

QATAR UNIVERSITY

COLLEGE OF ENGINEERING

EXAMINING THE VIBRANCY OF URBAN  
COMMERCIAL STREETS IN DOHA

BY

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## **ABSTRACT**

Commercial streets play an important role in cities. They are not only a means of access and platforms for intrapersonal communication throughout a city but are also areas of economic and social expression. They create a host of economic exchanges while generating pedestrian and vehicular fluxes. Contributing to the public realm, they are considered places of social and professional activity, while also posing a series of safety, aesthetic, environmental and developmental challenges.

Doha is one of the leading developing cities in the Middle East. It aspires to develop a sustainable built environment of international standard, while responding to local culture and customs. Vibrant urban commercial streets play a major role in Doha, and they are affected by the country's fast growth and rapid urban development. The design and rehabilitation of future and existing commercial streets are of utmost importance to the livability and sustainability of the city. Consequently, deep research is required to investigate the concept of vibrancy in Doha's commercial streets.

The research aims to explore the principles that define and contribute to street vibrancy. In order to achieve this systematically, physical and social assessment methods of investigation are formulated. Criteria and a scores index are explored by firstly inductively considering the research questions. These tools are fundamental elements to build towards the second objective, which is to identify and verify in a deductive way the parameters that contribute to the vibrancy of the commercial

streets. Mixed method for collecting and analyzing data from active street users has been used in the research, including personal interviews and on-site surveys.

The research establishes a link between planning and design and the streets' vibrancy, of which results a framework for future investigations and principles for the revitalization of existing streets, or the design of new commercial streets.

As these principles aim to guarantee the vibrancy of commercial streets, the research concludes that their implementation and development may positively contribute to the city's economic and social fabric.

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## **PREFACE**

As an architect with more than 18 years' experience in Doha, I have spent much of my time collaborating with urban planners and authorized architects and engineers. A key challenge that we regularly faced in our work was the gap, or rather, the unfilled space between private property and public land. Oftentimes, this gap caused a liability conflict between the architect and the municipality, and it would subsequently be left as an un-designed linkage between the private and the public realm. It was clear to me, and my colleagues, that this result was due to a general lack of consideration of the public realm of the street, and that it unfortunately limited the urban influence of the architectural project. This encouraged me to venture into exploring the connectivity, safety, walkability, livability and viability of public spaces. Based on my initial observations and corroborative studies, it seemed to me that these elements could be summed up under one significant indicator: the vibrancy of the street.

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*To You, Amjad*

*No combination of words can ever express what you mean to me*

# **1. CHAPTER ONE: RATIONALE OF THE RESEARCH**

## ***1.1 Introduction***

Commercial streets are essential elements of the public realm. They reflect the evolution of urban societies. Vibrant public spaces are important indicators of healthy interactions between the commercial, social and environmental components. Doha City, as an emerging regional city and as part of its development, is looking to both revitalize existing and create new commercial streets to facilitate movement and access by multiple modes of transportation, and to accommodate dynamic and healthy social interaction. The aim of this research is to examine and assess the vibrancy of urban commercial streets in Doha City. Referring to global and regional examples of commercial streets, it looks at the development of commercial corridors in Doha. The research focuses on three case studies of major existing streets, each with a specific commercial identity and different urban scale. These streets have witnessed the country's urbanization period, linked to rapidly increasing oil production and the growing expatriate population. However, recently, new development strategies have led to a second urban transformation process (Salama & Wiedmann, 2013). Concomitantly, and without any expectation, these streets – all developed over the past forty years - have seen their significance decline. Today, they seem to struggle to remain important commercial centers. The research will discuss the relevance of these

‘urban commercial streets’ in spite of the development of shopping malls and modern urban environment-controlled retail spaces. The case studies are:

**Al-Mansoura Street:** This corridor connects Al Matar Street to the Rawdat El Khail area. It was once a vibrant urban center of Doha City, a place where people could buy goods at affordable prices, and find entertainment and social activities.

**Al-Sadd Street:** This street connects the 3rd ring road to the Al Waab area. It is a major route carrying trips from east to west. It is one of the oldest retail areas in Doha. During the second half of the 20th century, Al Sadd Street was the heart of Doha’s business center. It featured mixed retail venues which attracted middle- and high-income\_expatriate and local households in the area, who supported its luxury shopping anchors and mixed-use developments. It is still considered a vital location, harboring dense vehicle and pedestrian traffic (Salama & Wiedmann, 2013). Additionally, Qatar Rail is building a metro station within less than 500 meters from all blocks neighboring the street as part of the east-west Gold Line, running between the airport and Villaggio Mall (Kovessy, 2013).

**Al-Mirqab Al-Jadeed Street:** Al-Mirqab runs parallel to Al-Sadd. A major route called Al-Kenana Street, which offers access to a less conspicuous secondary category of commercial venues, is runs between Al-Mirqab and Al-Sadd Streets. Al-Mirqab is locally well-known for its takeaway restaurants and small shops. It became famous for supporting Al Sadd Street’s traffic, where people would enjoy shopping on Al Sadd and then have a snack on Al Mirqab (Salama & Wiedmann, 2013).



Based on the literature on commercial streets and theoretical concepts related to streetscapes and city image and legibility, measuring parameters will be defined and used to analyze the vibrancy of the commercial streets and examine the correlation between the street planning and design, social character and the streets' vibrancy. The case studies will include a typo-morphological analysis as well as qualitative and quantitative surveys. The objective of the research is to propose an assessment method for investigating the streets' vibrancy and a framework to guide development and design decisions for the revitalization and regeneration of urban commercial streets in Doha, as well as defining recommendation for designing new commercial streets in Doha City.

## ***1.2 Statement of Problem***

Due to the socio-economic changes taking place in the Middle East at exceptional speed, the resulting urban expansion and densification have brought many problems regarding 'Urban Commercial Streets' and their impact on the surrounding areas to light. Many of these problems relate to the disciplines of Urban Design and Planning and need to be researched in order to remediate the negative impacts of the rapid expansion of the city. Among the biggest and most common problems that many Arab countries are facing today is the lack of compatibility with the social paradigm of the design of the public realm (that is, when there is a design), in addition to the problems created by increased traffic, air pollution and the lack of pedestrian routes (Jaber, 2013). The main cause of increased traffic congestion is a lack of public transportation infrastructure that has led to high dependence on private vehicles. Land-use policies in Arabic cities

need to be re-examined to include urban sprawl. Another severe problem includes the lack of green spaces and shaded areas that impacts people adversely and prevents them from using public spaces, figure 1.

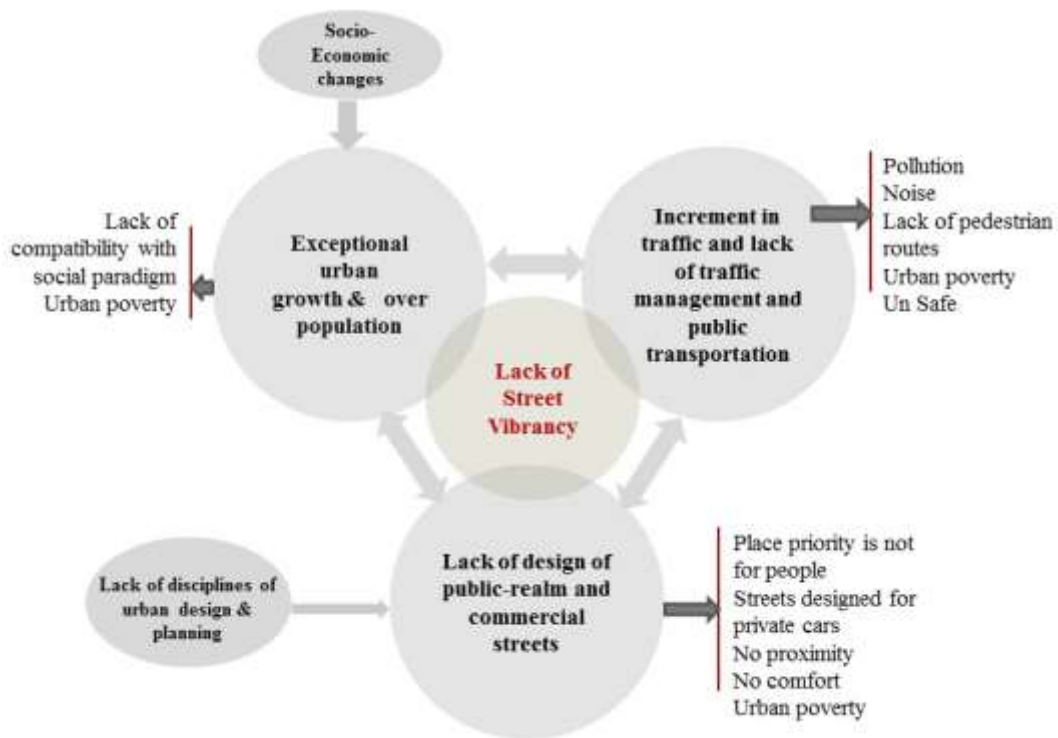


Figure 1 Chart, Statement of Problem. Source the author

Ever since the advent of the vehicle as a means of civil transportation, streets are no longer considered as “places for people” (Jaber, 2013). The traditional urban form in the older parts of Arab cities has undergone a fundamental transformation where a great part of its coherent and relatively homogeneous traditional fabric has been fragmented or remodeled, or has entirely disappeared. Consequently, the

morphology of the city has changed, and the city has lost its identity. Thankfully, contemporary urban design trends have sought to remedy this loss of urban fabric and public spaces, and the reconstruction of Souq Waqif's traditional fabric and the new typologies of the Msheireb downtown project, demonstrate a recent focus on public spaces.

Hence, many critical issues faced by the urban fabric of the cities in the region, including social coherence, public health, environmental sustainability and long-term economic viability should be addressed at street level, following the lead of cities across the globe, and without ignoring the history and identity of the city (Lusher, Seaman, & Tsay, 2008).

### ***1.3 Theoretical Basis for the Study***

The research postulates that the vibrancy of a commercial space is the result of physical and socio-economic factors. This is measured through three main aspects: the integration of the street with its environment, its physical attributes, and its socio-economic dimension, figure 2.

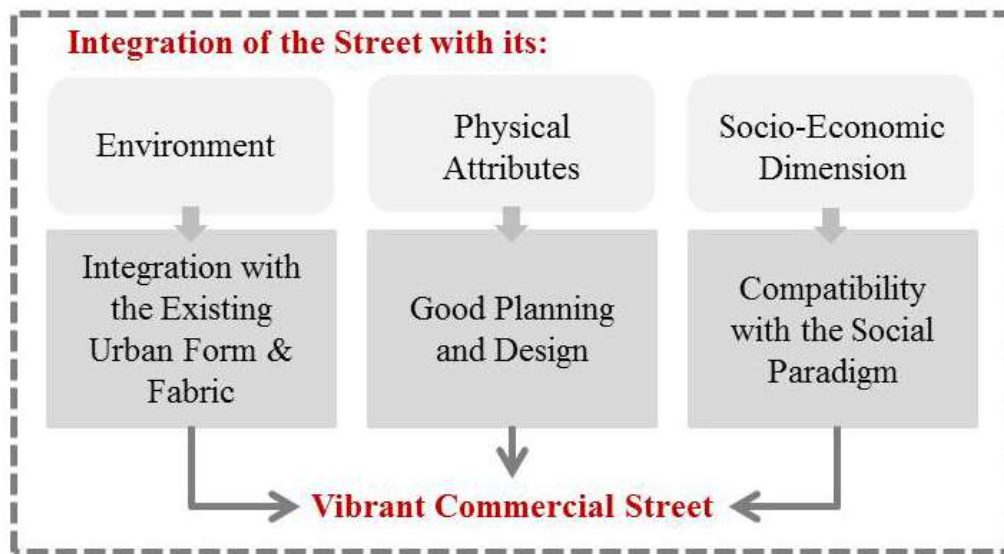


Figure 2 Theoretical basis for the study, source the author.

Thus, by analyzing and examining the vibrancy of commercial streets, the research aims to identify the parameters that have an impact on the vibrancy of a street, and then propose design guidelines and recommendations to revitalize the important economic and social spaces of Doha, and build on their already-established reputation. International and regional exemplary practices can be implemented and applied to Qatar by adapting them to the local context and culture.

