 went to the extent of stating that the drop in standards of maintenance in Municipality Square is due to it not being in the VIP's main driving route. Indeed, they agreed that the two plazas were designed as beautification projects next to a motorway or street, but then the municipality only designed on plots which were given by the Ministry of Housing mostly as road reservation areas.

On the other hand, other interviewees stated that it is good that the municipality had undertaken to work on the city character and appearance. They saw the municipality as making attempts to provide such spaces whenever it got the chance, as in the case of Municipality Square (interviewee no.15). His Excellency (interviewee no.20) thought it is nice to have a pleasant landscape in the city's highways and streets but this definitely does not mean residential districts should be forgotten. He added that *'it is the time to focus on content rather than the context'*. The planning system omitted providing such spaces with good integration with the urban function and with logical usage rather than providing just nice looking places. However, the Municipality neglected the opportunity to provide squares and plazas in market areas. This is due to lack of integrated work between authorities and of a comprehensive national plan in which all priorities are addressed and responsibilities clarified.

7.6.5 Social aspect

According to interviewee no.7, the traditional open spaces have not been modified in parallel to the changes in society; therefore, current society in Muscat looks down on the traditional open spaces. This has led to such spaces being abandoned by the middle and high income groups. The General Directorate interviewee no.18 stated that conserving the tradition is not a planning mission. The planning mission is to update with the society's needs. To him the lack of traditional open spaces in Muscat is not because of planning; it is rather due to the change in lifestyle. He illustrated that traditional spaces are usually empty from design features; they gain value from being in front of either a fort or a market. There only forts in Muscat city are in Muscat and Muttrah. However, those locations have been extremely modified over the last 40 years, with their public spaces not even being in their original situation or location. To this interviewee it was clear that in new development there was no space of the traditional type due to there being no forts in them.

Since Muscat is the capital city, it was under huge pressure to develop as a national modern city, which again imposed on changing the lifestyle and culture. However, Muscat has a mixed population from all over the country. Modernity did not affect only the physical built environment, it reached deep into the culture and lifestyle. Furthermore, '*the society considerably changed in 42 years from the camel to the Hummer'* as an academic interviewee no.2 put it when describing the huge difference in lifestyle activities. Today public open spaces in Muscat have modified their purpose and functions. According to interviewee no.4, the new lifestyle of current Omani society has changed public open spaces from functioning with necessity activities to more leisure activities, festivals and celebration events.

Some participants claimed that people seemed not to bother about public open spaces; they will use houses or drive to commercial indoor centres and use internal artificial environments. Interviewee no.9 thought there is no need for public open spaces since people here are dependent on cars and they have lost the motivation to meet and gather. The interviewee thought that in Muscat the community is going through the cycle that the Europeans had gone through time ago. They are attracted

to the modern technological living where there is an artificial indoor environment. However, they will eventually realise and come out of it and realised that indoors is not a good way of living. Moreover, a lot of Europeans are cycling, hiking and jogging due to the awareness of the importance of being active and healthy living, therefore public open spaces are related to that outdoor activity. They could be better organized by events such as for example the Muscat festival, which was never successful until they started to use the big park where there are large areas. Even then people were attracted to the visitors' facilities and leisure activities which were provided in such festival.

A few interviewees claimed privacy as a reason for people not using the open spaces, with Omanis being shy in character and this holding them back from using such spaces. On the contrary, the majority of participants tend to believe that the Omani society in Muscat today has a modified culture that adopted western lifestyle and adjusted to their social values. This is clear in the way in which society is extremely attracted to the use of indoor spaces. However, they occasionally enjoy public outdoor activities. That is clear in many locations where certain activities interest them, for example the Muscat Festival. The young generation in the community has been westernised as a modernity trend. Most participants believe that the concepts of square and plaza are new to the Omani society. Lack of functions in those spaces have led users not demand to them because they believed that such spaces are useless. On the other hand, they will use and admire public spaces when they visit other countries, according to interviewee no.17.

The community surrounding the Palace Square is very small since the area is very tight and restricted by cliffs and mountains. Due to official building development in central Muscat, a huge part of the community were relocated to new districts. This left Muscat with an even smaller community. New Omani generations would prefer to move to bigger houses in developments closer to the centre of the city. According to interviewees, there has been a drop in Omani residents and an increase in expatriates in the Muscat state community. This means a decrease in families, which affects the type of community. This was all started by moving people out of old

developments for the sake of providing new projects in these central locations, which were mainly office building. However, many old members of the community still exist and live in their tiny houses, some properties being 5x5m, but the new generation would prefer to move out of the old crowded city centre to the new developments. Interviewees stressed that besides the residents, there are office-workers, mostly Omani, from the surrounding government buildings across the square for noon prayer. Moreover, it is a tourist spot where the majority of users are European tourists, especially in the winter.

Municipality Square is located in the commercial district area, which is dominated by flats as residential units. This area was the central hub of the city in the 80s and, as the city expanded, the centre moved away. As participants mentioned, middle-income Omanis or high-income expatriates prefer to live in houses or new flats in new developments as the centre of the city moved away, even if that means to travel longer for work. There was a drop in Omani residents and an increase in expatriates in this state. Therefore, the majority of the users are expatriates or low-income Omani, as they cannot afford to move. Despite the square being next to government and private sector bodies, their office-workers do not visit the square. This could be because there is no lunch break in the government working day and even if there were, the square is not designed with consideration to be appropriate for morning use (see Sections 4.5.3 and 6.3.4).

In Ministries Plaza, as mentioned earlier, having no lunch break for government workers, lack of facilities and depending on private cars are reasons for not using the plaza in the day. Interviewees considered it the best among the case study spaces in considering the climate, but they thought it could still be improved to encourage users to use it during the day. This plaza is not responding to the social needs because of its location in the Ministry district, it not being surrounded by community and not within a mixed-use area.

Muttrah Plaza is isolated from the closer community, as mentioned in Section 5.2.4. It is located in the same state as the Municipality Square, therefore according to participants, most of the users are from low-income groups. Having the traditional

market, the harbour, Rriyam Park, and hotels in the area adds a flow of tourist users passing the plaza. However, interviewees thought this location attracts visitors from outside the local area due to the traditional market and natural seaside area.

In summary, the interviewees felt that social aspects were not well considered in providing the case study spaces. There is lack of legislation and policies with which to address social aspects in the planning system.

7.6.6 Users' needs

Interviewees collectively agreed that public open spaces are not well used in Muscat. For participants, the main reason for the lack of usage of the case study spaces is that they have not been provided in response to users' needs. They were produced by the government as part of development projects without deep thinking around meeting community needs. They have no function in order to interest people to use them. Squares and plazas have to represent community identity, being places they would not only use but also where they could express their emotions in celebration. In Muscat people will go celebrating on the roads, as it happens when the football team wins. This is because people will always think to celebrate somewhere familiar to them. People like to use spaces that they are familiar with. Interviewees addressed that we should look at successful examples and think of functions that attract people like shops, e.g. a coffee shop to create a perfect atmosphere that will make people naturally gravitate to the space. Public spaces have changed in their use from necessary to optional, so providers must understand the users' needs. In the participants' view, the new lifestyle in Muscat society needs good quality functional space. It needs to be provided according to their needs with a sensitive understanding of how people interact. Community representatives believed the quality of spaces has to be improved to expand their user groups. As mentioned earlier, the case studies are used more by the low income expatriates than by Omanis. Good quality visitor facilities are very important for Omanis. Today people in Muscat go to indoor shopping centres or shopping malls not only for shopping but as an outing. Providers

stressed the need to provide for basic needs such as clean toilets and good quality coffee shops in those spaces. They revealed that corruption in Muscat Municipality reaches even the existing toilet units by giving them to investors for conversion into coffee shops. This does not necessarily respond to the wide range of users' needs, as most of these coffee shops serve shisha[1] and thus target a very small group of male users.

A few of community representatives and some of academic interviewees claimed that there have to be events organised in those spaces by the government on national occasions to encourage the community, in order to build up their experience of using them more frequently. They also proposed that there should be a requirement to host weekly events, as it used to be in local traditional spaces and is currently the case in some successful Western examples. The government also needs to increase the awareness of the benefits of using public open spaces. Some of the community representatives believed it is all the government's responsibility to provide regular events in public spaces to encourage the community to use them. As academic interviewee states that the community do not have the awareness of using such spaces. They need an external factor to encourage them to use public open spaces which gradually will build a positive experience in using them.

Palace Square was considered by interviewees as not accessible due to lack of facilities and activities that would encourage users. Moreover, it is located in Muscat State away from the new developments where the majority of the residents live. Municipality Square is seen as certainly not a place for people with better incomes where they get an opportunity to spend their spare time in better quality built environment. The two existing cafes and restaurant were considered to be of very low quality. Interviewee no.18 reported that although the Ministries Plaza was not designed to be used for exercise, most visitors, particularly women, go there for keep-fit activities. However, interviewees found Muttrah Plaza the most used among the case studies due to its seaside location, as discussed in Chapter 5.

[1] Shisha is a way of smoking tobacco, sometimes mixed with fruit or molasses sugar, through a bowl and hose or tube.

7.6.7 Public participation in providing public open spaces

It was noted by interviewees that the planning system has taken a top-down approach. Public participation is still not implemented in Muscat, as mentioned in Chapter 4. There was a variety of views in this regard among interviewees. Most interviewees agreed that the public would only be involved at the informing stage to avoid problems during the implementation process, which is insufficient to provide liveable spaces. Unexpectedly, a professional from the Ministry of Housing thought that planning is a technical issue, and that it is therefore not acceptable to involve the community as they would not understand. It was clear from the interview process that there is a lack of knowledge about the importance of public participation in planning, even among professionals.

The Palace Square was designed and implemented by the Royal Court Affairs. In Palace Square there were many authorities involved. The interviewee from the Royal Court Affairs claimed to be very mindful of the community and informs them about the path of the royal route itself, which is a 50m zone. However, anything outside that zone was considered to be the responsibility of Muscat Municipality. Both organizations collaborated to inform the community about the planning and design of the square. The other cases were provided by Muscat Municipality. According to providers there was no kind of public involvement legislation or policy within this authority. Municipality Square, Ministries Plaza and Muttrah Plaza were examples of top-down processes. For most participants there is a need to encourage the community to participate in initiating those spaces rather than imposing them. Awareness of such rights has to be raised at both professional and community levels, according to most of the interviewees.

7.7 Evaluation of planning

As discussed in Chapter 2, and according to experience outside Oman, in order to provide liveable public open spaces, an aspiration to achieve these has to be set at a

very high level of the planning system and cascade down to the local level. According to participants in the interviews, the planning in Muscat is viewed as physical design rather than forward strategies and regulation in economic, social, environmental and political aspects. The planning system has not developed its plans' hierarchy, regulations, policies and strategies to meet all the planning challenges. There is no strategy for public open spaces that would organise and control the public open space provision. Authorities have been working separately, with different attitudes regarding the importance of public open spaces in the city. The Ministry of Housing, which is in effect the main planning authority, has very low appreciation of the importance of public open spaces in the city. According to most of the interviewees there is a desperate need for a major authority to pull together and coordinate the efforts of all the institutions involved.