#### ***1.4 The Research Objectives***

The main objective of this research is to identify methodologies to reclaim the vibrancy and improve the public realm of existing commercial streets in Doha. By

examining their vibrancy or lack thereof – through a series of qualitative and quantitative parameters – the research will seek to identify ways to:

1. Examine the concept of commercial streets.
2. Identify and examine approaches to the study of commercial streets and references for use in Doha.
3. Identify criteria for examining the vibrancy of commercial streets in Doha.
4. Undertake case studies of three streets in Doha to examine their vibrancy.
5. Define recommendation on how to improve the vibrancy of commercial streets in Doha.

These can include reducing transportation impacts, improving safety and comfort, and providing necessary amenities, aiming to make the streets more socially and environmentally friendly.

### ***1.5 Research Questions***

The research initiates the theoretical section by proposing the following pivotal questions:

- Define the commercial street
- What is the urban vibrancy? Why is it important?
- How do we assess the vibrancy of a commercial street? Why are some streets more vibrant than others?
- How vibrant are the selected case studies?

- What is the correlation between the character of the street design and its vibrancy?
- How can the vibrancy of the studied streets be improved?
- What recommendations can be put forward for the designing of a new commercial street?

As a basis for inquiry, the study has two aspects, inductive and deductive; it aims to examine the vibrancy of Doha's commercial streets, determining the investigation tools, and identifying parameters to improve the street's vibrancy.

### ***1.6 Scope of Research***

The research includes multiple levels of investigation. The first is based on a theoretical literature review and focuses on three dimensions: the concept of the commercial street as an urban public space to be shared by all people; the positive urban vibrancy concept; and the background of Doha with which the research aims to define both the constant and changing factors and their influence on the urban fabric. This will illustrate these components individually and define them the physical attributes of the streets are visible and are integrative components that harbor interactions between the social paradigm, the ecological system and variable spatial dimensions. These interactions will evidently result in modeling the character of the street, which leads to the second level of investigation.

By analyzing the existing streets' condition and conducting a comparison study for them, we will identify and determine the elements and ideas that contribute to vibrancy. Such a comparison will include the cultural qualities and social aspects

of streets, their expressive aesthetics, their ecological influence, and the perception of the streets by the people, which would *a priori* result in changes of the streets' pattern over time.

The third level investigates the prospects and the necessity to develop approaches and suggestions. The implementation of positive street concepts and design may also generate new patterns of evidence and hypotheses for further research, providing an integral link with other disciplines such as architecture, landscape science, and economic and social studies, therefore encouraging transdisciplinary collaborations to build robust knowledge and problem-solving capacity, which can be considered the fourth level, figure 3.

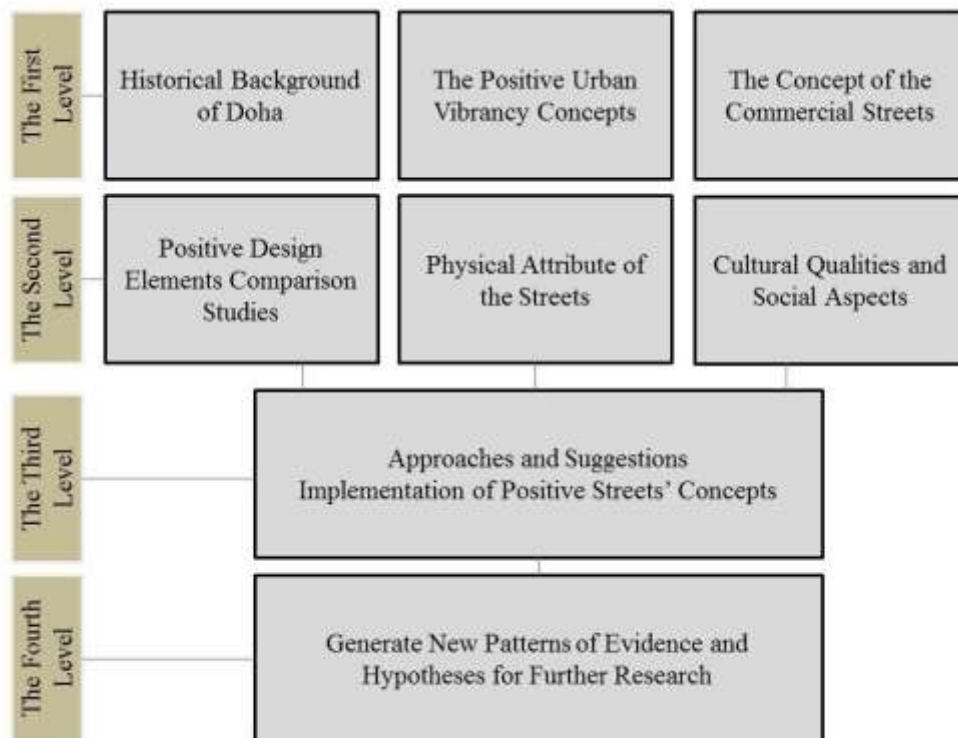


Figure 3 Structure diagram of the levels of investigation, source the author.

The investigation levels are clarified in the structure diagram below. However, it is worthy to note that this study focuses on commercial streets in mixed-use districts that reach a large urban scale<sup>1</sup>, instead of focusing on commercial streets in purely residential neighborhoods where their influence is usually exclusive to the local community.

### ***1.7 Why the case studies' streets are selected for this study?***

Redesigning old shopping streets has now become an important focus for city planners as a result of the global appeal for the sustainability and enhancement of the outdoor public life (Lynch & Hack, 1984). While Doha is still a city in the process of being built and extended, efforts are being made to ensure that the old districts of the city are also to be refurbished in an effort to rejuvenate the inner city.

Al-Sadd, Al-Mirqab Al Jadeed, and Al Mansoura are three streets in Doha that may differ in their morphological aspects as well as social impacts, but they all share a similar history. They were established during the 1960s after the first evolution in Doha while establishing the first master plan, and were then exposed to a second transformation in Doha in the late 1990s. Nonetheless, these streets managed to survive this second metamorphosis and retain popularity with the city's inhabitants. Today, they contain a diverse selection of stores and have the

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<sup>1</sup> Mixed-use neighborhoods are predominantly residential neighborhoods that also include work, retail, cultural, and/or light industrial use. It is expected (by scholars) that by mixing various land uses we can achieve a more vital, vibrant, attractive, safe, viable, and sustainable pattern of urban lifestyle (Mehta V. , 2006).



advantage of offering a diverse range of commercial services at central locations in the capital, and with a vitality and urban vibrancy that newer shopping centers seem unable to match.

However, these streets each present different characteristics. They vary in dimensions and morphology, in their architectural themes, spatial organization, and the functions and commercial services available. They are nevertheless considered streets by their overall scale and impact on the city, unlike Salwa Road or the Airport road that are considered commercial corridors or highways rather than streets. As three of the most important commercial streets in Doha, they seem well-positioned to provide answers to many of the questions posed in this research.

### **1.8 Research Methodologies, and Expected Outcome**

A literature review will look at the three main components of the research. The first component is the conceptual and theoretical literature related to streetscapes and the concept of Vibrancy. The second component is the definition and urban morphology of the commercial street. The third component is the historical and contemporary development of the commercial street in Doha.

From the literature review, a research framework is developed to analyze and evaluate the vibrancy of three commercial streets in Doha. A series of parameters related to vibrancy will be applied to the three selected case study areas in Doha.

The case studies will be analyzed through different methods – a typomorphological study will present the commercial streets and their urban and

spatial design. This study will assist the researcher in analyzing the physical aspects related to vibrancy such as public spaces, amenities and urban quality, covering the function, form, unity, and accessibility of the three streets. Land use plans, regulation and control documents including zoning, subdivision, site plans and other local land data will be collected and analyzed. Further photographic surveys and site visits will be carried out too.

The criteria for the analysis will include the following:

- Analysis of the function of the street
- Analysis of the urban form of the street
- Analysis of the street components and elements
- Analysis of accessibility, width, length and proportion
- Analysis the behavior of the users, including residents, workers and visitors.

The data collection method of the research is a mixed method including walk-by observations, direct site observations, pedestrian counts, extensive field notes, in-depth interviews and questionnaires. The measures of analysis include social attributes i.e. user types, social groups, the variety of activities, active and inactive times, interaction and safety, in relation to physical attributes i.e. physical forms, the amenity of the street spaces, land use, vacant properties and the variety of the functions within the street.

The gathered and analyzed data is intended to provide a better and more objective understanding of specific problems of the street. This will allow formulating a

method for exploring the streets and developing a vision for the enhancement and revitalization of the streetscape design.

The results of the research and analysis will then be compiled into a series of recommendations for revitalizing existing commercial streets and designing new commercial streets in Doha and Qatar.

### ***1.9 Organization of the Thesis***

The research is divided into seven chapters to cover the three main components that should be addressed: the concept of urban vibrancy, the definition and concept of the urban commercial corridors, and the historical and contemporary development of the commercial corridor in Doha, figure 4.

Chapter Synopses:

Chapter 01: Introduction: The components of this chapter summarize the problem statement that the research is addressing, and unambiguously state the rationale and objectives of the research. This chapter also provides the research context and the expectation by proposing the questions. It includes a brief of the suitable methodology, which will be used in the research, as well as the organization of the research.

Chapter 02: Literature Review: This chapter investigates two notions: the urban commercial street and urban vibrancy as concepts of worldwide concerns. A literature review and analysis of state-of-the-art approaches and solutions are provided as a theoretical study to define indicators, in addition to an analytical

study of global and local examples for urban streets' solutions. The chapter is summarized with a definition of the concept of the vibrancy of the commercial corridors.

Chapter 03: Research Approach and Methods: This chapter illustrates the approaches' methods to the examination of commercial street vibrancy. It describes the set of tools and techniques that are used to examine the vibrancy in Doha streets and how to apply these methods. It also includes the data analysis framework and ways to interpret them.

Chapter 04: Introduction to Context: The first part of this chapter investigates Doha's typo-morphology and the main streets' pattern by analyzing the history and synthesis of the streets' hierarchy in Doha and its relation to the main concept of the traditional souq. Subsequently, empirical research is conducted in the second part of this chapter, based on three extensive case studies that analyze the history, evolution and contemporary real-life situations of the three main urban streets in Doha: Al-Mansoura Street, Al-Sadd Street and Al-Mirqab Al Jadeed Street.

Chapter 05: Results and Study: This chapter investigates the morphology and organization of the existing streets, and defines the components of the vibrant street by analyzing the social character of the streets. A comparative analysis of vibrancy of streets will be conducted across the studied streets and the other global and local urban streets' solutions.

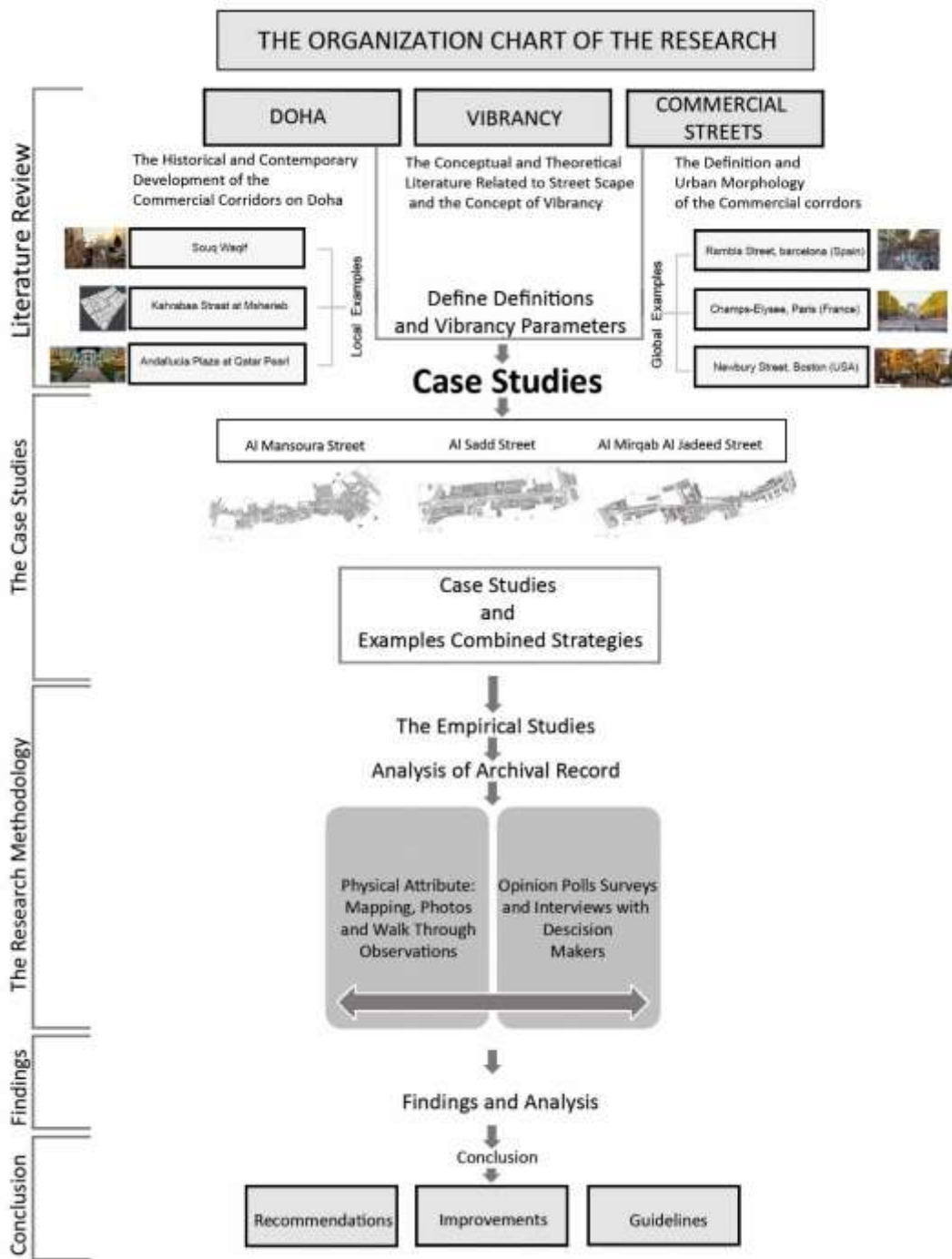


Figure 4 The Organization Chart of the Research. Source the author

Chapter 06: Findings and Conclusions of the Study: This chapter aims to provide an answer to the research questions and a suggestion of a suitable toolkit for examining street vibrancy. It includes in-depth insight into the findings and concludes with a theoretical statement for the findings and future research directions.

Chapter 07: Recommendations for Action: This chapter points to the recommendations for action to improve vibrancy of the studied streets and define recommendations for designing new commercial streets in Doha.

## **2. CHAPTER TWO: CONTEMPORARY URBAN THEORIES AND STUDIES**

### ***2.1 Chapter Introduction***

Three major trends, amongst others, have kept city planners busy in recent decades: Information and access to it, sustainability and the environment, and the demographic shift in the marketplace (Cherry & Nagle, 2009). These developments indicate the emergence of a more enlightened urban resident - one who seeks a more flexible, sustainable environment that enables a unique, diverse, vibrant, and responsible way of life, and which enables people who live close together to share a set of values and beliefs. “[This] creates a system of rules and habits which reflect ideals and create a lifestyle, guiding behavior, roles, manners, and the food eaten as well as built form” (Rapoport, 1977, p. 14). Accordingly, people seek an alternative to the typical new urban development patterns of grown cities. They have a preconceived image of where and how they would want to live, a space that integrates with their lifestyle. Their perception of the new urban space includes the transformation in their lifestyle, according to the economic and demographic changes in their cities. Thus, planners, architects, urban designers, sociologists and scholars should cooperate to create a spatial component that is integrative with all dimensions, and is meaningful with the people’s cultures and social lives, as “[the] success of urban designing is improved when it is directly related to social aspects” (Taylor, 1980, p. 85). Hence, this research aims to explore ideas to enhance local citizens’ experience by incorporating both traditional cultures and international precedents. A literature review and analysis

of global examples has to be conducted to explore the main research components, which are the definition and urban morphology of the commercial street in the first instance, and the concept of the streetscape and urban vibrancy in the streets in the second.

## ***2.2 Urban Street Definitions***

On any given day, in any newspaper, we read about a car accident or a random assault in any street in a city. Yet, we also read articles about popular festivals organized by and enjoyed in a specific neighborhood. In other words, there is a distinction between a street that belongs to the people, and another that is not safe for others. These two states can occur on the very same street! For example, many sidewalks can be commercially successful during the day, yet become dangerous at night, (Vidler, 2011).

These two images of the ‘street’ also appear in traditional settings. Those who migrate from the countryside to the big city all hear similar warnings before leaving their village: “Be careful of the cars... Look out for muggers... Don’t stay late outside...” emphasizing that there is also a distinction between the safe streets of villages, and the dangerous dark alleys of the city.

Initially, these examples may seem anecdotic; and indeed they are not always true. Nevertheless, they do reveal a certain truth about streets that many scholars relate to: the concept of ‘street’ is vague and can be associated with a positive as well as negative image. As it is vital to study the street in all its variations and



associations, it is important at this point to be clear about the vision of ‘streets’ that this research will encompass.

Indeed, this research aims to seek an understanding of the street as a public space which accommodates social activities while also providing safety, aesthetics, environmental and developmental opportunities. This positive consideration of the ‘street’ - or the new concept of the street, that which the revolutionary urban planners sought - is the purpose of this research. This is contrary to the notion of the ‘modern street’, created in the early twentieth century as a narrow, long public space serving merely a movement function for motorized vehicles. Today, most of these seem unsafe and dark, lack life, and are poisoned by pollution that degrades the environment. This concept of the ‘modern street’ reminds us of poverty and miserable citizens (Mehta V. , 2013).

Although human settlement may occur without the use streets it is possible to suggest that the street is the fundamental ‘City’ Element (Taylor & Francis Group ). In another say the streets define a city. “Streets are powerful tools of urban design and consequently of understanding and making the city legible” (Mehta V. , 2013, p. 01). In the past the street, road or boulevard is defined as a simple path of communication between places. The emphasis is on movement between places - a two-dimensional path. But it is also a matter of categorization. Physically the line of the street can determine the private plots including the buildings and the inner courts in one side and in the other side the public plots including the green area and the public spaces. In this case the street presents two elements of the city

image components suggested by Lynch (Lynch, *The Image Of The City*, 1960). It appears sometimes as a path and other times as an edge.

From a morphological point of view, Rapoport defines the street as a narrow, linear space lined by buildings found in settlements and used for circulation and certain activities (Rapoport, 1977, p. 113). However, he defines the urban space as a “more than three-dimensional physical space” (Rapoport, 1977, p. 12). “In urban contexts eye movements through space (...) differ (...) between streets and squares. In the case of streets, due to the nature of the space, the movement is directed, centered on the middle distance scanning left and right. Recognition patterns are thus balanced, and attention drops smoothly with evenly decreasing amounts of information” (Rapoport, 1977, p. 184). However, in squares, recognition patterns are ambiguous and attention increases and decreases. Thus, “the sequential and dynamic natures of perception lead to differences in scanning” (Rapoport, 1977, p. 184).

The main purpose of this discussion is to study the functions and spatial qualities of the street, its physical comfort, social behavior, vibrancy and vitality, its efficiency and aesthetic qualities and beautification. For the purpose of this study, the analysis of the street will be taken as an enclosed, three-dimensional space between two lines of adjacent buildings. The street not only connects the buildings at both street and city level, it also eases human and vehicular traffic, and allows for the movement of economic activity. (Moughtin, 1992). Additionally, the street also allows for social interaction, acting as a platform for social communication and expression among the people of a city. “People see the street as part of the

city in many perspectives according to their interest” (Hartanti, 2012). Indeed, beyond its architectural identity, every street has an economic function and social significance, and it can thus be analyzed in terms of who owns, uses and controls it; the purposes for which it was built and its changing social and economic functions; how it is used as a site for casual interaction, including recreation, conversation, and entertainment, as well as its use as a site for ritual observance.

### **2.3 Street Typologies, Characterization of Street Networks and Street Classification Systems**

A clear distinction can be drawn in functional terms between roads and streets as follows: Roads are thoroughfares with the sole objective of expediting vehicular traffic. A street, however, performs significant functions for the public beyond merely those related to traffic. Usually lined with buildings and incorporating public spaces, streets support a range of activities that include those of a social, retail and commercial nature. Within the context of urban settings and rural boundaries, all thoroughfares should be considered as streets (A Policy Statment for Scotland, 2010).

The road classification system is a fundamental tool for urban design and management that designates streets into different groups or classes depending on their intended function. This systematic approach allows for improved transportation planning, traffic and road operations, and better design and maintenance of road infrastructure (City Of Toronto , 1998). It is an optimized approach that assists with daily decision-making, policy management and

prioritization, and is the framework recommended in the Transportation Master Plan.

The hierarchical street system generates the classification of streets according to their traffic loads, functions, dimensions, and the types of movement accommodated. The conventional classification, also called the Functional Classification System (FCS), considers the road function and includes streets that are defined as arterial, collector, and local streets (Forbes, 1999) and (Hartanti, 2012). Local streets are mostly residential in use. They are also often narrower in width to the collector and arterial streets. Collector streets usually run perpendicular to local streets and move traffic from local streets and to arterial streets. They can be residential, commercial or institutional in use. Arterial streets can be minor or major. Minor arterials can be institutional or commercial in nature, collecting traffic and directing it through a community. Major arterials are usually major roadways such as freeways, expressways or interstates (Jones & Wienckowski, 2009). The American Institute of Architects' (AIA) street classification system, meanwhile, is based on "capacity and character". Capacity measures how well a street moves people, with motor vehicle travel based on the number and width of lanes, intersection control and other factors. Character measures a street's appropriateness for pedestrian activities and different building types (The American Institute of Architects, 2007). Street character is reflected in the associated buildings, frontages and landscape types, and sidewalk width and facilities. [Table \[19\]](#) in [appendix A](#) shows the AIA's proposed system of classification for all streets within a city or town, presenting ten classes that reflect

the varying degrees of suitability for movement of traffic, pedestrian activity and types of building.

AIA described streets as "A small-scale, low-speed connector. Streets provide frontage for higher-density buildings such as offices, shops, apartment buildings, and row-houses. A street is urban in character, with raised curbs, closed drainage, wide sidewalks, parallel parking, trees in individual planting areas, and buildings aligned on short setbacks" (The American Institute of Architects, 2007). It is evident from this description that the AIA is more concerned with how the thoroughfare impacts on the community and fits in with adjacent land uses than the functional classification system.

In Abu Dhabi (Abu Dhabi Urban Planning Council, 2012), the manual defines streets with a two-name convention: the "Context name" where urban land use such as "residential" or "commercial" is definitive; and the "Street family name", which focuses on the street's transport capacity. Context names are summarized as: City- Mixed-Use Central Business Districts (CBD) with a high-density area, Town-Mixed-Use areas with a medium-density level, Commercial areas with a variety of levels of services and commercial, residential, industrial and inactive frontage, places where no buildings or land uses front the street. The street family names are: Boulevard, Avenue, Street and Access Lane, [table \[20\] in appendix A](#).

For the purpose of this study, the focus will be on commercial streets in mixed-use neighborhood

## 2.4 Recent Theories on Great Streets

### 2.4.1 Pioneer Planners' Recent Ideas

Two major city design movements arose in the early twentieth century as a result of the previous century's industrial cities: the 'Garden City' movement and the CIAM's Charter of Athens. Both provided some of the most influential theoretical proposals on the street, the principles of which oriented and conceptually structured the practice of city planners and urban designers for the remains of the century. Both implicitly reflected the 'utopian city', and accordingly, dramatic changes were proposed by creating zoning in the city, figure 5.