7.8 Design aspects

The design of public open space has an important role in providing liveability (see Chapter 2). Apart from the Palace Square, Muscat Municipality designed and constructed the other case study projects in an extremely short time to meet certain deadlines, usually national day celebration (interviewees no.3, 7 and 11). They always provided the designs in a rush with no environmental, social and economic studies. Participants thought that the design of those spaces could be improves by drawing inspiration from the traditional and local culture design elements such as use of more colours, beautiful bright colour rather than grey and brown, and smaller spaces rather than big. They also felt that open space needs to be provided with good scenery and well-connected paths for walking and cycling. For the interviewees, place character, micro-climate, safety, maintenance and cleanness were the main design aspects which could enhance liveability, as is presented in the following subsections.

7.8.1 Place character

The old Omani architecture is based on simplicity. The traditional public open spaces were designed by the users themselves to meet multiple functions of their needs. Today public open spaces are no longer designed by the community. Most interviewees, including the community representatives, believed that most of squares and plazas are socially not accessible because of their design.

Interviewees agreed that the Palace Square is a landmark in its design. According to the Palace Square providers, the design was created to function as a formal arrival of head of states. Designers had to consider all the rules and protocol to fit the process and formality of head states arriving from all over the world, where such formalities differ slightly. The square was designed for the procession of heads of state arriving from the airport. It was located and designed to accommodate a highly defined ritual involving the collection by car of the visiting head of state by the prime minister, with both then being met by the Sultan outside Muscat gate, and a pedestrian arrival from this point which is joined by a band, horses and other cars. The procession passes through central Muscat to Palace Square, and then to the right where the guest complex is located. The pedestrian arrival has to take 10 to 15 minutes, due to the use of horses. The designers chose strategically where to locate the square and the guest complex according to the timing it would take to reach these.

Participants thought the square design itself is well defined but the square size is big and not in proportion to the palace. It does not feel comfortable for users (interviewee no.3). Arcades are inspired from the local architecture, however some interviewed architects thought the architecture is bulky and not respecting human scale. The majority found the layout, use of soft landscape and lighting are well provided. Having two roads crossing in it is a drawback in the design. However, this is only phase one of a more comprehensive project, and there are further plans to make it liveable and to have markets on Fridays and Thursdays, as there is already at Masjid Ali Mousa. The market will be to aimed at the tourist, including facilities such as book shop, souvenir shop, and coffee shop. The backs of the colonnades are designed to be perforated, so possibly in the future shops or cafes would be located

behind the colonnade. There is also the national museum which will be soon opened. The biggest problem at the location of the square in central Muscat, however, was parking.

Municipality Square is the first formally designed square as it is known today (interviewee no. 8). The design took into consideration the community activities. The Municipality used to have a city beautification project as part of targets for celebration of national day. Municipality Square was designed as part of the country national celebration. It is the oldest Monument in the Modern Oman Renaissance Era and showcases the Sultanate's commitment to modernisation. According to academic interviewees, it is the most symbolic design compared to the other case studies. The design aim of this square was to create a landmark at the end of a boulevard in the city commercial hub. To reflect that, the design provided a big digital screen on which to show stock exchange rates and entertainment shows. It was also designed with an open stage to be used for celebrations. For daily and weekly activities, the designer drew inspiration for one element from traditional culture, which was the two arcades that defined the square and were used by vendors as an element from traditional commerce. Two coffee shops and a restaurant were also provided to serve the users. The design was criticised by the majority of interviewees for the lack of shaded areas, which limited daytime usage.

Ministries Plaza and Muttrah Plaza were also part of beautification projects provided since they were empty areas along roads. According to providers of these spaces, the Ministries Plaza was designed to provide an attractive place in front of government and administrative buildings. Interviewee no. 8 said that *'although the Ministries Plaza area has very high economic land value, the Municipality prefer to reserve it as a beautiful space and frontage of the ministries district'*. It indeed softens the rigidness of the surrounding buildings. It was also designed to be used by the public, mainly by those who need to visit the ministries. Although there is parking space next to it, this normally stays empty. People will rather insist to search for parking as close as possible to the ministry's gate, since they still have walk through the gate and inside parking area. According to interviewees people have got used to the habit

of avoiding walking because they did not have well provided outdoor spaces in which will built good positive experience of walking. Urban design is still provided in a patchy way rather than as a comprehensive environment. *'In the evening the plaza feels even like a ghost area due to the lack of diversity in urban fabric of the surrounding'* (interviewee no.16). Although the design is not provided with walking and jogging lanes, most users mainly visit in the evening before it gets dark to exercise. Interviewee no.7 said that the Municipality did not take this into consideration in their adaption to the plaza (see Section 4.7.3). They only added the fountain and extra paving to the space. He revealed that the instruction was to provide a big and high enough fountain that could be seen from the highway and without any view breakers in front of it. Consequently, this part of the plaza feels uncomfortable for users because the fountain does not respect human scale, with considerable noise from the fountain since it jumps very high and from the highway due to lack of sound absorbing barriers.

Muttrah plaza, on other hand, was designed and modified several times (see Section 4.7.4). According to the providers of this space, the reason is that this plaza is part of the historical area and on the royal route to the Alalam Palace and royal visitors' complex. This project, according to providers, was designed as a relaxing place where the user is surrounded by the natural beauty of the natural wavy 3 kilometre stretch of coastline along the harbour. The main attractive element is Souq Al-thalam, which is famous for selling silver, gold and frankincense. The view of Muttrah fort, Muttrah seafront, Riyam Park and the harbour, and all the diverse urban fabric and activities such as fish market, fruit and vegetable market, hotels, restaurants, cafes are the key constituents and not the design itself – according to the interviewees.

7.8.2 Design to climate

All participants agreed that design must have good consideration of the climate. Interviewees were split in two opposing camps in judging the climate considerations

in the case study spaces. The displeased group claimed that they are not usable because of their Western design approach, by having domination of hard landscape. They added that they are very difficult to use in the mornings, especially in summer. Community representatives revealed that many people, especially from high income groups, do not use such places due to climate, as they could afford other options. Community representatives said that there are people in the community who not only found the design not appropriate to the climate but who had come to believe that it is not possible to have liveable open spaces in such climate. Moreover, those people are speedily growing as the indoor places are increasing every day – mostly among the younger generations, since they have not experienced good examples and since they are more connected to indoor leisure technology. This is could be a reason behind the lack of usage.

The pleased group of interviewees found all the case studies to be perfectly suited to the climate during the evenings most of the year, except during a few months in the summer. They thought that people are more attracted to these spaces in the evenings. To them, the hot humid climate is an excuse for some people, although interviewees believed that this is true only to some extent as there are at least five months in the year where weather is very pleasant and four months where it is bearable. A'Sahwa Gardens, which people use most of the year, was described as a very good example of this. Another example also mentioned is the seafront at Shatti AlQurm, which people use heavily for eight months of the year. An academic (interviewee no.19) said *'people in Muscat are pushed to live in indoor artificial environment shopping malls, it's a pity that if people need to go out they are force to go shopping'* (Aljabri and Smith 2013a). However, participants believed the design of the case study spaces could be improved further for better climate consideration. They suggested increasing the greenery that provides shade, and more careful selection of materials used to boost the thermal comfortable in the spaces. They also stressed that this must be continued by linking the space with its surroundings using the same concept.

Interviewees pointed out certain elements in each of the case study spaces in relation to micro-climate. Although the arcade in Palace Square gives a good shade, the

concrete used and the highly reflecting surfaces radiate heat. Both arcades are blocked at the outer edge, which blocked air circulation. The big open flat surface which is used for the royal arrival protocol creates an inconvenient thermal atmosphere for the users. Municipality Square was designed, as mentioned earlier, mainly for evening activity. An interviewee thought it does need landscape to soften up the space to make it more usable during mornings, especially in summer. The Ministries Plaza design has given good consideration to climate in the sense of use of landscape and materials. However, the part where the fountain is has less consideration of climate since it is dominated by hard landscape. Muttrah Plaza is dominated by hard landscape, but according to professionals, even the gazebos which are for users are beautiful but not carefully provided in terms of shade and material. *'At the time when they are mostly needed, the shade will be far from the bench and the bench is at boiling temperature'* (Interviewee no.18). It needed to be softened by providing more greenery; however, it was also considered to require cautious design that does not disturb the attractive views which are the key constituent of such place.

7.8.3 Safety

It is unlikely that design can create a crime-free environment, but good design could give users a comfortable safer feeling. Moreover, good design could minimise chances to commit crime or behave in an anti-social way. All participants certainly believed that generally safety is very high in public spaces in Muscat. Safety in Palace Square is the highest among all case studies. This is probably because of the high security of the palace itself. However, Municipality Square is the worst compared to the rest. Anti-social behaviour such as vandalism created an unsafe environment. Community representative interviewees explained that families feel unsafe in such an environment with such large groups of labour bachelor expatriates and teenagers. Participants considered Ministries Plaza with high safety, having security since it is a ministries area. Some professionals thought that for such reason women prefer to exercise there. The only perceived drawback of this plaza was lack of safety from road risk. Muttrah Plaza was considered with high safety levels not

due to security, but due to the high transparency in its design, as the plaza is very exposed to the street. On the other hand this creates road risk problem.

7.8.4 Maintenance and cleanness

Providers of open spaces revealed that maintenance has been a big financial concern in relation to public open space. Maintenance budgets are usually very limited, which has led to decline in the quality of the built environment, which in turn has had great impact on the space liveability (interviewee no.15). The lack of a notion of place keeping to maintain the space at a certain standard is compounded by maintenance being seen as a tiring task and a waste of resources for the authority in charge. This could be one of the reasons why the authorities have avoided providing similar spaces in the new developments. However, Palace Square is considered by participants as having the highest in place keeping standards because of its specific situation, as mentioned earlier. Participants stated that the Royal Court spends a far too much on maintaining and cleaning it. As mentioned in Chapter 2, places do not have to be very costly to keep them well maintained, but rather they have to be provided with ways to maintain themselves. Municipality Square was provided with facilities to finance its own upkeep, however, its income was not ring-fenced to the square. Low management led to lack of maintenance and cleanness, which is today a very big issue in this square. The two plazas were considered as with good maintenance and cleanness, but again with no deliberation on a place keeping scheme. According to some providers, having those two locations on the main street of the royal main route imposes a big pressure on Muscat Municipality to maintain them.

7.8.5 Evaluation of design elements

Design of the case study spaces gives more attention to their appearance rather than usage. The squares and plazas are designed with high quality construction materials. However, they do not do well in addressing the design to the local climate and users' needs, this being a big failure in the design of all case study spaces. According to interviewed professionals, the design of all the spaces lacked in promoting functions for users to stay and use them. Place keeping is another challenge, with it being either very costly, as in Palace Square, or not well managed, as in Municipality Square, where it has become a concern.