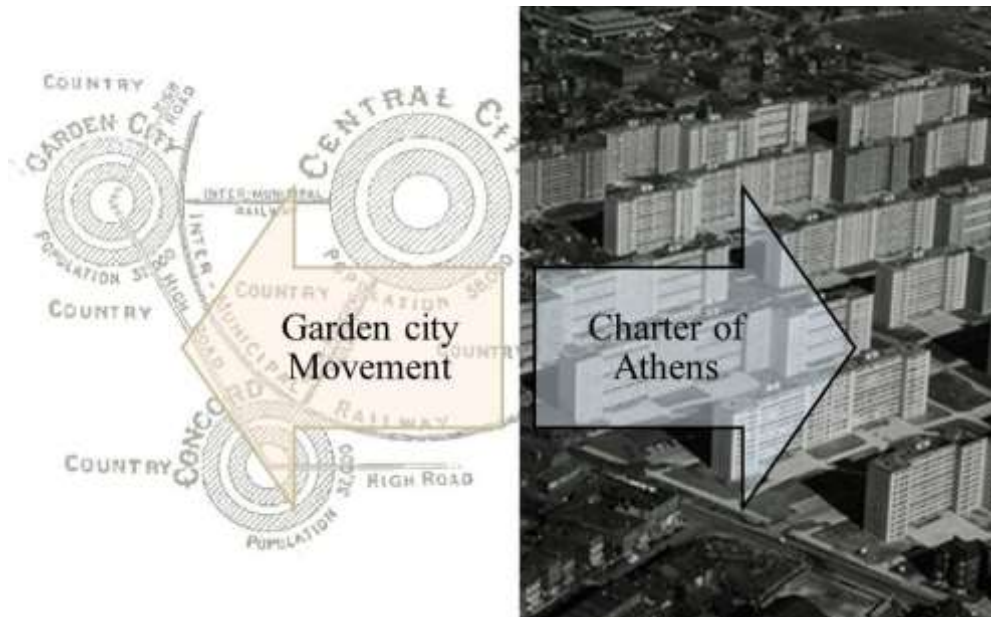


Figure 5 Two City Manifestos in the twentieth century discussed the 'Street' as a public realm, (Abdul Sabour, 2014)

The Garden City movement was not against the street, but called for a separation between vehicles and the people. It considered the low-density suburban development as the ideal model for the community. The movement proposed green pathways and areas between buildings instead of the street's sidewalk, which made the street unavailable to pedestrians for short travels, figure 6. Indeed, the architects designed the street only for vehicles' circulation (Jacobs, 2010).

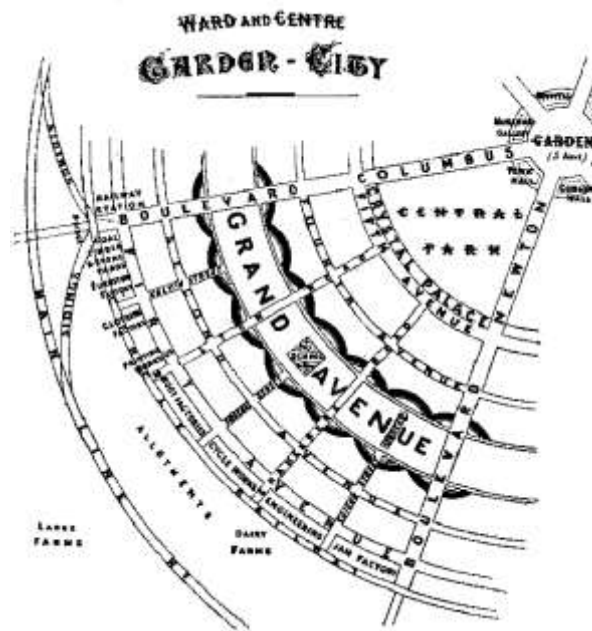


Figure 6 Garden City Movement, (Barlas, 1998).

The search for an ideal urban pattern, for community and architecture, took place at both the 1933 and 1951 CIAM conferences (Barlas, 1998). But the movement ended up calling for the separation of land uses, rather than a healthy integration.

However, the ideas about the street were changed from one conference to another because the theory and practice were developed in parallel. “For instance, in the RIBA conference 1910, the street was accepted as an integrated part of the urban fabric” (Barlas, 1998). With the 1951 CIAM conference, and after the Second World War, the street was not even discussed, as it became theoretically lost in the enormous open spaces of the public realm and high-rise buildings (Barlas, 1998). Yet, CIAM architects were committed to the replacement of the social environment supported by the street, and their Charter of Athens announced the philosophy of rationalism, forming the theory of the modern movement in architecture and town planning. Their aim was to eliminate the linear and formal structure of the street, which they called ‘the rue corridor’, to achieve land-use separation. Their rationale for rejection of the ‘old fashioned’ street was based on its many negative aspects, such as traffic congestion, air pollution; lack of sunlight, and most importantly, functional heterogeneity (Anderson, 1978). However, this approach overlooked the street’s positive aspects. Once, the street was an urban element that propagated an ideal and harmonious relationship between man and the environment (Barlas, 1998). The problems that preoccupied the CIAM architects were related to these issues. They needed to frame the role of the State in modern society, but the negative aspects of the street remained a hurdle to this objective. The preoccupation with function, structure and standardization was challenged in the 1950s by the need to consider human interaction with and within a space.

One outcome of this change in thinking was the rehabilitation of the street as a legitimate element of civic design by Alison and Peter Smithson: “In a tightknit



society inhabiting a tightknit development there is an inherent feeling of safety and social bond which has much to do with the obviousness and simple order of the form of the street (...) The street is not only a means of access but also an arena for social expression". The Smithsons, by the early 1950s, became acute in their analysis, which unfortunately led to the idea of airborne streets and multi-level cities by breaking apart the streets' constituents: "the house, the footpath and the vehicular strip" (Moughtin, 1992, p. 129).

The efforts to resolve the conflicting forces of urban dynamics by means of a new understanding of urban transformation nevertheless had similar consequences. One way or another, such efforts resulted in the expansion of the boundaries of private space (Barlas, 1998). One major trend can be summarized as the revival of, or the return to, the street, profiled in well-known writings such as Jacobs' 'The Death and Life of Great American Cities'. According to Jacobs, "The trust of the city street is `formed over time from many, many little public sidewalk contacts (...), the absence of this trust is a disaster to a city street" (Jacobs J. , 1961, p. 73). This trust can be built based on two main elements: safety and social contact. J. Jacobs suggested that streets and sidewalks are the main public areas of the city. Thus, she argues, a well-used street is often safer than a park. And to obtain a safe street, we should always keep an 'eye' on the street, which should be vibrant and full of pedestrians. Behind the 'eye', there should be the 'brain', an almost "unconscious assumption of general street support" (Jacobs J. , 1961, p. 73) for the street's trust, which comes from the friendliness and connectivity amongst pedestrians. Her suggestion is for a newfound appreciation for organic

urban vibrancy in the United States and cities based on the idea of the safety, figure 7.

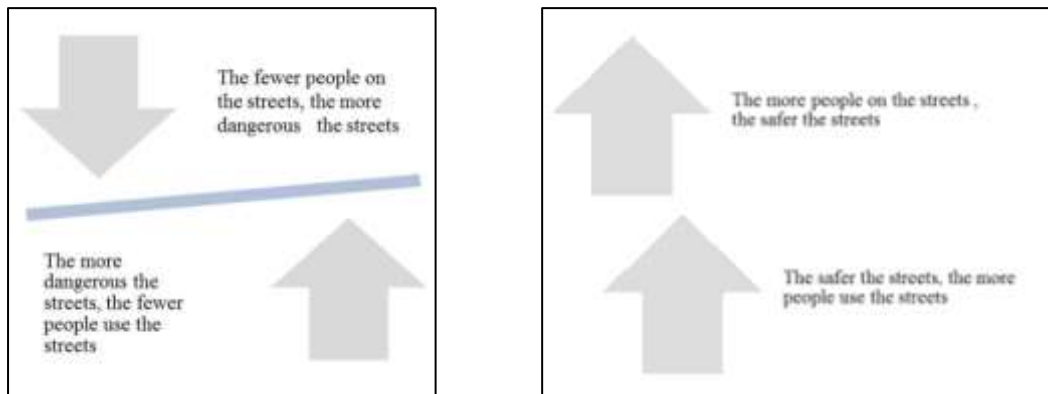


Figure 7 Chart clarifies the relationship between the safety in the streets and the vibrancy as per J.Jacobs' concept. Adapted by the Author.

Accordingly, the streets and their sidewalks become the most vital organs of a city. When one thinks of a city, one immediately thinks of its streets. If they look interesting, the city looks interesting, (Jacobs J. , 1961). If they look dull, the city appears dull.

Subsequently, J. Jacobs described the four necessary physical conditions for dynamic urban life as per her research for the ideal neighborhood as follows: multifunctional neighborhood or district (to create and enrich social life), figure 8, short blocks and connected street systems, varying age and condition of buildings, and sufficient density (Jacobs J. , 1961).

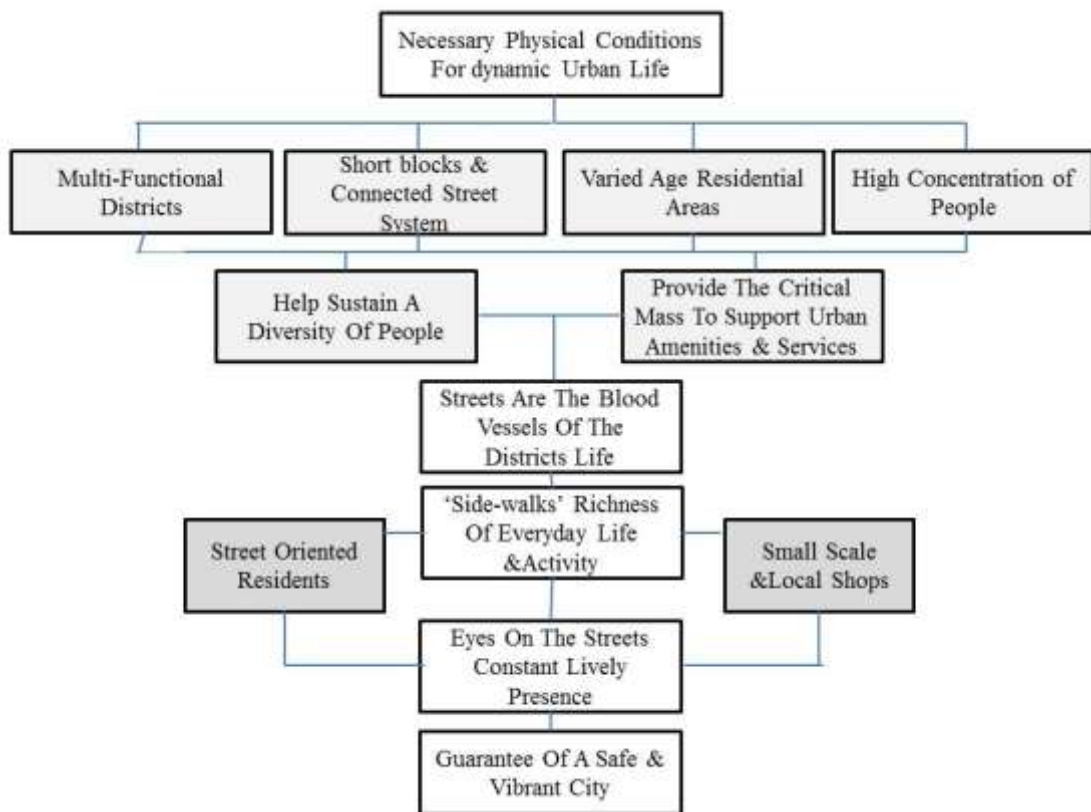


Figure 8 J.Jacobs' concept for designing the neighborhood adopted by the author from her famous book 'The Death and Life of Great American Cities'

However, in analyzing the utility of the street as an element of city design for the future, it is not possible to objectively affirm how or to what extent the physical environment affects the way people behave (Moughtin, 1992, p. 130). For example, in the 1940s and 1950s, it was thought by planners that through the manipulation of land-use patterns and the design of small neighborhoods, a 'community' would somehow result.