7.9 Conclusion

Interviewees thought that more in-depth thinking and consideration in providing public open spaces in Muscat is necessary in order to provide liveable spaces. Traditional open gathering spaces were far more used then modern examples because they were provided through bottom-up processes. Traditional spaces have gradually vanished in Muscat as they failed to adapt to the modified society. Modernisation occurred very fast in a relatively short time. New concepts of squares and plazas were imposed by the authorities as part of developing a national modernised city. All case studies have made good contributions to the city character and appearance. However, they have made very little contribution to the economy, environment and social life. Since square and plaza are new concepts, they have to be inspired from the traditional concepts as well as learning from the Western concepts, in order to understand the new modified culture and create liveable spaces.

Climate is a design challenge in Muscat. As society is more attracted to artificial environments, much more work must be done in this regard. However, this is not the only reason for lack of usage. There is a need to provide proper leisure facilities, and basic user facilities are essential to create liveable open public space. Even Palace Square as a tourist location failed to hold people around due to lack of leisure

facilities. The case studies are not well used by all community groups because providers did not consider users' needs. Involving the public in providing those spaces is a fundamental issue in creating liveable spaces.

The planning system is not well established with a clear hierarchy, and not well supported with plans and strategies. Therefore, providing public open spaces is not well addressed in the planning system, it is rather left over spaces between buildings. There are many bodies involved with their own ideas; there is a need for a single authority to pull together all different opinions of stakeholders and involve the community to create a vision of liveability in public open spaces. This authority has to legislate, and provide policies and strategies for providing liveable open spaces at very high level and then cascade down to the local level. It has also to supervise compliance with regulations in order to terminate corruption.

Chapter 8: Discussion of Key Findings and Conclusions

8.1. Introduction

This chapter brings together and synthesises the analysis of findings from the case studies introduced in the previous chapters in order to arrive at an overview of the liveability of public open spaces in Muscat. Using the knowledge learned from the Western and Middle Eastern understandings of liveability in public open space, the comprehensive analytical framework was created to measure and assess the empirical work. This chapter discusses the research objectives and questions based on the data collected from secondary data by reviewing literature and documents; and primary data by fieldwork on case studies which included urban design audit, urban design inventory, visual assessment, observation, behaviour mapping, questionnaire and structured interviews. Based on the findings, answers to the research questions are set out in this chapter, thus providing a basis for overall conclusions and a set of policy and guideline recommendations on promoting liveability in public open spaces in Muscat, which are provided in the next, concluding chapter.

8.2. Key findings and meeting the research objectives

This subsection discusses the key findings of the research that correspond to the research objectives and questions as established in Chapter 1.

Obj. 1: To review the concept of liveable public open space and the planning and urban design systems underpinning its provision.

Meeting the first objective and the related questions was the first stage of the research, which was addressed in Chapter 2 by reviewing the literature. It was conducted to gather essential knowledge about the topic and define the research

approach. The review investigated the different understanding and definitions of liveable public open space in the West and Middle East.

RQ.1.1: *How has liveable public open space been conceptualised and analysed in international literature produced in the West?*

A major growing emphasis was highlighted in the Western literature on the importance of quality in public open space. Evidence on environmental, economic and social benefits and the respective contributions of public open spaces in their cities has been growing. Researchers collectively agree that liveable public open spaces are good quality spaces. Quality in this sense includes both the physical built environment and the functional quality of the users' interaction with the space. The review helped define key concepts in social, economic and environmental/physical dimensions to analyse liveability of public open space. The social dimension includes concepts that enhanced social interaction, including familiarity with spaces, regular use, and the availability of facilities that give purpose to a space and improved its social thriving. public place identity, place justice, inclusiveness of public spaces, interethnic interaction, user oriented spaces, life-space-building order, bottom up approach, meeting other people, active engagement, public art, edge attraction and subspace, personal space, safety, provision for children and young people and gender consideration are social concepts which have evident impact in promoting liveability in public spaces. The economic dimension concepts look at the space mechanisms which promote long term functions of the space and boost its economic contribution such as place-making, place-keeping, mixed-use, networking or integration of transportation and space quality, food and drink provision, and existence of vendors. The environmental/physical dimension is concerned with concepts dealing with the overall appearance and comfort of the space and the way the physical environment influences uses through factors such as walkability, micro-climate, enclosure but no boundaries, soft edges, visual complexity, accessibility, urban form, landscape, human dimension, size and shape and water features.

Looking at the different types of public open spaces in the West, this study focused on squares and plazas. These two types of spaces were initially similar in their design layout and function. Both terms were used for the central open space in urban areas in front of public significance such as cathedral, church, administrative centre, city hall, courthouse and cinema house. Their design usually includes hard landscape, memorial structures or fountains and they are used for different purposes such as social gathering, trading and expressing military power. The British and Spanish colonisations introduced the square and plaza concepts into their colonised countries. The concept of plaza was transformed in the USA by American developers as a public space associated with commercial development. This modified version of plaza was then exported to the world including Europe. Henceforth, the term 'plaza' has tended to represent open spaces allocated within commercial areas. However, new functions have appeared in such spaces during time including tourism, celebrations, festivals and civil demonstrations. Today, European squares and plazas have become privileged spaces, which attract tourists beside their commercial and leisure functions. Some have achieved fame, not only nationally but worldwide. The literature review showed that Western squares and plazas are increasingly used to socialise and relax rather than necessary activities. Providing the conditions for such types of activities in squares and plazas is therefore essential if 'liveable' spaces are to be created.

RQ.1.2: *How has liveable public open space been conceptualised and analysed in international literature produced in the Middle East context?*

Two design approaches for providing public open spaces were found in reviewing the literature about the Middle East: the traditional and modern approaches. The traditional approach was provided in the Islamic era. Planning during this era emerged as a system which was strongly controlled by Sharī'ah to serve users' needs and activities. Privacy, waqf and users' responsibility were the main driving concepts from Sharī'ah in providing the built environment, beside natural laws, and social and functional principles. Public open spaces were owned by all Muslims; therefore,

users were the main providers of their public space governed by socially accepted planning principles. In this sense, distinctive types of public open spaces were developed. Maydan, sahah and fina are the main traditional public open spaces of the traditional Islamic city. Maydan was an open area in front of a recognised building, mostly the jamia'a, souq and castle or fort. This space was relatively large. It was used for different activities, as extended space for praying, daily and occasional gathering, celebrations, weddings, occasional market and funeral. However, sahah or fina were relatively smaller than maydan. While sahah is public space that functioned as gathering space and occasional market, fina is semi-public, located within a residential area used and governed exclusively by the dwellers of the surrounding residential units.

However, new Western design concepts of public open spaces such as squares and plazas were introduced in the region during the colonial and post-colonial era. The independence of Middle-Eastern countries coincided with their economic prosperity from discovering oil in the region. This accelerated modernisation in the region in order to catch up with the new social and economic requirements. Modernity and globalisation have dramatically weakened the traditional concepts and have enhanced and expanded the implementation of Western design concepts and provision systems for public open spaces in the region. Although Middle Eastern literature is not as extensive or as deep as the Western, it highlighted fewer but similar concepts of liveable spaces.

RQ.1.3: *What planning and urban design approaches have developed around providing liveable public open space in the West?*

The concern about public open space quality emerged in the West in the 1880s responses to the poor sanitary conditions. This enhanced public open space position in the Western planning system by providing policies to conserve and improve their quality. In the 1920s, designing cities around roads and zoning planning were introduced by Le Corbusier and other Modernist planers, and spread all over the

world. Unexpectedly, this resulted in a decline in the quality of life in public spaces in the cities. The first major steps to recover the social life of public spaces were pointed out by Jacobs (1961), followed by Whyte (1980-1990). Since then, a growing number of researcher have been concerned with the need to enhance public spaces in order to enhance public life in cities. Today there is a great and growing appreciation of liveable public spaces in presenting the image and life of the city. In the best practice of planning systems in developed countries, there are policies for the provision of public open spaces at high national level, which are then taken down into local level. Public open space is also supported by strategies, guidelines, plans and policies. The provision process of liveable open spaces is decentralised to involved stakeholders, including communities, in the different levels of the planning system.

RQ. 1.4: *What planning and urban design approaches have developed around providing liveable public open space in the Middle East?*

Today planning and urban design practice in the Middle Eastern cities are no longer traditional; they are rather influenced by the Western system. However, the planning systems in the Middle East are not as advanced as the Western. They are not well structured in hierarchy. Public open space is no longer owned and provided by users; they are rather owned by states and provided by public authorities as 'super guidance' in deciding what is best for people, without engaging them in the provision process. Squares and plazas are new concepts introduced in the region as part of the modernisation movement. However, the provision of squares and plazas is not supported by strategies, plans and policies in order to promote liveability.

Obj. 2: To develop an analytical framework for liveable public open space from the Western and Middle Eastern experience.

In order to understand what concepts underpin liveable public open space, an evaluation framework was developed by looking at concepts for providing liveable pubic open spaces in Western and Middle Eastern literature. This objective was addressed in Chapter 3.

R.Q. 2.1: *How can the concepts of liveable public open space be analysed in a Middle East context?*

The analytical framework was designed to organise the empirical work by providing a practical tool to evaluate case study spaces using the concepts learned from the literature. The learned concepts were classified as concepts to reinforce the way built environment influences the usage of the space; the way users interact with the space and with each other in the space; and the way of implementing them in planning and urban design practice. The analytical framework was classified into three sub-divisions, which include: (1) concepts which looked at delivering liveability through design, arranged as an assessment tool to evaluate the physical design of the case study spaces; (2) concepts dealing with how users experience and use liveable spaces, which were organised to assess the satisfaction of the case study spaces users; and (3) concepts which relate to developing effective planning and urban design practice in creating liveable public open spaces, which were structured to be used in evaluating the case study spaces through reviewing documents on the planning and design of these spaces and providers' perceptions. This division was used as a guiding structure for assessing data from the empirical work. A social constructionist theoretical perspective was embedded in designing the mixed methods strategy of qualitative and quantitative techniques and the selection of data collection tools.

Obj. 3: To examine the extent to which liveable public open space is being provided in the Middle East, in particular in Muscat, using the above analytical framework.

In order to assess liveability the selected case study spaces were evaluated from professionals' and users perceptions in Chapter 5 and 6. Both assessments were focused on the physical quality of the space built environment and the functional quality of interaction between the users and the space.

R.Q. 3.1: *To what extent are the current public open spaces in Muscat liveable, from a professional's perspective?*

The first part of Chapter 5, assessing the quality of the physical built environment, provided the findings from analysis of the case study spaces using a set of methods comprising urban design audit, urban design inventory and visual assessment. The functional quality was assessed in the second part of the same chapter by observation and behaviour mapping. From the evaluation of the quality of squares and plazas in Muscat, it was clear that the physical attractiveness of the spaces appearance were highly taken care of, over the functional part. The locations of the case studies do not encourage liveability due to not being located in mixed-use urban fabric, and not being well connected to their surroundings through walkways and cycling networks. Weaknesses in climate considerations and recreation facilities are the major drawbacks in the physical provision of these spaces. There is no sensitive tackling of the layout design of trees, shades, selection of materials, and fountains with deep understanding of sun movement and wind directions in different seasons to create comfortable thermal environments in the case study spaces. The studied squares and plazas failed in effectively engaging and encouraging users to stay longer. In addition, the spaces illustrated social exclusion, as observation showed dominant users in the spaces, with non-Omanis prevailing over Omanis, and male over female users.