In Britain, the thinking about the concept of community immediately after the Second World War reflected a genuine desire to reproduce in new towns the

coziness of the quintessential English village or the cooperative unity of a working class street. The friendliness of the street was wrongly surmised to be as a result of the presence of a pub/bar, corner shop and church hall - which is, in some way, the equivalent of the coffee shop, 'Souq' and mosque of most Middle Eastern communities. "No account was taken of the deep roots of the inhabitants of the working class streets or of the close family and economic ties of the street system", as (Gutman, 1966) points out. A sociologist, he points out in his research, 'Site Planning and Social Behavior', the link between the style and character of the 'housing' and the lives of its occupants, concluding that the 'site' or spatial arrangement influences the behavior of residents.

Conversely, in his renowned book, 'The Concise Township' (1961), Gordon Cullen identifies 'Charming Spaces' that are vital to a community's attachment to a street or a neighborhood. He asserts that these spaces come into existence as a result of an existing cohesive community, and are not the factors that could bring about such a community (Carmona et al, 2003). Amos Rapoport states that designers tend to exaggerate the effect of their spatial composition on the community (Rapoport, 1977), while sociologist, Herbert Gans (1962), also believes that the physical environment has much less effect than planners imagine. It is the social environment that can actively influence the cohesion of a community (Moughtin, 1992). For instance, in his 1962 review of J. Jacobs' 'The Death and Life of Great American Cities', Gans argued that the sidewalk and street life that Jacobs emphasized is only one aspect of urbanity, which is more correctly explained by social characteristics, especially cultural differences. In contrast, Jacobs argued that any urban neighborhood firmly sustaining street

diversity and vitality has the power to draw and hold people, whatever their social, cultural or economic background. Gans points to this as a contradiction in Jacobs' work, and identifies a contradiction where Jacobs attacks planners, only to reuse the same concept later in the book. Gans iterates that the last assumption, which J. Jacobs shares with the planners whom she attacks, might be called the 'physical fallacy' (Moughtin, 1992), which leads her to ignore the social, cultural and economic factors that contribute to vitality or lifelessness. "It is, therefore, necessary to examine the function and role of the street within the urban fabric so that the designer is better able to understand and give form to this important element of city design" (Moughtin, 1992, p. 131).

With today's concern over energy consumption, it is no longer viable to plan streets without consideration of distances and proximity. Land-use policies that encourage dispersal seem all the costlier in terms of time and energy. Whether a substitute for the energy-hungry petrol engine will soon be available or not, increasing street connections in order to reduce traffic congestion has proved to be a counter-productive solution, as more roads only seem to create more traffic. According to Moughtin, who focuses on the Middle East and its turbulent political and socio-economic situation, it is far more interesting to concentrate on reducing congestion simply by reducing the number of cars on the streets, shifting from the car to public transport. Even if we assume that a new form of engine could one day efficiently replace the fuel-based engine, "it seems clear that unrestrained vehicular movement on a massive scale is incompatible with cities and their streets as we know them today" (Moughtin, 1992).

## **2.4.2 Great Streets Concept**

“Great Streets”, “New Urbanism”, “Complete Streets”, “Better Streets”, “Smart Growth”, “place making” and “Green Streets” are all terms that seek the same objective: to make our public spaces and streets more attractive, sustainable, vibrant, and “friendly” for users. Many contemporary movements and associations – whether they are grassroots or academic or neither or both - are now evaluating how to make the streets ideal places for people. The following specific characteristics are parts of this discussion:

### **2.4.2.1 Unity in Street Design**

Unity in the streets can create a feeling of satisfaction with users. To contribute this unity in the street design, the architect or planner must assess the building forms, their direction within the site, building heights and architectural style. All influence the sense of unity and feelings regarding the enclosure in the street. “Possibly the most important contribution to the unified street is the form of the buildings which should appear as surfaces rather than as a mass” (Moughtin, 1992, p. 143), figure 9.

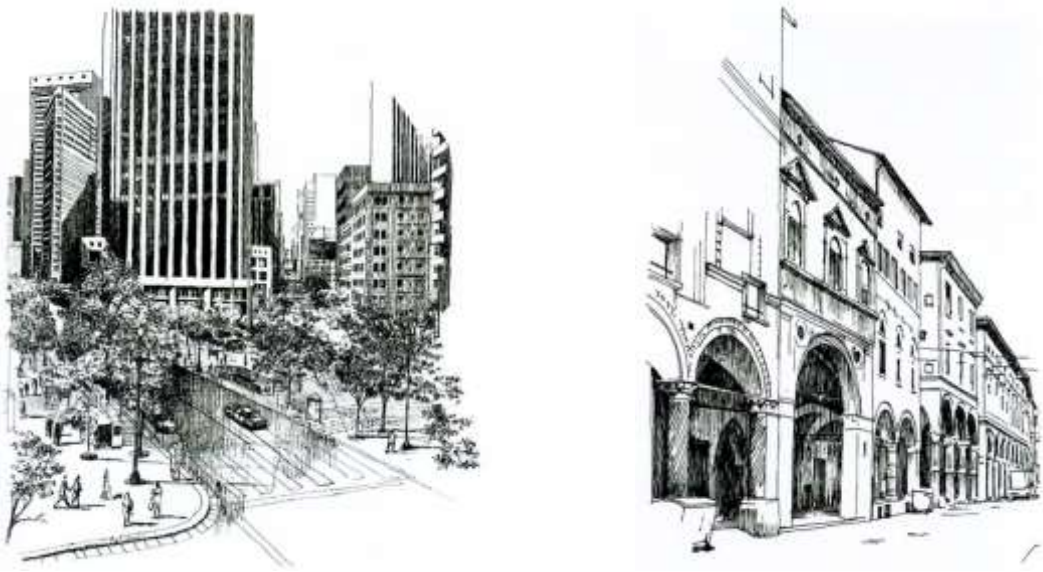


Figure 9 Two images illustrate the disunity and the unity in the street, (Jacobs A. B., 1993)

#### ***2.4.2.2 Functions of the Street***

The street is recognized to be not only a means of access but also an arena for social expression (Moughtin, 1992). It is therefore necessary to examine the function and role of the street within the urban fabric so that the designer is better able to understand and give form to this important element of the city design. The street, in addition to being a physical element of the city, is also a social fact. “It can be analyzed by who owns, uses and controls it; the purposes for which it was built and its changing social and economic function” (Moughtin, 1992, p. 131). Besides linking buildings together, the street has also a tangible function that is to facilitate communication and interaction between people and groups, providing a space for recreation and entertainment, as well as for ritual observances (Moughtin, 1992).

### **2.4.2.3 Spatial Qualities of the Street**

Certain physical qualities are required for a great street. We take for granted that streets function as a means to gain access to abutting uses and travel from one place to another within and through surrounding neighborhoods (mainly on foot), often by mass transit or car. These certainly are the functions of good streets, but great streets offer comfortable, safe, pleasing, and even enlightening journeys for the drivers or passengers in mass transit vehicles or private cars traveling through them. The best streets provide warmth and sunlight when it is cold and cool shade when it is hot. They have also a quality of transparency at their street edges, where the public space of the street and the less public domain of property and buildings meet, offering one a sense of what it is that defines the street.

### **2.4.2.4 Physical Comfort**

By eliminating all non-conforming uses from a residential area, one reduces the disposition toward social interaction on the street. Yet, it is needed to examine the function of the street by linking the street activity with high density and a mix of land uses (Moughtin, 1992). It is by studying this street activity that one is able to understand the function of the street. Streets that function as main traffic networks will require different approaches in design to those that are quiet residential streets, needing privacy and space (Moughtin, 1992). The precise form of pedestrian-vehicular interaction is indeed conditioned by the function of the street. While the total separation of vehicles and pedestrians might hinder the development of a lively street, the success of pedestrian areas is dependent on the variety of attractions they offer so that a large number of pedestrians have reason for remaining. A significant challenge for the designer of the pedestrian precinct is



the integration of parking spaces within the surrounding urban fabric. Separation of high-speed traffic movement from pedestrian traffic is also a necessity.

#### **2.4.2.5 Social Comfort**

Social aspiration underpins the suburban street, where people move upmarket to a larger house with a bigger garden. The street, however, is a common area that serves a group, not just a family. It is, to some extent, a closed social system with distinct boundaries, despite acting as a communal thoroughfare to other areas. The factors that seem to most influence street use are user density, land-use mix and interaction between pedestrians and vehicular traffic. Street activity occurs when many pedestrians use the street in a variety of ways, and this activity increases further when vehicular access is restricted, density is high, and there a wide range of facilities is available within walking distance.

#### **2.4.3 The Street as a Third Place**

The concept of a street as a third place was proposed by Oldenburg, 1989, after urban decline in the United States of America as a result of problems such as urban renewal, increasing residential mobility and freeway expansion. These problems were encountered also as a result of the Second World War, and rapidly affected urban prosperity. They revealed deep malfunctions in the way architects designed urban spaces at the time. Something was missing. Society was changing rapidly and architecture should have adapted. During these post-war golden years, people had more leisure time than ever before, and this societal shift brought renewed attention to public places as venues to endorse community life. Oldenburg's research concludes by defining the street as a third place for people

to gather, considering it their favorite place to go to, 'far' from their houses and workplaces. The streets, sidewalks, parks and squares should be places where they are welcomed, even when appearing at their most casual. They are used by people who are either sitting, standing, walking, or enjoying any sort activity during which an informal social life can thrive (Oldenburg, 1989).

The concept of a third place is derived from the socio-spatial opportunities allowed by terraced cafes and small restaurants where people can spend the third part of the day, gathering with friends and family, enjoying meals, shopping and playing. These places should be designed to be suitable for all users, with everyone secure in a sense of belonging to that area and that, to a certain extent; it has been created for them. The third place can create the positive social interactions that are required in communities where people are able to express their needs and enjoy public life. When third places become vital components of a city, it is an indication that a healthy community is prospering.

## ***2.5 Recent Theories on Urban Vibrancy***

### ***2.5.1 What is Urban Vibrancy?***

'Vibrancy', 'Vitality' and 'Liveliness' are urban attributes that can determine the quality of urban life. The Merriam-Webster Dictionary defines 'vibrancy' as "having or showing great life, activity, and energy." In the Oxford English Dictionary, 'vibrancy' is defined as full of energy and life, while a vibrant city is defined as a 'cosmopolitan city'. On the other hand, 'vitality' means the capacity for survival or the continuation of a meaningful or purposeful existence. In the

Merriam-Webster and Oxford English dictionaries, ‘vitality’ is defined as a lively or energetic quality, the power or ability of something to continue to live and be successful, and as a state of being strong and with active energy.

‘Vibrancy’ and ‘vitality’ are distinct concepts, although there is substantial overlap, and they may occasionally be used interchangeably. Both concepts are multifaceted, dynamic, flexible, and sustainable. In both notions, the same essence appears in their definition: that unique, temporary or ever-evolving is a valid attribute; and that sameness, quietness or stagnancy is a disadvantage.

For high-density areas such as main commercial streets or city centers, it is important that they be vibrant in order to have a positive impact on the economy and users’ social lives. However, for the sustainable neighborhood or medium-density area, it seems important to examine and develop the vitality, which focuses more on livability and urban quality. In this research, the term ‘vibrancy’ will be used to connote the successful social and economic life.

Urban vibrancy can be defined as a viable place for the community in which it finds authenticity, sociability and connections, and where it takes pride and seeks involvement for multiple activities (Findlay & Sparks, 2009). It is an integrated set of activities that seek to reverse economic, social, environmental and physical decline to achieve lasting improvement (Welsh Government, 2013, March).

According to Montgomery’s (1998) definition, ‘vitality’ refers to “the number of people in and around the street at the various instants of day and night time, the uptake of facilities, the number of cultural events and celebrations per year, the presence of an active street life and the extent to which a place feels alive or lively” (Jalaladini & Oktay, 2013).

Vibrancy is a measure of how busy a public space is and viability is a measure of the public space's capacity to attract ongoing investment for maintenance, relevance and adaptation to changing needs (United Kingdom Portal Planning, 2015).

Vitality is one of the performance characteristics of urban design as per Lynch, 1981. It is concerned with the degree with which an urban space is socially successful while providing a satisfactory visual quality in the environment. He mentioned "three principal features of the environment which are conducive to health" (Lynch, 1981, p. 121), good biological function and survival, making the place vital: 'Sustenance', 'Safety', and 'Consonance'.

Consequently, it seems that terms such as 'Vibrancy', 'Vitality', 'Viability' and even 'Livability' are used interchangeably by scholars to describe the quality of urban life in a designated area in its social, economic and environmental aspects. Accordingly, no differentiation is made between these notions, and the research draws on these definitions to explore the notion of 'Vibrancy'.

Additional to the 'Vitality' criteria, Lynch identified five key performance dimensions that need consideration for the design of 'good' urban spaces. 'Sense' is the degree to which users can recognize and distinguish a space due to its unique temporal and physical milieu. 'Fit' is the degree to which a place accommodates and enables human cultural and social behavior. 'Access' is the ability of people to reach other people, activities, resources, places and information. 'Control' is the degree to which users of a space create and manage access to a place. He also mentioned two Meta dimensions: 'Efficiency', which is

the balancing criterion or the cost of achieving a degree of vitality, sense, fit, access and control, and finally, 'Justice', or who is getting how much of it, figure 10. He argued that the well-designed urban space is not always the most vital one: "The ideal of vital environment will often conflict with a well-fitted one, when by good fit we mean comfort" (Lynch, 1981, p. 223). All these criteria work together to form the performance of the urban space (Lynch, 1981).

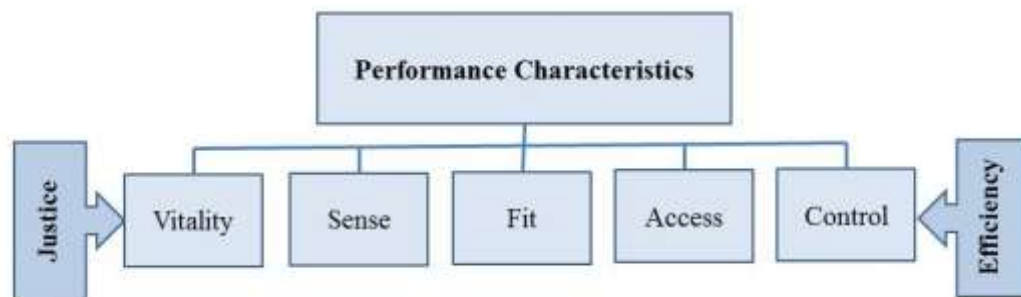


Figure 10 Five basic dimensions proposed by K. Lynch for the performance characteristics, source the author.

The appropriate urban environment must integrate activities such as living, working and shopping in reasonable proximity to each other (accessible by walking). Properly planned public space boosts pedestrians' interaction, as no public life can take place between people when they are in cars.

Accessibility, as well as community involvement, mixed-use spaces and the pedestrian domain all require a level of compactness and large enough population

to allow for interaction and integration. Alexander and A. Jacobs, and Appleyard, all promote medium- rather than high- or low-density, while Jane Jacobs put forward that urban density is required for a vibrant urban center in contrast to the suburb, (Moughtin, 1992)

Allan Jacob and Donald Appleyard collaborated in analyzing the failures of the CIAM and Garden City movements (Jacobs & Appleyard, 2007). Their conclusion was that such movements over-estimated the importance of design in urban life as a reaction to the physical decay and social inequities of industrial cities. They issued ‘Toward an Urban Design Manifesto’, which argued that social, economic, and cultural factors are influenced by physical form factors. These physical form factors, such as materials, dimensions and design, do not act in the same deterministic way those movements considered design factors. Rather, they act in terms of possibilities and probabilities, and so to neglect the physical is to ignore an essential part of planning. The ‘manifesto’ identifies the problems of modern urban design as the following: poor living environments, gigantism and loss of control, large-scale privatization and loss of public life, centrifugal fragmentation, and “destruction of valued places, placelessness, injustice, and rootless professionalism” (Jacobs & Appleyard, 2007, p. 98), figure 11.

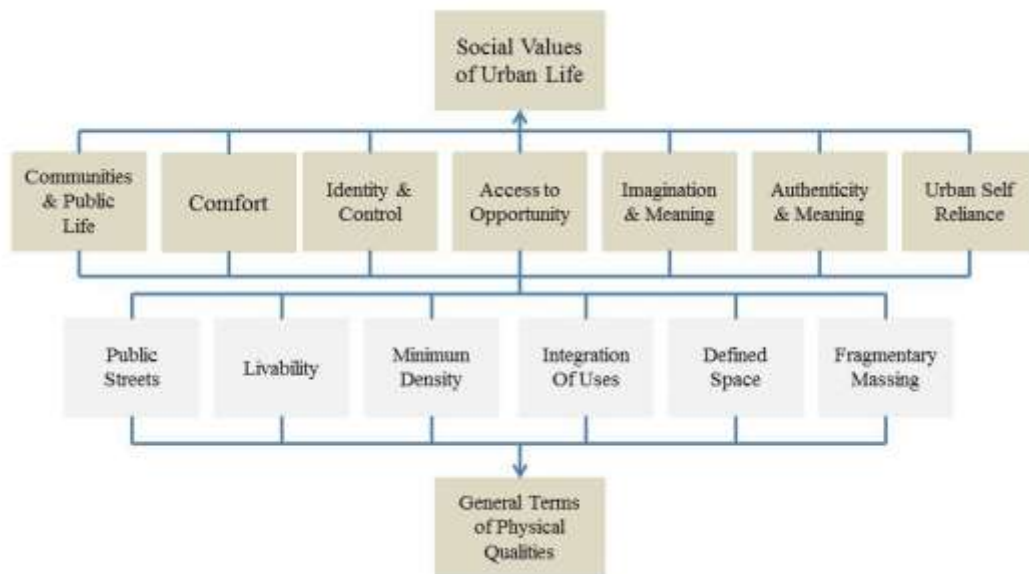


Figure 11 Donald Appleyard and Allan Jacob's "Toward A New Urban Design Manifesto". Source the author

Additionally, the 'Manifesto' sets out to establish central values for urban life which include authenticity and meaning, livability, identity and control, access to opportunity, imagination, and joy. Jacobs and Appleyard's theories regarding the essential qualities that the city must achieve for a healthy urban environment can be clarified by these goals: livable streets, a minimum residential density and intensity of use, integration of activities, buildings that define public space and fragmentary and architectural massing. 'Toward an Urban Design Manifesto' remains an important touchstone for urban planners today because it calls against dehumanization, and for a high quality, vibrant urban life.

### **2.5.2 Urban Vibrancy Parameters**

Walkability, pedestrian safety, mixed-use spaces, livability, social spaces and vibrant streets are terms used by postmodern urbanism to indicate the urban quality of the space. For instance, the work of many street researchers suggests a strong relationship between the public users of the street and livable and memorable places. David Sucher's 'City Comforts, 2003' follows this tradition (Sucher, 2007). In his book, Sucher excerpts J. Jacob's concept: human-scaled places with high levels of pedestrian activity, diversity, mixed uses, and high densities. He provides three rules for achieving successful urban life: 'build to sidewalk/property line', 'make the building front permeable with no blank walls', and 'prohibit parking in front of the building,' figure 12. Accordingly, a decrease in traffic, and an increase in pedestrian safety, walkability and cycling can be achieved. These ideas were essential to develop the main criteria to set guidelines to design streets and make them livable, efficient and vibrant.





Figure 12 David Sucher, achieving successful urban life. Source, the Author

### 2.5.2.1 Livability

A street that is livable places the highest priority on people and their activities, shopping, sitting, strolling, resting, and walking. Cities such as San Francisco and London have successfully placed much focus on large-scale initiatives that encourage people to walk, bike and use public transport rather than drive their private cars. These initiatives have led to significant attendant benefits such as large number of shoppers, higher property prices, less traffic and stronger interpersonal relationships, all of which have contributed to both the city's economy and the quality of life of the public. (Lusher, Seaman, & Tsay, 2008)

### 2.5.2.2 *Efficiency and Economic Vibrancy*

Measuring the economic vibrancy of commercial streets is an indicator of their efficiency and success. Therefore, economic vibrancy has always been an important objective for urban economists, especially as downtown and mixed-use neighborhood commercial districts have declined over the past few decades for a variety of reasons. Highway development, overbuilt commercial areas, strip-center and regional mall development, competition from large retail chains and discounters, and changes in retail technology, have all played a role in diminishing commercial street's role as the center of commercial activity (West, 2000).

In the light of this, economic efficiency is a concept that has a positive impact on street quality. From a physical point of view, a good and qualified commercial street should be a space offering people multiple corridors of movement. It should be interconnected and convenient for walking. Visitors should be able to meet their needs, making their purchases and returning to their homes. From a perceptual and functional point of view, a qualified commercial area should be meaningful, easy to comprehend, access and navigate, secure and comfortable, offer variety, be attractive, and should possess accessible and different buildings.

The concept of efficiency can be analyzed with and explained by three components as a result of literature research: the physical, functional and perceptual. The effects of these components on the space are considered to influence efficiency. Hence, this research aims to examine the efficiency of the streets and draw the link between spaces with high efficiency levels and user preferences and desires.

### **2.5.2.3 Walkability, Economy and Safety**

Walkability focuses on the link between urban form and walking, where walking needs include accessibility, safety, comfort and attractiveness. Introducing and/or enhancing walkability in a city – as in the degree to which users can easily enjoy walking in a street – can present significant benefits.

Today, it is often only by driving a car along highly congested roads that one is able to access retail and commercial developments. For many potential shoppers, it is more appealing to remain at home instead, particularly senior citizens. When shoppers are unable or unwilling to travel to retailers, a city's economy is unable to reach its true potential (Complete Streets Spark Economic Revitalization, 2014). Studies had shown that walkable streets can boost an economy, and that making a street more walkable can add average property prices simply by improving a street with widened pavements, extra trees, improved lighting and new signage (Walkonomics, 2011). Other studies have discovered a financial link between street walkability and shop rental values, which also affects the financial success of a shop on a particular street. Significantly, making a street pedestrian-friendly naturally increases foot traffic for retailers, such as Spark Street in Washington DC, where foot traffic increased by 20% to 40% (Walkonomics, 2011). Therefore, making the streets walkable could be the most efficient way to grow the economy of the streets, especially as the retail industry is always an important economic contributor (Maxwell, 2012).

By reducing dependency on the car and endorsing walkability, a city can become more sustainable and 'livable' with less of the air pollution, congestion and noise

brought about by heavy traffic. Walkability not only increases property and land values, but also the commercial benefits of a higher level of footfall. Additionally, a sense of safety is an essential indicator of how the efficiency of the commercial street can be increased by walkability, as the vibrancy of pedestrians and walkability eliminates the fear caused by vehicles and darkness. A walkable shopping street is well-lit and has a calm traffic flow, reducing these fears (Chen, 2010). Improved streetlamps installed on the sidewalk and the fact that the majority of shop lights remain on until closing time late in the evenings is allied with the previously mentioned Jacobs' theory of 'keeping eyes on the streets' (Jacobs J. , 1961), where the street at night is similar to that during the day. These factors allow activities to be extended into the evening without shoppers needing to fear the darkness, increasing the efficiency of the street. However, it should be noted that there is an argument that does not generally support Jacobs' theories that crime is deterred by an increase in the number of eyes and pedestrians on the street. Studies suggest that an increase in public activity is counter-balanced by a 'diffusion' of responsibility and a diminished ability to judge what is suspicious behavior. From a morphological point of view and according to the report prepared by (Rubenstein, Murray, & Titus, 1980), figure 13, the weight of the literature indicates that crime generally increases with accessibility of the target and a multiplicity of escape routes. This argues in favor of cul-de-sacs, loop roads, and 'protected neighborhoods', as promoted Donald Appleyard in his book, 'Street Livability'.