R.Q. 3.2: *To what extent are the current public open spaces in Muscat liveable, from a user's perspective?*

Data analysis of the users' questionnaire presents their perception on the physical and functional quality of the case study spaces in Chapter 6. Although the current study is based on a small sample of participants, the findings suggest that there is a strong influence of the planning and urban design processes in providing the squares and plazas on their current situation. Users strongly felt that the case study spaces are landmarks and positively contributed to the city structure. However, they reported that these spaces were not provided for them and that they do not meet their requirements. Lack of user facilities such as toilets, and food and drink provision, were raised as issues at the very top of users' priority lists of requirements in all case study spaces. The case study spaces do not provide diversity of opportunity in recreation activities, which would encourage active engagement with the spaces. Cars are given priority by design over pedestrian walkways, and cycling paths are missing in all case study spaces. The squares and plazas are used less in summer and at midday, as they are designed with low consideration of climate. They do not display creativity in providing solutions to cope with climate. There is an imbalance in the societal groups represented among users, as in three of the case studies most of the users were from expatriate, male and low income groups. People from higher incomes prefer spaces that provide good quality facilities, therefore, they would rather use closed shopping centres where they find quality and facilities.

Obj. 4: To examine the effectiveness of planning and urban design practice in providing liveable public open space in Muscat through detailed case studies of selected squares and plazas, applying the above analytical framework.

To achieve a comprehensive evaluation of planning and urban design practice in providing liveable public open space in Muscat, documents were reviewed in Chapter 4 and professionals were interviewed in Chapter 7. While the document review provided a clear understanding of the provision system and explored the way

it promotes liveability, the interviews with professionals provided their perceptions of the provision system and helped identify the weaknesses in promoting liveability in current planning and urban design practice in Oman.

R.Q. 4.1: *Why is public open space in the Middle East the way it is?*

Muscat is an example of a Middle-Eastern country where this research reveals the limitations in providing liveable public open spaces through the planning system. Traditional public open spaces in Oman were designed to meet the needs of users. There were different types of open spaces associated with three main concepts; religion, social and commerce. They were also used as everyday gathering spaces within the market space. They were located in the centre of the settlement near to jamia'a or masjid, souq and fort. Their built environment was very humble, with no physical memorable elements such as monument or fountain. They were rather simple areas, some with a few trees. However, the city has lost a large part of its traditional spaces as most of those spaces in Muscat were replaced with new developments for modernisation purposes. Although new public open spaces concepts such as squares and plazas were adopted from the West, they are not as well used as in the Western experience. Weakness in legislating the provision of public open spaces in the planning system has reflected in their current quality.

R.Q. 4.2: *What is the process whereby public open space is provided in the Middle East?*

Oman is an example of this phenomenon. Different authorities have overlapping roles in providing public open spaces in the city, including Ministry of Housing, Muscat Municipality, the Supreme Committee for Town Planning (recently revoked). Indeed, the Supreme Council for Planning has just been formed and it has not yet influenced the current situation at the time of writing. It is clear that the planning process has been dominated by the Ministry of Housing in providing physical master plans and Muscat Municipality in providing services. The planning system in the 80s

was controlled by strategies. However, increasing pressure for development to meet urgent residential and economic urgent needs, has gradually led the planning process to neglect other priorities and become a *plan as you need* strategy.

There is a lack of comprehensive national planning, structured planning and strategic planning for providing public open spaces. There is no clear understanding of planning; most of the planning is urban design. Meeting residential targets overshadowed the other planning objectives in Muscat. Randomly, plots within residential districts were given by Ministry of Housing to the Muscat Municipality to be provided as public open spaces without in depth thinking of the accessibility, type of public space, and usage. There is imbalance in the urban fabric of the city and a lack of public open spaces in all new development. They are not viewed as necessary space in the urban fabric with social, environmental and economic functions. Consequently, Muscat Municipality has been coming up with different types of open spaces for these plots. Squares and plazas are viewed as beautification showpieces in the city structure, developed to please high authorities, a view which was also emphasised by the findings from the users' questionnaire. Yet some of the spaces were part of highway restricted areas and not planned to be public space. However, Muscat Municipality missed the chance of providing liveable squares or plazas as part of development projects such as markets areas, where they are all dominated by roads and car parking.

R.Q. 4.3: *What are the weaknesses in the planning and urban design to provide liveable public open space in the Middle East?*

The question was answered by analysing data from interviewing providers and from other methods. Weaknesses in all case study spaces were reflected in weaknesses in the open space provision system, as reported by interviewees. The absence of a well-structured planning system that specifies the provision of liveability in public open spaces in its different hierarchy levels is the main failure. In addition, there is lack of sufficient cooperation between different authorities and lack of a main higher

authority with clear mandate that pulls together and organises the overlapping responsibilities from different authorities. In addition, there is lack of general planning guidance for the different authorities with overlapping responsibilities. Planning is mostly practiced as urban design by providing physical master plans rather than formal forward social, economic and environmental strategic planning. The inadequate planning system fails in providing a national plan and a set of strategic plans that control the development of the city and promotes quality in public open spaces. There is no specific strategy for providing open spaces in Muscat. Lack of knowledge in the meaning and importance of public open spaces was exposed. Understanding of the design concepts and functions of squares and plazas is unclear among experts and providers.

Although climate is a key challenge in the Middle East, micro climate is not well considered in providing public open spaces in Muscat. The design of squares and plazas does not incorporate innovative solutions to provide thermal comfort for users. Public open spaces are isolated from their surroundings because they are not well connected by walking and cycling network. All the case study spaces are provided in spaces left between buildings, and are not the core of the urban context around which the surroundings evolved. In addition, lack of users' facilities such as toilets have led to social groups including high income, women and children abandoning squares and plazas. The case study spaces failed in providing users with necessary, optional and social activities. They are not user- oriented spaces as they are lacking in functions. None of the case study spaces were good at engaging the users to stay in the space for long. Most of the users were passing by. Public participation is still not implemented in providing public open spaces. Economic aspects are totally missing in the planning, design and management of these spaces. The spaces are not provided with long term management, which led in one case to a decline in maintenance and cleanness standards which negatively affected the space usage. The spaces are not functional spaces where people experience different activities in them. Commercial and recreational activities are missing in the surrounding urban fabric.

Obj. 5: To draw lessons from the Omani case study and recommend guiding principles to enhance the existing and the future development of public open spaces in Middle-Eastern cities.

From the evaluation of the Muscat context there are several main lessons which can be drawn out as the basis for recommendations for enhancing the existing and future development of public open spaces in Middle Eastern cities.

R.Q. 5.1: *To what extent are conditions for liveable public open space specific to an area, eg. the Middle East?*

From the case study of Muscat there are several conditions which could be learned for liveable public open spaces in the Middle East. The challenge is not in choosing traditional or Western modern concepts; it is rather in critically implementing what is the appropriate response to the contemporary social, environmental and economic requirements of local communities. Throughout history, Islamic planning principles absorbed and implemented local design concepts from all the territories where they prevailed, from India to Spain. Today, the planning system has to learn from the traditional concepts and to be innovative in using modern Western concepts in providing their contemporary planning approach.

R.Q. 5.2: *What improvements can be made to the planning and urban design systems in Oman to achieve appropriate liveable public open space?*

Analysis across the empirical work leads to some key recommendations. The research has addressed planning principles and urban design concepts that are embedded in the traditional approach, and the implementation of which would enhance the liveability of public open space. Planning principles such as users' responsibility and bottom-up processes are equivalent to public involvement in modern understanding. The traditional planning principle of natural law is equivalent

to environmental consideration. Design concepts such as considering climate, respecting pedestrian scale, space with function, social value such as respecting personal space are modern concept that also was embedded in traditional cities in the Middle East. Providing spaces associated with commercial activities such as an occasional market for Eid and Ramadhan is a core concept of liveable public open spaces in the region. However, these concepts must not be provided in their traditional copy, they rather have to be advanced to meet modern contemporary users' needs.

The research has also addressed Modern planning principles and design concepts, the implementation of which would help ensure liveability in public open spaces in Muscat. Primarily, the planning system has to be structured around authorities at different hierarchy levels, thus allowing the formulation of policies to promote public open spaces and their liveability at the appropriate level. The planning system must introduce strategy that guides the public open space provision and quality. Extra attention has to be given to socio-economic value in providing public open space. Authorities have to involve community and other stakeholders to provide plans and strategies that implement policies. To achieve sufficient public participation, this has to be done in two directions: first authorities have to involve community in the decision-making process in planning, and secondly the community have to be educated to stand for their rights and be heard about their built environment. Policies at high level must be taken down to the lower local level as design concepts to be implemented in developments to provide liveability. There is a desperate need for a development plan within a comprehensive and flexible planning system which defines objectives and strategies. Modern design concepts that have been found in this research to be relevant in improving liveability of public open space in the Middle East are walkability, 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 liveability. Place keeping is essential in order to ensure long term liveability. Good quality facilities such as toilets, coffee shops,

stalls, playground, shops, and vendors are essential in improving social activities in any public space.

8.3. Conclusion

After discussing the lessons from the analysis, this chapter has arrived at the overall conclusion that in order to promote liveability in squares and plazas in Muscat, the planning and urban design system has to be enhanced. Rapid development and inexperienced adoption of Western approach had created major planning problems, with public open space being one of them. It is not enough to adopt designs based on successful experience elsewhere; there has to be deeper understanding of the local social, environmental and economic situations and implementation that corresponds to contemporary users' needs. One of the more significant findings to emerge from this study is that there is no explicit use of quality concepts within planning strategies which promote liveability in public space. Another important finding is that spaces in Muscat have a good appearance, but are not more widely and frequently used because they are missing basic users' needs, and leisure facilities which give spaces functional meaning for the users. The most obvious finding to emerge from this study is that the urban context of a public space is significant to enhance the quality of user engagement in the space, such as spaces in mixed urban fabric.

Chapter 9: Final Conclusions and Reflections

9.1 Introduction

This chapter synthesises the achievement of objectives of this research to attain the overall research aim. This thesis intends to answer the research question, to what extent does the current planning and urban design approach in the Middle East provide liveable public open space, in particular in the case of Oman? This chapter discusses the research general findings, research theory, hypotheses and conclusions, which are based on the analysis of collected data. On the basis of the conclusions, it proposes a set of policy and guideline recommendations on promoting liveability in public open spaces in Muscat. This social research is concerned with liveability of public open spaces from the planning and urban design perspectives. In this regard, the chapter reflects on the limitations of this study and proposes a focus for further research. The chapter ends with a final statement reflecting on the topic of liveable public open spaces in the Middle East.