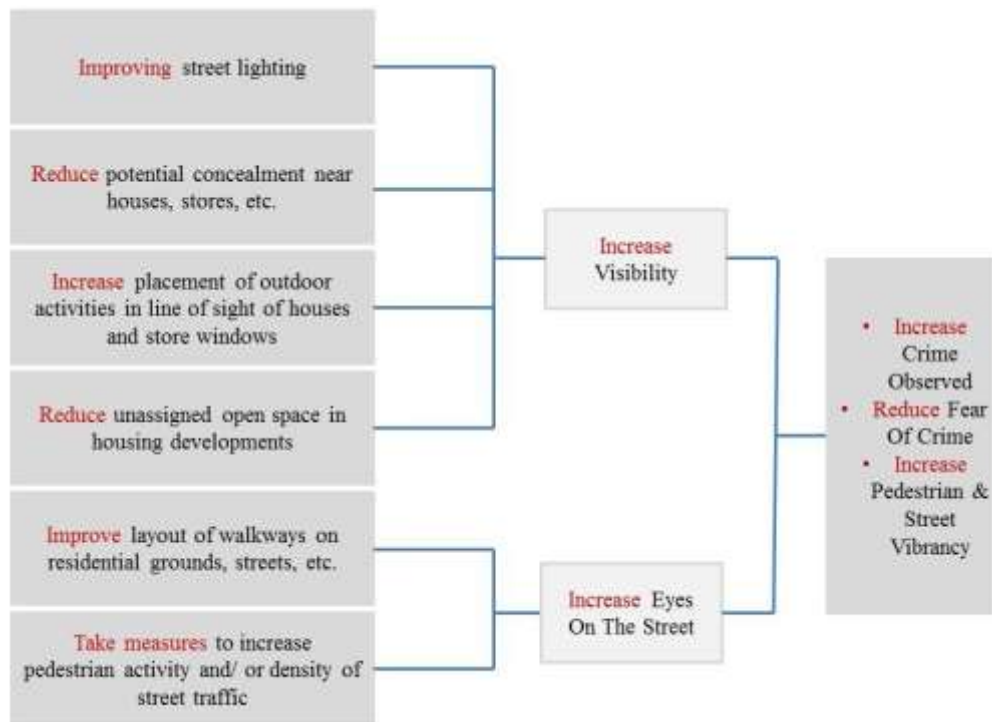


Figure 13 Rubenstein et al assume a constant probability of intervention for an observed crime, adapted chart (Rubenstein, Murray, & Titus, 1980)

In conclusion, walkability is one of the positive social activities of the street and promotes the street's safety and efficiency, and vice versa.

#### 2.5.2.4 **Imageability and legibility:**

K. Lynch defined the legibility of the cityscape as the ease with which its parts can be recognized and organized into a coherent pattern. This definition states that the degree of legibility depends upon the formation of cognitive maps within the wayfarer's mind. Accordingly, it is the quality that makes an area understandable. There are tools that orient users of an area to ensure their ability to navigate

through an area. These tools include route signage, store graphics, spatial markets, streetscape elements, nodes, building design, and the street network.

Lynch, meanwhile, defined ‘imageability’ as the quality of a physical object that gives an observer a strong vivid image. “The paths, the network of habitual or potential lines of movement through the urban complex, (...) The key lines should have some singular quality which marks them off from the surrounding channels: a concentration of some special use or activity along their margins, a characteristic spatial quality, a special texture of floor or façade a particular lighting pattern, a unique set of smells or sounds, a typical detail or mode of planting... These characters should be so applied as to give continuity to the path (...) The very concentration of habitual travel along a path, as by a transit line, will reinforce this familiar, continuous image.” (Lynch, 1960).

### **2.5.3 Measuring The Streets' Vibrancy' Parameters**

Although (Jacobs A. B., 1993, p. 270) said “It remains difficult to isolate physical features from social and economic activities that bring value to our experience”, most of the precedent studies “separate the physical aspects of the environment from the use and management of land uses and business and places that hold special meanings for people” (Mehta, 2013). Despite most scholars’ research having covered these aspects, the studies had overlapping concepts and deeply focused on one or two dimensions at only one time. The gist of this research indicates that “It is not always clear why people go to one street and not another, the reasons may change, and they may have nothing to do with the physical qualities” (Jacobs A. B., 2010). The concept of urban vibrancy and the definition

of good quality commercial streets are still indistinct despite the large amount of theoretical research that has been and is being conducted by scholars, notwithstanding those most designed public spaces are implemented as per international standards, and may be less vibrant than other unplanned public areas.

Knowledge of the history of the streets might help to identify the sense of the place that make people enjoy using it as a third place or likely to visit it repeatedly.

Accordingly, measuring the success of the urban commercial street is not easy work. Many theorists focus on the aesthetics and quality of streets as a part of public open spaces, and others on the experience of public open spaces and their safety and comfort. Certainly, there are some elements that affect people's perception of the commercial streets and their choice to use them. Research in the urban design field has revealed common themes and dimensions of good quality public open spaces. These themes and dimensions are considered the reasons for the vibrancy of the street, referring to the number of people that live on and visit it. Accordingly, planners have to review the inhabitants' perception of their neighborhood commercial street., and analyze its functionality from an economic point of view, taking into consideration the opinion of those invested in the street and those of the shop owners. Hence, how can the users' needs be determined? And how can the research framework be established?

To begin with, in order to explore the urban vibrancy concept, measurement indicators should be established based on theoretical studies and existing examples.

John Montgomery, 1998 indicates that the physical environment, people's behavior, and the meaning of the public place combine to form the sense of the public space, (Montgomery, 1998) (Carmona et al, 2003), figure 14.

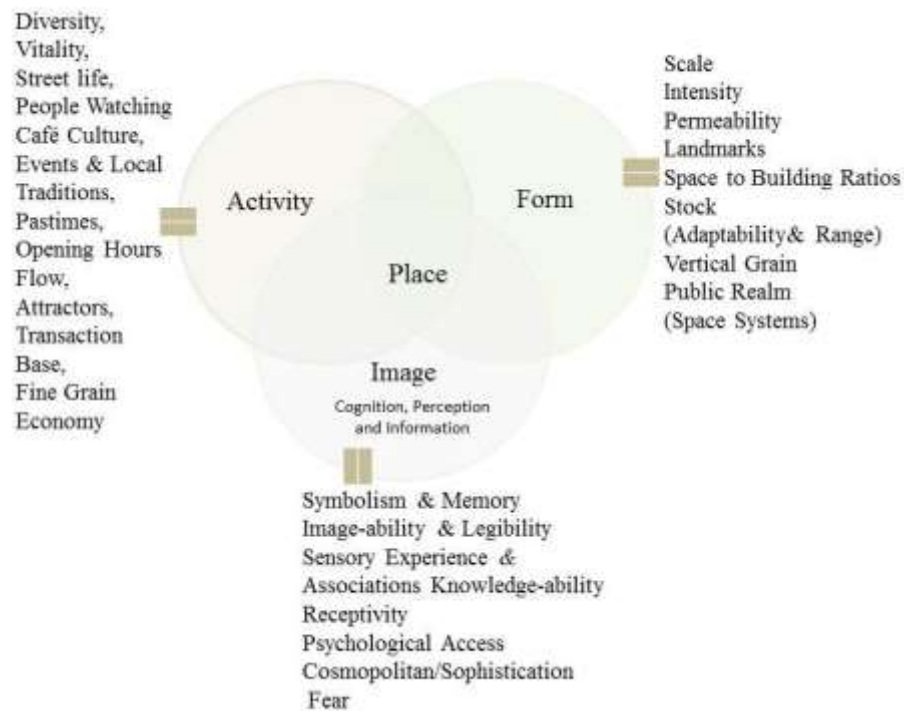


Figure 14 Policy direction to foster an urban sense of 'place making' (Montgomery, 1998)

With reference to Montgomery's concept, the three criteria – 'Form', 'Image' and 'Activity' – and their sub-criteria, the relation between these criteria, the reaction of the people to the physical form, and their perception to the place image, are all aspects that can result in urban pattern and lifestyle defined by indicators, and accordingly can be measured, table 1.



Table 1 Montgomery, 1998, Principles of creating liveliness in a city, (Carmona et al, 2003)

<b>Place Model</b>			
	<b>Activity (Social)</b>	<b>Image (Meaning)</b>	<b>Form (Physical attributes)</b>
<b>Principles</b>	<ul style="list-style-type: none"> <li>• Generating pedestrian flows and vitality</li> </ul>	<ul style="list-style-type: none"> <li>• Legibility</li> </ul>	<ul style="list-style-type: none"> <li>• Achieving development intensity</li> </ul>
	<ul style="list-style-type: none"> <li>• Seeding people attractors</li> </ul>	<ul style="list-style-type: none"> <li>• Imageability</li> </ul>	<ul style="list-style-type: none"> <li>• Zoning for mixed use</li> </ul>
	<ul style="list-style-type: none"> <li>• Achieving a diversity of primary and secondary use</li> </ul>	<ul style="list-style-type: none"> <li>• Symbolism and memory</li> </ul>	<ul style="list-style-type: none"> <li>• Building for a fine grain</li> </ul>
	<ul style="list-style-type: none"> <li>• Developing a density of population</li> </ul>	<ul style="list-style-type: none"> <li>• Psychological access</li> </ul>	<ul style="list-style-type: none"> <li>• Adaptability of built stock scale</li> </ul>
	<ul style="list-style-type: none"> <li>• Varying opening hours and stimulation of the evening economy.</li> </ul>	<ul style="list-style-type: none"> <li>• Receptivity</li> </ul>	<ul style="list-style-type: none"> <li>• City blocks and permeability</li> </ul>
	<ul style="list-style-type: none"> <li>• Promoting street life and people-watching</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge-ability</li> </ul>	<ul style="list-style-type: none"> <li>• Streets: contact, visibility and horizontal grain</li> </ul>
	<ul style="list-style-type: none"> <li>• Growing a fine grained economy.</li> </ul>		<ul style="list-style-type: none"> <li>• The public realm</li> </ul>
			<ul style="list-style-type: none"> <li>• Green space and water space</li> </ul>
			<ul style="list-style-type: none"> <li>• Landmarks, visual stimulation and attention to detail</li> </ul>
			<ul style="list-style-type: none"> <li>• Architectural style as image.</li> </ul>

Mehta (2013), in his studies, creates a ‘good public space index’ to measure the level of the public space based on parameters, including the intensity of use, people’s duration of stay, the variety of use, the diversity of users and public behavior, by applying behavior mapping and users’ perception. “A lively ‘Vibrant’ neighborhood commercial street was defined as a street with the presence of a number of people engaged in a variety of predominantly stationary,

lingering, and sustained activities, particularly those activities that are social in nature” (Mehta V. , 2006, p. 67). In his analysis of the findings, came the result that physical, land use and social dimensions are the most important elements that contribute to the livability of neighborhood commercial streets. The study showed that an appropriate combination of physical settings, behavioral environment, and meanings could provide attractive places that are appropriate to live in and visit.

Accordingly, urban vibrancy can be indicated by several factors, including the pedestrian flow in the public spaces at all times, the performance of the commercial developments, the street’s capacity to attract ongoing investment and future developments, and the number of cultural events and celebrations per year. The measures of analysis using the social attributes include user types, social groups, the variety of activities, active and inactive times, interactions and safety, number of people, and their movement pattern. Physical attributes include physical forms, the amenities of the street space, land use, vacant properties and the variety of the functions within the street.

In Britain (United Kingdom Portal Planning, 2015), planners confirmed that although no single indicator can effectively measure the health of a public space, the use of a series of them can provide a view of performance and offer a framework for assessing vibrancy. Some or all of the indicators below can be used to carry out a 'health check':

- **Accessibility:** The ease and convenience of means of travel, including the frequency, penetration and quality of public transport services, the quality, quantity, location and type of car parking, and the quality of provision for

pedestrians, cyclists and people with a mobility handicap. "Access is the prerequisite to using any space. Without the ability to enter or to move within it, to receive and transmit information or goods, space is of no value, however vast or rich in resources. A city is a communication and accessibility net, made of roads, paths, rails, pipes, and wires. The economic and cultural level of a city is in some proportion to the capacity of its circulation", (Lynch & Hack, 1984, p. 193), a considerable point when noting that the circulation system is the most expensive element in building cities. Hence, the importance of the accessibility in urban life is pointed out.

- Customer views: Surveying customer views is an indicator of users' reactions.
- Diversity of uses: The amount and location of floor space for different uses. Diversity of uses makes an important contribution to the street's vibrancy and viability. This, combined with their accessibility, means that they are often the most appropriate location for activities that attract many people. The appropriate mix of uses will depend on the character and size of the street, however, there is a presumption in favor of development that would make a positive contribution to ensuring that an existing street continues to provide a focus for shopping.
- Environmental quality of the urban area.