9.2 Research theory and design

The question of whether the findings from this social research can inform theory is not easy to answer. This is related to the contribution of research findings to knowledge, theory, methodology and learning. In this section an attempt is made to locate the findings of this research within the context of this debate. This research used a combined two-way approach. First, it created an analytical framework from the knowledge learned in the Western and Middle Eastern literature, to examine it in Muscat context. The developed analytical framework is a highly practical tool which could be utilized in other future research on public spaces in the Middle East. However, in this study, the next step was not to blindly implement the framework on the case study spaces; rather, it attempted to balance application of the framework with development of a deep understanding of the nature of the case study context by, to a certain extent, using grounded theory to draw findings from the empirical work.

An inductive approach and use of grounded theory approach were drawn on to analyse the data and to generate theory. Implementing mixed methods has allowed the emergence of empirical insights on which to base generalisation. Yet further research is essential before fuller theory can be developed from the findings of this research.

The hypothesis formulated in Chapter 1 was also guided by the researcher's observation of the low usage of squares and plazas in Muscat, which motivated the researcher to investigate further in this field and to undertake this PhD research. As discussed earlier, the research findings have supported the hypothesis that *'weakness in planning and urban design practice has promoted less liveable squares and plazas in Muscat'*. Findings revealed that current planning and urban design practice in Muscat did not promote liveability in any of the case study spaces.

9.3 Contribution of the research

This research intends to make contributions in several areas:

The research aspires to make a contribution to the international literature and knowledge by exploring planning and urban design practice in providing liveable public open spaces in a Middle Eastern context. It brings fresh evidence and new insights to this issue with a focus on Omani squares and plazas in comparison with international experience. The experiences summarized from the West, Middle East and Oman will hopefully make important contributions to the planning and urban design theories for other developing Arab and Muslims countries.

This research aims to make a contribution through developing and demonstrating an analytical framework which could be utilized as a straight-forward analytical structure by other researchers in the future undertaking similar projects. The study also developed practical policy recommendations, which could influence the future planning and urban design practices in Oman and other Middle East countries. Its aim is that such developed framework would add to theory of providing liveable

public open space as a result of urban design and planning processes, in different contexts internationally.

This study constitutes ground-breaking research on the provision and characteristics of liveable public open spaces in Oman, specifically squares and plazas. This research revealed novel findings regarding the impact of planning and urban design on creating liveable public open spaces in this socio-cultural context. It provides empirical data on conditions and usage of public open spaces in Oman, as well as on the details of the planning and urban design processes whereby such spaces have been provided, which had not heretofore been collected and analysed.

9.4 Policy and guideline recommendations

Based on the findings of this research, the researcher would like to put a set of forward recommendations that are directed to the planning authorities to enhance liveability of public open spaces in Oman. 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. Public open spaces planning policy has to be set at national level in Oman so as to '*Ensure public open spaces are liveable places where different groups of community in individual and in group can meet, enjoy, play and festive'* Whyte (1980-1999), Shaftoe (2008) (Madanipour 2010a) and (Gehl, 2007-2010). From this national planning policy, a strategy of public open space has to be provided to promote cross departmental and partnership working to maximise the potential of liveability in the existing and new public open spaces as following.

The strategy for public open spaces

- Provide guidelines for the provision of public open spaces including types, conditions, management plan and proportion per capita in developments.

- Provide design guidelines and codes for public open spaces which correspond to the social, environmental and economic needs.
- Increase awareness of importance of public open spaces among professionals.
- Involve stakeholders and community in the providing system.
- Increase public awareness of the need of public open spaces and the role of their participation in the providing system.

At the local level, for Muscat Municipality a set of policies is suggested for the local plan. These policies are based on the findings from this research, and are suggested to ensure the implementation of the national policy and public open space strategy on local developments.

Policy 1: *Ensure good quality design*

- Ensure the urban design of public open space provides good imageability, enclosure, human scale, transparency and complexity.
- Provide public art that reflects social and national values.
- Provide spaces that respect human scale.
- Ensure visual and physical accessibility.
- Provide a long term place keeping plan for each public open space to maintain the standard of the space and its users' facilities.

Policy 2: *Ensure the provision of social needs*

- Involve all groups of community in the local plan for public open spaces.
- Provide for security and safety in the design.
- Ensure the design is family friendly by promoting facilities for children, young people, women and elderly people.
- Provide design that respects the local social values such as personal distance between different genders.

Policy 3: *Ensure the provision of public open spaces are considering local climate*

- Use soft landscape such as plants, trees and hard landscape including water features, and ensure the overall materials used increase thermal comfort in the space.
- Design the layout to enhance the thermal comfort by creating small size spaces/ sub-spaces.
- Ensure the spaces, especially the seating areas, are well shaded during midday.
- Ensure the walkways and cycling paths are also shaded using trees.

Policy 4: *Ensure the provision of public open space correspond to the environmental aspects*

- Increase public awareness on the environmental and health issues in relation to walking, and cycling.
- Provide good quality car free areas that encourage people to walk and cycle.
- Encourage walkability by providing continuous links of pedestrian networks and cycle paths between the public open space and the surrounding neighbourhood and amenities.
- Provide public transport systems which link public open spaces to their surroundings and other amenities.

Policy 5: *Ensure the public open space corresponds to the economic needs*

- Provide public open spaces, especially squares and plazas, within mixed-use urban fabric.
- Ensure the provision of soft edges and leisure activities.

- Ensure provision of good quality of food and drink services in the public open spaces.
- Provide long term management of public open space with involvement of the local community.

9.5 Methodological limitations and direction for further research

A number of caveats 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 background. However, the lack of previous empirical studies on public open spaces in Muscat represents an important limitation. Since some techniques in this research were based on a perceptual approach, there are limits to the results where there is room for subjectivity. This was overcome by undertaking the perceptual analysis of the physical product by a team of professionals; nevertheless, this then gives the professional perspective. Although these tools are highly designed for professionals, it would be useful for future research to adapt and use such tools with non-professionals to illustrate people's evaluation in comparison to the professional.

The process of collecting primary data was influenced by a number of challenges. Field trip time limitation was an issue that caused overlapping of tasks. The underdeveloped understanding of the concepts 'planning', 'urban design', 'square' and 'plaza' among most of the professional interviewees was a challenge to this research. Therefore, limited and, sometimes, irrelevant answers were provided. This caused the author to have to explain to most of the interviewees in order to collect sufficient data to inform the research objectives.

A major constraint in implementing the methodology was in conducting the questionnaire. The researcher had to skip some participants selected according to the random selection pattern due to communication problems, especially in Municipality

Square. As mentioned earlier most of the users in this square were expatriates. In many cases they spoke neither Arabic nor English. This affected the results drawn 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 the spaces, i.e. to find out why they do not use them. The current study has only examined users in the selected spaces. However, community representatives were interviewed to find out from their experience with their community whether there are social groups which do not use these spaces and why. Therefore, it is essential to carry on 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 open spaces in Oman.

9.6 Further research

As well as responding to research questions, this study raises new ones for further research in relation to liveable public open space and planning and urban design practice in context of Muscat. As this research missed users who were non-Arabic and non-English speakers, an in-depth study of users from all different ethnic backgrounds would be worthwhile to conduct, thus gathering more widely representative data on space users. Further research and deeper wider probing about social perceptions of the different types of public open spaces is needed to allow detailed comparative studies on why, and why not, people in Muscat use public open spaces.

Providing thermal comfort for users of open spaces was one of the main findings from the study of liveable open spaces in Muscat. Future research could thus examine the design factors that would help achieve comfortable thermal conditions to enhance round use of public open spaces in the Middle East. This research focused

on users' perceptions of squares and plazas in Muscat. Future research could therefore examine changing public perceptions of public open space in general in Oman to identify key means of promoting wider social engagement with public open space. This research also focused on the weakness in the planning process in providing public open spaces. More in-depth research could be conducted on the organisational and legal aspects of provision of public open space, with a view to finding ways of achieving the stronger coordination and cooperation recommended within the current institutional arrangements in Oman.

9.7 Closing statement

Public open spaces are substantial spatial elements of any city structure which fundamentally shape social life in it. Essentially, this research provides one of the first, if not the first, study to evaluate the influence of planning and urban design in providing liveable public open spaces in Muscat. The findings from this thesis highlight weaknesses and identify areas for improvement in order to enhance liveability in squares and plazas in Muscat and other Middle Eastern cities. There is scope to reinstate some traditional forms of public space, however, this on its own would not be an appropriate solution as the society has changed and globalization has affected their life style. Nevertheless, deep understanding of the new society needs and their national identity values, which are represented in religion, social and cultural tradition factors are substantial in developing successful public open spaces in the region. This, on other hand, is similar to the traditional concept of users' responsibility in producing public open spaces. In addition, respecting the environmental, economic and social values are fundamental issues which have to be carefully considered in providing public spaces in the Middle Eastern region. Such factors and values have to be carefully addressed in the different levels of the planning system and supported by guidelines, policies and plans.

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Appendix A: Square and Plaza concepts in the West

One definition of a square is *'public spaces that derive a unique identity from the building, structure, and landscape that enclose them and give them form. Their identity is also derived from the people that occupy the buildings and spaces and the uses they put them to'* (Corbett 2004 p:8). Squares are designed and landscaped within a city, and are crucially well integrated with the surrounding built environment through their use and design, which encourages crowds to gather in them to create a sense of community (Corbett 2004). The specificity of European squares derives from their level of artistic and architectural achievement, and their historical value. Today, European squares have become privileged spaces, which attract tourist beside their commercial and leisure function. Some squares in Europe have achieved fame, not only nationally but worldwide; e.g. the Piazza San Pietro in Rome, Trafalgar Square in London, Washington Square in Manhattan, Place de la Concorde in Paris, Piazza San Marco in Venice, Plaza de España in Sevilla, as shown in Figure 2.1 to 2.7 (Levy 2008,Woolley 2003 and Corbett 2004).

Figure A.1: Piazza San Pietro in Rome, Italy
(Source: http://fc03.deviantart.net/fs71/i/2010/243/2/9/piazza_san_pietro___roma_by_cypno-d2xowa9.jpg)

Figure A.2 Trafalgar Square in London, UK
(Source: http://www.londonthisweekend.co.uk/uploads/3/6/6/7/3667526/3245539_orig.jpg)

Figure A.3: Washington Square in Manhattan, USA
(Source: http://upload.wikimedia.org/wikipedia/commons/b/be/NYC_-_Washington_Square_Park.JPG)

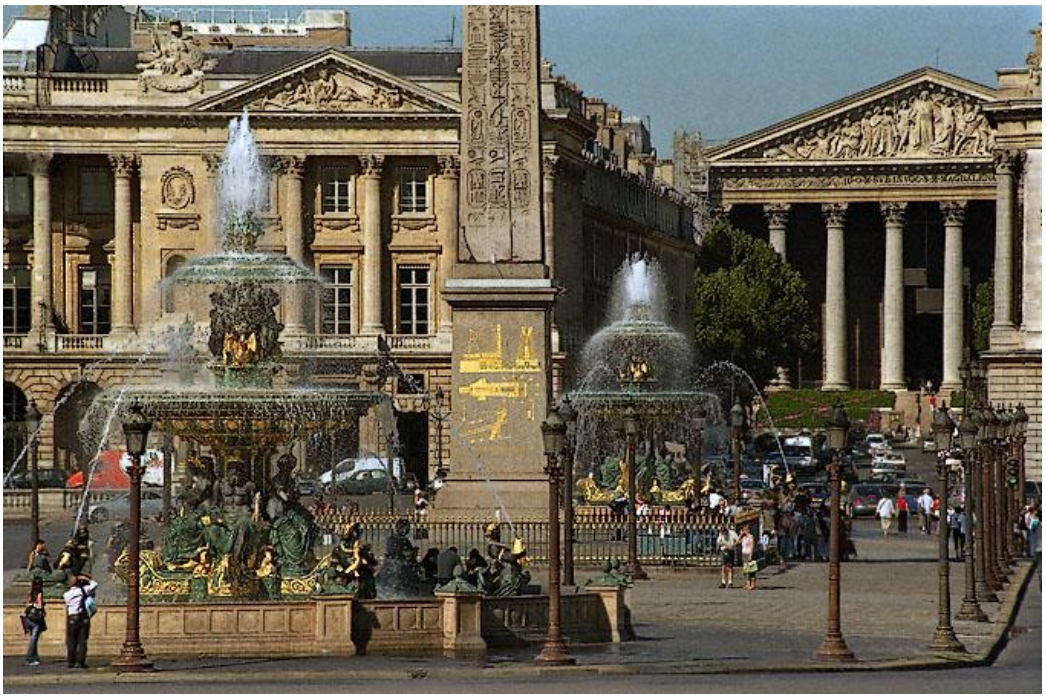

Figure A.4: Place de la Concorde in Paris
(Source: http://davidphenry.com/Paris/PlaceDeLaConcordeHoriz.jpg)

Figure A.5: Piazza San Marco in Venice, Italy
(Source: http://upload.wikimedia.org/wikipedia/commons/0/05/Venice_-_Piazza_San_Marco.jpg)

Figure A.6: Plaza de Espana in Sevilla, Spain
(Source: http://4.bp.blogspot.com/-rjo4Sj6NeTs/T0GJ5FF9zEI/AAAAAAAAAs4/h1I3AT4oFIg/s1600/Plaza-de-Espaa-de-Sevilla-a22918991.jpg)

Figure A.7: Victoria Square in Birmingham
(Source: http://s.imwx.com/dru/2013/07/2239c645-4297-48af-9498-0ca7df907548_650x366.jpg)

There is a large volume of published studies describing squares in mediaeval European towns as major open spaces surrounded by major public amenities such as a churches, customs' houses, hospitals, royal courts and town halls. Squares during this era have been described as forming the attractive heart of cities, and were mainly used for trading purposes (Madanipour 2010a). Cities were surrounded with thick walls to protect the citizens. The public was left with limited access to public space, which made the square very popular and so it was densely used. This contributed additional functions to the space such as a temporary market and social demonstrations and events. Initially, squares were established at route intersections, becoming market places, where ideas, news and information were exchanged and developed (Levy 2008). The square developed as a public space, representing the wealth and the power of the city and also gaining military importance, because it displayed their power with military processions and parades. Such uses continued into the 20th century in some European squares, such as Red Square in Moscow, which is still used for the annual May Day parade on the anniversary of the capitulation of Nazi Germany in 1945 (Woolley 2003). Until the 16th century,

squares were located in the heart of European towns and had civic, political, religious, commercial and sporting competition functions. Later, cultural and leisure functions were significantly reinforced in squares (Levy 2008).

Due to urban expansion in 18th and 19th century, squares were also located in prestigious residential areas. In the 15th and 18th centuries, European colonisation exported the concept of the British square, the Spanish plaza and the Italian piazza (de Boccard 1978: cited in Levy 2008). Plazas were usually used for ceremonial purposes, enhancing the reputation of the State and evoking national pride and involvement, such as parades, coronations, festivals (Orum & Neal 2010). The plaza concept has been transferred to other countries, such as Latin America as a consequence of colonisation. The Plaza Mayor in Mexico City is a good example, as it is a reincarnation of the Plaza Mayor in Valladolid (see Figures 2.8 and 2.9).

Figure A.8: Plaza Mayor in Valladolid in Spain (Source: http://www.disfrutavalladolid.com/fotos/plaza-mayor.jpg)

Figure A.9: Plaza Mayor in Mexico City (Source: http://www.planetware.com/mexico-city/zocalo-plaza-de-la-constitucion-mex-df-z.htm)

In modern times theatres, cinemas, restaurants, and museums have generally been located around city squares (Goodman & Goodman 1960; Collins 1965; Woolley 2003; Levy 2008). During World War II many European squares were destroyed, however, some squares survived, and others were rebuilt (i.e. Frankfurt and Warsaw's market squares) (see Figure 2.10) (Levy 2008). Europe has many more squares than the USA, due to the differences in cultural, technology and urban styling (Levy 2008).

Figure A.10: Warsaw's market square
(Source: http://imgc.allpostersimages.com/images/P-473-488-90/21/2189/RDFAD00Z/posters/krzysztof-dydynski-summertime-open-air-outdoor-cafes-on-old-market-square-warsaw-mazowieckie-poland.jpg)

The concept of the plaza was introduced to America through Spanish colonisation (Woolley 2003). It was then adopted by US city planners. Since 1961, in New York, developers who provided an open space were given bonuses of ten square feet of commercial space, over and above the amount usually allowed by zoning, for each square foot of plaza. Consequently, this created plazas in association with apartments and office buildings; such as the Rockefeller Plaza and the Seagram Plaza (see figure 2.11 and 2.12). This slightly modified the plaza concept. This adjusted US inspired concept of the plaza was then exported all over the world, including back to Europe. The term plaza evolved in the US and the UK to denote a space falling between commercial buildings or offices or a market area.

Figure A.11: The Rockefeller Plaza (Source: http://www.essential-new-york-city-guide.com/rockefeller-center.html)

Figure A.12: The Seagram Plaza
(Source: http://places.designobserver.com/feature/seagram-union-of-building-and-landscape/37758/)

All over the world there is human need to be in the heart of city, to be able to interact with other people, or admire and be inspired by the built environment (Levy 2008). There is no specific shape for squares or plazas, as most are clearly defined by surrounding built environment and connect to the street pattern (Woolley 2003). Latin squares were designed without vegetation while Anglo-Saxon squares include features of nature (Levy 2008). The Italian piazzas are better designed to cope with the micro-climate compared to those in North and Central Europe. European squares were deliberately designed to be part of the urban fabric, widening thoroughfares around landmarks such as fountains, memorials or statues (Heckscher 1977: cited in Woolley 2003). Plazas in America result from the omission of buildings in the city grid.

However, the uses of squares and plazas have transformed from being trading, military or work-oriented spaces, to enjoyable leisure spaces (Goodman & Goodman 1960) and (Gehl 2007). In the 1980s, some European squares were transformed into car parks, although cars were expelled from some European city centres (Levy 2008). Copenhagen is a good example of a city that has pedestrianised its city centre. Cars were first gradually restricted from the city square in Copenhagen, giving the public a space in which to anticipate political and cultural events for the purposes of recreation and enjoyment (Gehl 2007). Over four decades the square has gradually extended from being used in this way every summer to being used year round as a place for enjoyment (Gehl 2007).

Appendix B: The planning system in the UK

The UK system is based on three key elements, which provide opportunities for authorities to establish their vision for public spaces (Carmona et al. 2004):

Development Plans: This is the planning system. It outlines the way in which places need to adapt in the future. It provides guidance concerning the provision of open spaces as part of new development and makes clear how much, of what type and quality, and also which accessibility requirements need to be in place. Planning authorities and developers must aim to produce new open spaces fit for purpose, and which can be maintained and prove sustainable over the long term. They should be well designed, built to a high standard and capable of adapting to reflect changes in the needs and requirements of users.

Development Management: This is the decision making process for planning applications. Legislation requires decisions on planning applications to be directed by policies within the development plan. Local planning authorities and developers need to attempt to create and enhance networks between open spaces and avoid fragmentation. Together, planning authorities and developers should ensure that good arrangements are put in place for the long-term management of any proposed open space. Management of public space (which forms the majority of its constituent services) requires appropriate skills and resources (Carmona et al. 2004).

Enforcement: This is the process that ensures the development is conducted appropriately and can be used to take action when it is not (The Scottish Government 2010). Having multi-agency enforcement programmes, pulling together different agencies with public open spaces common development management practices have proved particularly effective (Carmona et al. 2004).

Appendix C: Urban Design Audit Sheet

This **must** be done in the square during the daytime. Please score each criterion in the following table from 1 to 5, where 1=very poor, 2=poor, 3=fair, 4=good and 5=very good. There is no right or wrong answer. Please choose the answer which represents **your opinion.**

Urban design audit	
Urban design features	**score**
Imageability. It assesses the memorable extent of the place. Imageability is measured by the evaluation of physical features such as courtyards, buildings with non-rectangular shapes, numbers of people and noise levels.	
Enclosure. This evaluates the degree to which streets, buildings and vegetation surround the space, thereby forming external rooms.	
Human scale. An assessment which indicates that the specific built environment in the place is in appropriate proportion to human scale and comfortable for the pedestrian. This is evaluated by measuring features such as the range of sidewalk planters, windows, doors and building heights in respect to human scale.	
Transparency: This concept measures where human activities in a public space are visible from the edge of the street. This is assessed by looking at the features which block transparency, such as walls, windows, doors, fences and landscaping. Although, a sense of enclosure is considerable and having sheer openness contradicts the human scale concept, the public requires a visual connection with activities beyond the street.	
Complexity. This idea emphasises visual variety (Clemente et al., 2005, p. 28: cited in Forsyth, et al., 2010). Although it could be claimed that complexity may result in clutter, the fact is complex places are more attractive, due to their element of surprise, irregularity and lack of sterility.	

Appendix D: Urban Design Inventory

Urban Design Inventory/ checklist							
No.	**Questions**	**Quantity**			**Quality**		
		None	Few	Some	Bad	Satisfactory	Good
Access							
1	Is there car access/ driveway near the place?						
2	Is there pedestrian access leading to the place?						
3	Are there bicycle lanes leading to the place?						
4	Is there flow movement in connections?						
5	Is the place open and barrier free? The place is not closed off/gated?						
6	Is there sufficient car parking?						
7	Is there bicycle parking?						
8	Is there access to public transportation (bus stops)?						
9	Is there a pedestrian network connecting the place with other locations?						
10	Are cycle lanes wide enough to accommodate bicycle traffic?						
11	Are the lanes suitable for people with disabilities?						
Design features							
12	Is the appearance of the place unified?						
13	Are there real paths and imagined routes that the eye follows when observing, within the differences in form?						
14	Are the colours used effectively?						
15	Is there a combination of different textures in single elements within the space surface?						
16	Does the space have special character and sense of identity?						
17	Is there proper proportion in the relationship between the masses and the place?						
18	Is there richness and variety of pattern elements?						
19	Is there an uninterrupted flow of pattern elements?						
20	Does the space have meaning value?						
21	Does the space have a sense of enclosure						
22	Is the place in appropriate proportion to the human scale and comfortable for the pedestrian?						
23	Are the human activities in the public space visible from the edge of the street?						
Place attraction							
24	Is the paving pattern attractive?						
25	Is the design layout attractive?						
26	Is the urban furniture attractive?						
27	Are the lighting features attractive?						
28	Does the design make use of spectacular natural views, if any?						
29	Are the surrounding buildings attractive?						
30	Are there public art displays in the space?						
31	Are the seats arranged for varying views of the space (trees, fountain, or surrounding street view)?						
32	Are there attractive focal points which create activity throughout the place?						
33	Is there an attractive view in the place?						
34	Is there an attractive view around the place?						
Place safety							
35	Is it safe with regard to traffic?						
36	Does the design provide safety from traffic?						
37	Does the design provide safety from crime?						
38	Does the design provide safety for children and young people?						
39	Does the design provides safety for elderly people						
40	Is the parking area safe for pedestrians?						
41	Is there specific parking for people with special needs?						
42	Is the parking for people with special need connected to the place by a safe walkway?						
43	Is there specific parking for people with young children in buggies?						
44	Is the parking for people with children connected to the place by a safe walkway?						
45	Is there a safe street crossing?						

No.	Questions	Quantity			Quality		
		None	Few	Some	Bad	Satisfactory	Good
Circulation							
46	Are the individuals allowed to enter the place from any side, creating multiple pathways?						
47	Is there a bicycle network in the place?						
48	Are the axes provided to direct views and to draw individuals to the focal points?						
49	Are pedestrian lanes designed wide enough to provide easy access for pedestrian traffic to all areas of the public space?						
50	Is there connectivity with other public spaces within a short distance?						
51	Is the space suitable for users of all ages?						
52	Is the space suitable for people with disabilities?						
53							
54	Are there sidewalks?						
Complexity							
55	Is there diversity in the usage of the surrounding buildings?						
56	Is there complexity in the appearance of the surrounding buildings?						
57	Is there complexity in the material used in the place?						
58	Is there complexity in the use of colours in the space?						
59	Is there a diversity of usage in the space?						
60	Is there diversity in users?						
Place well-keeping							
61	Is the soft landscape well maintained?						
62	Is the hard landscape well-maintained?						
63	Does the place appear clean?						
64	Are the lighting features well-maintained and replaced once needing it?						
65	Is the urban furniture well-maintained?						
66	Is the place free from vandalism?						
67	Are waste disposal bins placed strategically near local vendors or near seating areas to reduce litter and create a sense of cleanliness?						
68	Is the place cost-effective? Is little maintenance required for public displays and vegetation?						
69	Are there recycling bins in the area? Along with waste bins, recycling bins can create a more sustainable environment.						
Climate consideration							
70	Does the design provide natural shade (trees)? Shade/access to light. Do trees line the entire area to provide shade from the long hours of sunlight during the summer season? Is there adequate access to sunlight along the central north-south axis of the plaza as well?						
71	Does the design provide shade feature such as gazebos?						
72	Does the design take advantage of the sun's movement to provide shady points?						
73	Does the design protect the space from being exposed to direct hot winds?						
74	Does the design provide solutions to reduce the air temperature?						
75	Does the design provide elements of water, such as fountains to reduce temperatures and add calm to the place?						
Soft landscape features							
76	Is the layout of the soft landscape beautifully set out?						
77	Is there a variety in vegetation?						
78	Is there contrast in colour and types of vegetation?						
79	Is the soft landscape presented without disturbing the attractive views of the place?						
Connecting and interaction with the surrounding nature							
80	Is it easy to interact with the in habitants of the place?						
81	Is the place connected with nature?						
Usage friendly							
82	Does the place act as a destination for users?						
83	Does the place act as transaction area for users?						
84	Is the place family friendly?						
85	Is the place ethnically friendly?						
86	Is the place used to celebrate social events?						
87	Is the place considered as a tourism destination?						
88	Is it a child-friendly area? Is it located away from heavy automobile traffic for safety reasons?						

No.	Questions	Quantity			Quality		
		None	Few	Some	Bad	Satisfactory	Good
89	Is there a variety of seating opportunities which can accommodate those of all ages?						
90	Does the design provide noise reduction space? The space utilises the surrounding buildings and lanes to create a wide range of areas quieter for more social environments?						
91	Is the space suitable for people with disabilities?						
92	Is there accommodation for different activities? Grassy lawns can be used for multiple purposes (outdoor play areas, or just for lounging).						
93	Is there comfortable and adequate seating?						
94	Is there a wide variety of seating choices from lawn space to benches to suit individual or group activities? Can people be found eating food from the local vendors on the lawns, reading a newspaper or novel on benches, or just conversing with friends by the fountain?						
95	Is there access to cafes?						
96	Is there access to restaurants?						
96	Is there access to public toilets?						
97	Is there street vendors?						
98	Is the place quite flexible, allowing visitors to circulate freely between different sections?						
99	Is the place used in a lively way?						
Place character							
100	Is the place part of a historical area?						
101	Does the place have architectural character?						
102	Does the place appear sophisticated?						
Olfactory character							
103	Is the air fresh without unpleasant odours?						
104	Does the place have a pleasant smell?						
105	Is the place free from pollution?						
Sound character							
106	Is the place free from traffic noise?						
107	Is there any appealing natural sound of birds or sea waves?						
108	Is the place free from loud annoying noises from the users, such as loud music?						
Neighbourhood							
109	Does the place surrounded by residential neighbourhood?						
110	Does the place connect with the surrounding neighbourhoods by walkways?						
111	Is the place connected with the surrounding neighbourhoods by bicycle paths?						
112	Is the place integrated within the context of the urban fabric?						

Appendix E: Visual assessment

Use the score sheet below to assess the urban design in the following photographs. Please score each criterion from 1 to 5, where 1=very poor, 2=poor, 3=fair, 4=good and 5=very good.
There is no right or wrong answer. Please choose the answer which represents **your opinion.**

Evaluation elements	Score
Colour contrast: -hue (red, blue, etc.), -value (lightness or darkness), -chroma (saturation).	
Form contrast -geometry (square, triangle, circle, etc.), -complexity (simplicity/ regularity vs. complexity/ irregularity) -orientation (relation to horizontal or to points of compass)	
Line contrast: -boldness (visual strength), -complexity, -orientation (relation to horizontal or to points of compass).	
Texture contrast: - grain (scale of sub elements from coarse to fine), -density (spacing of elements), -regularity (distribution, evenness), -internal contrast (e.g. in colour).	
Scale contrast: -proportion of landscape setting (how big an object is relative to the entire visible setting), -scale contrast (relative size of different objects), -proportion of field-of-view (related to field of view of a camera or human eye)	
Scale domination score: How dominant a feature is, from dominant to insignificant.	
Spatial domination score: a combination of: -Spatial composition: landscape composition (is it panoramic, enclosed, with a distinctive feature, a clear focal point, or canopied) -Spatial position: the prominence of an element as a result of its elevation and location in the landscape -Backdrop: does the foreground stand out or is it inconspicuous?	

Appendix F: Observation sheet

Location: **Date:** Day dd/mm/yy **Time**: at morning, afternoon and evening **Temperature:**	
Observation	Observer's comments (field diary)
Location: Write about where I'm sitting. **Weather:** Describing the weather. **People and activities:** Record people's behaviour, action, body language and interactions. Sketch the activities and movement on the map. Focus on how people move around Walking, playing, sitting, cycling, sporting,	
Number and group of users: Count no. of users' gender, age (children, adult, elderly) and ethnicity.	

Appendix G: Questionnaire

You are invited to participate in a study exploring the 'Planning and Urban Design of Liveable Public Open Spaces in Oman: A Case Study of Muscat'. This study will be conducted by me, as a doctoral student at the School of Built Environment, Heriot-Watt University. The results of this study will contribute to my dissertation, in partial fulfilment of a doctorate degree. I intend to focus the investigation on the squares and plazas in Muscat; more specifically Palace Square, Clock Tower Square, Ministries Plaza and Muttrah Plaza. The conclusions drawn from this research will offer a significant and comprehensive insight into enhancing our public open spaces. The questionnaire intends to explore your personal view on squares and plazas in Muscat. Your participation is voluntary. Your comments will help me to understand and evaluate the assessment process. All data collected through questionnaires will be highly confidential, and will not be used in any way but for the purposes of the study.

Yours truly, Hanan Aljabri

Part A: about the location

A1. What is the name of the square/plaza?

a. Palace Square		b. Municipality Square	
c. Ministries Plaza		d. Muttrah Plaza	

Part B: about your visit

B1. How often do you visit this square/plaza?

a. first time **(go to part C)**		b. every day		c. a couple of times a week	
d. a couple of times a month		e. a couple of times a year		f. once a year or less	

B2. At what time of year would you normally visit this square/plaza?

a. winter		b. summer	

B3. When would you normally visit this square/plaza?

a. weekdays		b. weekends	

B4. When you visit the square/plaza, where do you usually travel from?

a. home		b. work		c. shops	
d. hotel		e. school		f. college/university	
g. other ……					

B5. How would you normally travel to this square/plaza?

a. on foot		b. bicycle		c. motorbike	
d. tourist coach		e. bus		f. taxi	
g. car		h. other ……			

B6. Approximately how long does your normal journey take?

a. less than 5 minutes		b. 5-10 minutes		c. 10-15 minutes	
d. 15-20 minutes		e. 20-30 minutes		f. more than 30 minutes	

B7. Who would you normally visit this square/plaza with?

a. alone (**go straight to question B9**)		b. in a group		c. both equally	

B8. When you visit the square/plaza as part of a group, who would you normally visit with?

a. partner		b. children		c. family	
d. friends		e. tourist group		f. team/club	
g. school group		h. too varied to say		i. other ……	

B9. For what reasons do you normally visit the square/plaza? (**Please tick <u>up to five</u> main reasons)**

a. the beauty of the place		b. peace and quiet		c. wildlife	
d. fresh air		e. to keep fit		f. take a shortcut	
g. attend event		h. children/family outing		i. food/drink	
j. organised educational visit		k. guided walk/talk/tourism		l. play sport/games	
m. watch sport/games		n. meeting		o. to read/study	
p. other 1. ……					
q. other 2……					

<u>Part C: about the square/plaza</u>

Question	Very poor	Poor	Fair	Good	Very good	Don't
C1. What is your overall impression of the square/plaza?	1	2	3	4	5	?
C2. How would you rate the design and appearance of the square/plaza?	1	2	3	4	5	?
C3. To what extent do you think this square/plaza is a landmark which contributes to the urban character of the city?	1	2	3	4	5	?
C4. What do you think about the range of visitor facilities that are available?	1	2	3	4	5	?
C5. How easy it is for you to get into this square/plaza?	1	2	3	4	5	?
C6. To what extent do you find this square/plaza is integrated with the surrounding amenities?	1	2	3	4	5	?
C7. To what extent do you think this square/plaza is safe?	1	2	3	4	5	?

C8. To what extent do you think the square/plaza is designed to fit the climate?	1	2	3	4	5	?
C9. How would you rate the standard of cleanliness and maintenance of the square/plaza?	1	2	3	4	5	?
C10. To what extent do you think this square/plaza contributes to the commercial activities around it?	1	2	3	4	5	?
C11. To what extent do you think this square/plaza is provided by the authority bodies mainly to please the Royal Court?	1	2	3	4	5	?
C12. To what extent do you think this square/plaza meets your needs?	1	2	3	4	5	?
C13. To what extent do you find this square/plaza enjoyable?	1	2	3	4	5	?
C14. To what extent do you think you can participate in social and cultural events at this square/plaza?	1	2	3	4	5	?

Question	Opinion			Comment
C15. Is there anything that would encourage you to use the square/plaza more often, or to stay for longer?	Yes	No	Don't know	
C16. Do you think that the authority bodies have involved the public in providing this square/ plaza?	Yes	No	Don't know	
C17. Does the square /plaza's size/ quality make you travel to use it? (Regardless of where you live, work or study in the city.)	Yes	No	Don't know	

Part D: about you

D1. Which of the following best describes you?

a. resident of Oman		b. tourist (**go straight to question D5**)	

D2. In which area of Oman do you live?

a. resident in this local authority		b. resident outside this local authority	

D3. Prior to taking part in this survey, have you ever been consulted on the way public open spaces are provided? Or asked if you would like to be involved? (E.g. visitor survey, comment card, exhibition, public meeting etc.)

a. yes		b. no	

D4. Would you like to be consulted or involved in the way that public open spaces are provided?

a. yes		b. no	

D5. What is your nationality?

a. Omani		b. non-Omani (please specify)……..	

D6. How long you have been in Muscat

a. less than a week		b. 1-2 weeks		c. 3-4 weeks	
d. 1-6 months		e. 6-12 months		f. 1-5 years	
g. 6-10 years		h. 11-20 years		i. over 20 years	

D7. Which of the following best describes your most recent academic qualification?

a. below high school		b. high school		c. technical institution	
d. college		e. university		f. post-graduate	

D8. Which of the following best describes your employment status?

a. student		b. government officer	
c. private sector employee		d. self employed	
e. unemployed		f. retired.	

D9. Which of the following best describes your age?

a. under 15		b. 15-19		c. 20-29		d. 30-39	
e. 40-49		f. 50-64		g. 65 and over			

D10. Which of the following best describes your monthly income?

a. less than 500 OR		b. 500- 1100 OR		c. more than 1100 OR	

D11. What is your gender?

a. female		b. male	

D12. Do you consider yourself to have a disability that affects your use of the square/plaza?

a. yes		b. no	

Appendix H – semi-structured Interview questions

Informed consent

The Planning and Urban Design of Liveable Public Open Spaces in Oman: A Case Study of Muscat

Information sheet for participants:

You are invited to participate in a study about 'The Planning and Urban Design of Liveable Public Open Spaces in Oman: A Case Study of Muscat'. This study will be conducted by me as doctoral student in the School of the Built Environment, Heriot-Watt University. The results of the study will contribute to my dissertation, in partial fulfilment of a doctorate in public open spaces. My question is to what extent have planning and urban design practice influenced the quality of public open spaces in Muscat of Oman? I intend to investigate the squares and plazas in Muscat, specifically the Palace Square, the Municipality Square, Ministries Plaza and Muttrah Plaza.

The result of this research will be a great contribution to enhance our public open spaces. It will bring fresh evidence and new insights into the Omani squares and plazas in comparison with international ones. The study will also develop practical policy recommendations, which could influence the future planning and urban design practice in Oman and other Middle Eastern countries. The experiences summarized from the West, Middle East and Oman will make important contributions to planning and urban design in providing liveable and enjoyable public open spaces in Oman and other developing Arab and Muslim countries.

I intend through this interview to explore your personal view on squares and plazas in Muscat. Your participation in this study is voluntary. You may refuse to participate or withdraw at any time. Consenting to participate in this study entails being interviewed for approximately 45 minutes. This interview will be highly considered and will participate in understanding and evaluating the assessment process. All data collected through the interview will be highly confidential and will not be used in any way but for the purposes of the study. Also, all participants will be anonymous and coded using numbers or pseudonyms when referred to in reporting and analysing the data. Your help will be highly appreciated and I will be glad to send you the research results, if you are interested.

Yours sincerely,
Hanan Aljabri
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History

- From your knowledge where was the first square or plaza in Muscat?
- What were the function and the purpose of the squares or plazas in Muscat in the past?
- How did squares in the city evolve during history?
- Could you explain why there are no old squares and plazas in the city and all the existing ones are rather new?

Contemporary understanding

- How do you defined/view public open spaces in Muscat today?
- What is the difference between a square and a plaza in Muscat?
- Could you clarify why all the squares and plazas tend to be located in the centre and the ancient part of the city?
- What are the function and the purpose of squares and plazas in Muscat today?
- In your opinion, to what extent do you think squares and plazas in Muscat differ from those in western cities in terms of meaning and purpose?

Importance

- To what extent you think the square or plaza makes a major contribution to the setting, character, structure and the environmental quality of the city?
- From your observation, how effectively do you see public open spaces (squares and plazas) used in Muscat?
- How does the planning system reflect the importance of public open spaces, particularly squares and plazas?

Economic value

- To what extent did the commercial factor influence shaping contemporary squares in Muscat?
- To what extent do the squares and plazas contribute to the recreational resources of the city as a whole?

- To what extent do you think our squares and plazas in Muscat affect the commercial activities in their surrounding areas and the whole economic situation in the city?
- What is the influence of the private sector in making the usage of those spaces flourish?
- To what extent does the planning system support the economic factors in providing squares and plazas?

Environmental value

- To what extent you think the design of the squares and plazas in Muscat shows good consideration of the environmental issues?
- How do the current designs of squares and plazas in Muscat integrate the built and the natural environment?
- How did the planning system consider environmental values in proving squares and plazas?

Political value

- To what extent did polities influence shaping the contemporary squares in Muscat?

Social use aspect

- How do you think the location of the current squares and plazas encourage the public to use them?
- To what extent do you think people enjoy using those squares and plazas?
- How do you think the urban design of the squares and plazas encourages the public to host celebrations or demonstration events?
- To what extent you think that people from all community groups are using those spaces?
- To what extent you think that people in the community are using those spaces?
- How far is the community satisfied with those square and plazas?

- Could you reflect, on behalf of the community, why you think people who are not using those spaces are not using them?
- How did the planning system consider social values in providing squares and plazas?

Design

- To what extent does the design of our squares and plazas in Muscat consider the local culture?
- How do you find those spaces in terms of standard of cleanliness and maintenance?
- To what extent you think that urban design provides liveable space in each case study?
- To what extent do you think that the current squares and plazas in Muscat are well fulfilling the concepts of walkability and cycling?
- How did the west influence the contemporary design concept of the city, especially in squares and plazas?
- To what extent you think that community needs were taken in consideration in designing those spaces?
- How did the planning system consider quality in designing the squares and plazas?

Planning

- How has the planning practice, in your opinion, affected the use and changes in each of the case studies in providing liveable squares and plazas?
- How does the planning process support the provision of public open spaces, focusing on the case studies of spaces of squares and plazas?
- How does the planning and urban design deliver liveability in the case study spaces?
- To what extent you find the squares and plazas well distributed in the city?
- How successful do you see the integration between planning and urban design in providing liveable squares and plazas in Muscat?
- To what extent do you think that the location and the surrounding context of those squares and plazas help in encouraging people to use and enjoy them?
- To what extent have authority bodies involved the community in the planning process of those places?

- How do the authority bodies meet the community needs in providing those spaces?
- What are the strategies, policies and legislation in the planning system that governs the provision of public open spaces and in specific squares and plazas?

Recommendation

- How do you think squares and plazas in Muscat could be improved?

Appendix I – Total population in the Sultanate by nationality, age group and gender from census 2010[1]

Age Group	Omani				Expatriate				Total			
	Male	Female	Total	%	Male	Female	Total	%	Male	Female	Total	%
0-4	134,541	128,988	**263,529**	13.5	16,130	15,486	**31,616**	3.9	150,671	144,474	**295,145**	10.6
5-9	108,737	105,124	**213,861**	10.9	14,625	13,509	**28,134**	3.4	123,362	118,633	**241,995**	8.7
10-14	108,989	104,322	**213,311**	10.9	11,329	10,057	**21,386**	2.6	120,318	114,379	**234,697**	8.5
15-19	125,124	118,824	**243,948**	12.5	7,282	6,392	**13,674**	1.7	132,406	125,216	**257,622**	9.3
20-24	123,221	117,271	**240,492**	12.3	66,738	16,165	**82,903**	10.2	189,959	133,436	**232,395**	11.7
25-29	103,502	102,679	**206,181**	10.5	137,291	29,462	**166,753**	20.4	240,793	132,141	**372,934**	13.4
30-34	76,105	76,737	**152,842**	7.8	108,729	32,241	**140,970**	17.3	184,834	108,978	**293,812**	10.6
35-39	51,365	50,068	**101,433**	5.2	89,294	27,808	**117,102**	14.3	140,659	77,876	**218,535**	7.9
40-44	36,547	36,467	**73,014**	3.7	69,186	18,285	**87,471**	10.7	105,733	54,752	**160,485**	5.8
45-49	29,226	30,082	**59,308**	3.0	44,602	11,108	**55,710**	6.8	73,828	41,190	**115,018**	4.1
50-54	24,580	27,539	**52,119**	2.7	32,554	6,634	**39,188**	4.8	57,134	34,173	**91,307**	3.3
55-59	17,176	18,977	**36,153**	1.8	15,448	3,312	**18,760**	2.3	32,624	22,289	**54,913**	2.0
60-64	16,345	16,119	**32,464**	1.7	5,532	1,812	**7,344**	0.9	21,877	17,931	**39,808**	1.4
65-69	11,679	11,050	**22,729**	1.2	1,651	899	**2,550**	0.3	13,330	11,949	**25,279**	0.9
70-74	11,220	9,600	**20,820**	1.1	753	558	**1,311**	0.2	11,973	10,158	**22,131**	0.8
75-79	5,442	4,885	**10,327**	0.5	310	309	**619**	0.1	5,752	5,194	**10,946**	0.4
80-84	3,806	4,240	**8,046**	0.4	209	174	**383**	-	4,015	4,414	**8,429**	0.3
85^{+}	2,985	3,774	**6,759**	0.3	155	114	**269**	-	3,140	3,888	**7,028**	0.3
Total	990,590	966,746	**1,957,336**	100.0	621,818	194,325	**816,143**	100.0	1,612,408	1,161,071	**2,773,479**	100
%	50.6	49.4	**100.0**	-	76.2	23.8	**100.0**	-	58.1	41.9	**100.0**	-

[1] Actual results of general census of population, housing and establishment from (21-21) December 2010.