- Pedestrian flow: The number and movement of people on the streets, in different locations, at different times of the day or evening and over a period of time.
- Retailer profile: The existing composition and retailer demand.
- Retailers' views: Surveys of the views of existing street retailers.
- Shop rents: Pattern of movement in that part of the street with the highest rents.
- Vacancy rates: Particularly the proportion of vacant street level floor space in primary shopping areas (United Kingdom Portal Planning, 2015)

In Washington DC, the Office of Planning decided to prepare an extensive study of retail streets in the city. The study, prepared by the Street Sense organization, evaluated the essential elements of outstanding retail areas and offered a customizable toolbox to examine the vibrancy of retail streets and to establish the implementation steps to improve the streets. The toolkit incorporated research on best practices and innovative approaches to managing successful commercial districts, and also used retail metrics that assess the level of retail demand, accessibility, location mix and format (Street Sense, 2014). The toolkit defined the relevant elements that have impact on street vibrancy, such as the average of sidewalk width, public open space, population, etcetera, with an explanation of each element and indication of its relevance<sup>2</sup>.

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<sup>2</sup> See the appendix B, table [21]

#### **2.5.4 Designing for Street's Vibrancy**

The study (Street Sense, 2014) found that the District of Columbia has all the ingredients to be an extraordinary retail city; hence, the 'Vibrant Retail Streets Implementation Toolkit' was established based on the study's results. That Toolkit equipped retailers, landlords, business and neighborhood associations, nonprofit organizations and government agencies with the tools needed to support more dynamic retail streets, and provided a framework to help achieve the vision of maintaining vibrancy, sustainability, walkability and great urban form. The Toolkit defined these parameters within the following attributes:

- **Retail Street Management:** Verifying the support from an active merchants' association or non-profit organization provides clear leadership and serves as a surrogate for single landownership for most vibrant retail streets.
- **Appropriate Retail Street:** To ensure that the land use management of the street is suitable, and that appropriate design for the stores and storefronts is used.
- **Retail Mix:** The types of retail tenants on vibrant streets reflect market demand. Unsupportable tenants are not artificially introduced. That said, the merchandising mixes on most vibrant streets have a prevailing retail category of what the people need within walking distance, or what is usually desired.

- **Safety:** Regardless of the crime statistics for the neighborhood, vibrant streets maintain a perception of safety.
- **Championing:** A vibrant retail street is likely to show signs of investment, either by the public or private sector.
- **Anchor:** The street is activated by a civic or cultural anchor that attracts people for purposes other than commerce.
- **Walkability:** A vibrant street is part of a walkable community and is supported by pedestrian-oriented residents.
- **Unity:** Vibrant streets generally have a common character or theme, often historical in nature that binds the street's range of uses.
- **Accessibility:** Verifying that the establishments along a vibrant street are well-served, either by public transport or by adequate parking facilities.
- **Visibility:** To verify that the surrounding streets have sufficient traffic to ensure visibility, but not so much that the area is difficult to access.

As each retail street is at a different stage of development to vibrancy and they are not similar, the Toolkit was designed for each retail space separately to aid those that are emerging as well as the more established environments, with a flowchart describing the attributes of a vibrant street, where each community must fulfill the requirements of the step they are on before progressing to the next.

Indeed, the design of vibrant, well-functioning urban street depends on a clear understanding of the urban environment. Once this is achieved, each street's

function and design parameters can be established so that there is a balance between urban quality and socio-economic aspects. However, it can be difficult to define those features that shape a street – context, for example, will influence the street’s design, yet the street design itself will also shape the context of the street (Institute Of Transportation Engineers, Washington, 2015). For these reasons, this research recommends a clear focus on context and city typo-morphology, additional to the socio-economic aspects and cultural factors.

While the similarity between cities is in the converging methods of building them – where the markers and new technologies are prominent – the final view of the streetscape cannot dismiss the culture and the social paradigm of the city.

Spaces, both public and private, are more respected if they are perceived as belonging to someone. Residents or workers who feel a space is within their sphere of influence are more likely to question the negative behavior of people in the space. Perceived ownership, symbolic or real, can be asserted through use and maintenance of the site. Repairs and other signs of care can potentially impact how people perceive a neighborhood or street and behave in it. (Lynch & Hack, Site Planning, 1984).

## ***2.6 Examples and Precedents of International Projects as References***

The advantage of having international case studies is that they help to identify commonalities and similarities among both local and international examples. The

three international projects were selected based on their successful characteristics. Each one has its own discriminate character, which can provide ideas that can be adapted.

### **2.6.1 'Ramblas de Catalonia' Street, Barcelona, Spain**

Ramblas in Barcelona stands out as the best street in the world with a design that is opposite to all others. While all streets have a middle lane for cars and sidewalks for pedestrians, Ramblas is designed so that people walk in the middle, with narrow cart-ways on either side for vehicles. People have direct access to shops on the both sides, and are provided with greater visual interaction. Here the welcoming nature of the design, and the quality of the buildings that line its edges, provide a sense of unity of the street. Many of the buildings are of reasonable height, varying between five and seven stories, defining the street with a visually appealing enclosure, in spite of the street's large span. Stores at street-level, topped with windows, give the street a feeling of transparency. There are significant anchor destinations along the street, including a grocery store and a major theater and culture institute, conveniently served by an adjacent metro station, figure 15.





Figure 15 Ramblas De Catalonia Street

In the center pedestrian zone, shady sitting areas provide space to enjoy meals from cafes, and magazines and flower stands add to the people-friendly atmosphere. Aged trees line the pedestrian zone, providing additional shade and greenery, figure 16.

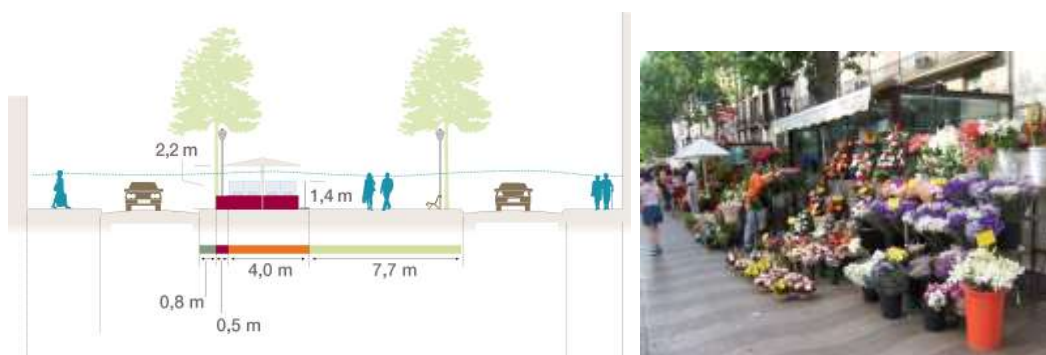


Figure 16 A center area allows pedestrians to enjoy social interaction

It is a street successfully designed for people to use, and, at almost 2 kilometers long, it is not quite a straight line. Ramblas de Catalonia begins on the south-east side at the port's Columbus statue, moving gradually upward to the north-west side's 'Plaza de Catalonia' (Jacobs A. B., 1993). The central walkway varies in width from 11 meters at its narrowest to almost 24 meters near the plaza. Ramblas de Catalonia has a 'Walk Score<sup>3</sup>' of 100 out of 100, (Walk Score, 2012), based on how the street's mixed-land-use supports walkability as shown in the chart in figure 17.

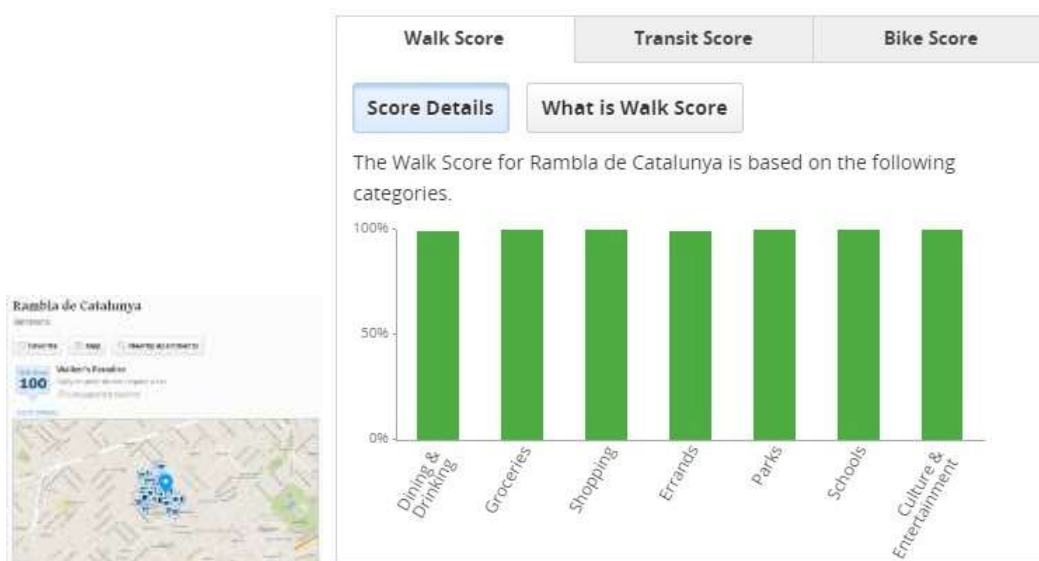


Figure 17 Walkability Scores for Ramblas de Catalonia based on land-use categories

<sup>3</sup> Walk Score is a blog created in Seattle, USA. Its mission is to promote walkable neighborhoods. Points are awarded based on the distance to amenities in each category. Amenities within a 5-minute walk (400m) are given maximum points. A decay function is used to give points to more distant amenities, with no points given after a 30-minute walk. Walk Score also measures pedestrian friendliness by analyzing intersection density and road metrics such as block length and intersection density. Data sources include Google, Education.com, Open Street Map, the U.S. census, local information, and places added by the Walk Score user community <https://www.walkscore.com/>

This location is a walker's paradise, with pedestrians given the right of way via a main passage in its center. Distances are short enough so that a person in the center can easily see into shop windows and recognize people on the sidewalk, while the shade and greenery are comfortable visual assurances. The street's scale distinguishes it from the surrounding streets, making it a destination for tourists from around the world.

Nearby parks include Sysoon Spain, Jardine de la Reina Victoria and Jardins de la Torre de les Aigues.

### **2.6.2 Avenue des Champs-Élysées, Paris, France**

Arguably, the Avenue des Champs-Élysées is the most famous street in the world, an iconic destination in Paris, filled with chic boutiques and quintessential Gallic cafes. Created in 1640, today it hosts the country's most significant civic and cultural events. Running in a straight 70-meter-wide line some 2 kilometers from the Place de la Concorde to Place de l'Étoile, it is anchored by the Arc de Triomphe. The views from the Arc are extraordinary, particularly so to the south-east, at the Avenues des Champs-Élysées. The Arc de Triomphe, however, is not immediately noticeable to pedestrians as trees block the view, and it only appears once they are close to it, figure 18.



Figure 18 The views from the Arc de Triomphe are extraordinary, particularly so to the south-east, at the Avenues des Champs-Elysees. The Arc de Triomphe, however, is not noticeable to pedestrians until they are close to it, as trees block the view, (Jacobs A. B., 1993)

The buildings lining the Champs-Élysées are the same height, at approximately 22.8 to 24 meters, and they are visually interesting, even if not all are outstanding. They feature abundant architectural details, with entryways, doors, windows and cornices offering a sense of strength, stability and importance. The street hosts a variety of international retailers willing to pay significant fees for a Champs-Élysées location. Yet the integration of car parking within the surrounding urban fabric is problematic. Separation of high-speed traffic movement from pedestrian traffic is obviously necessary. In 1990, Jacques Chirac, the mayor of Paris, began a new project in the avenue - to reclaim its urbanity by developing the following elements, figure 19:

- Enhance the perspective of the avenue by removing curbside parking and creating an underground car park for 850 cars.

- Create an attractive promenade alongside the shops and restaurants by widening the sidewalks.
- Upgrade and redistribute the street furniture, such as streetlamps and bus stops.
- Upgrade the shop frontages with new regulations, signs and terraces.
- Change the land-use zoning to encourage the return and development of functions such as cinemas and hotels in order to generate some of the activity for which the avenue was previously known.
- Plant a second row of trees.

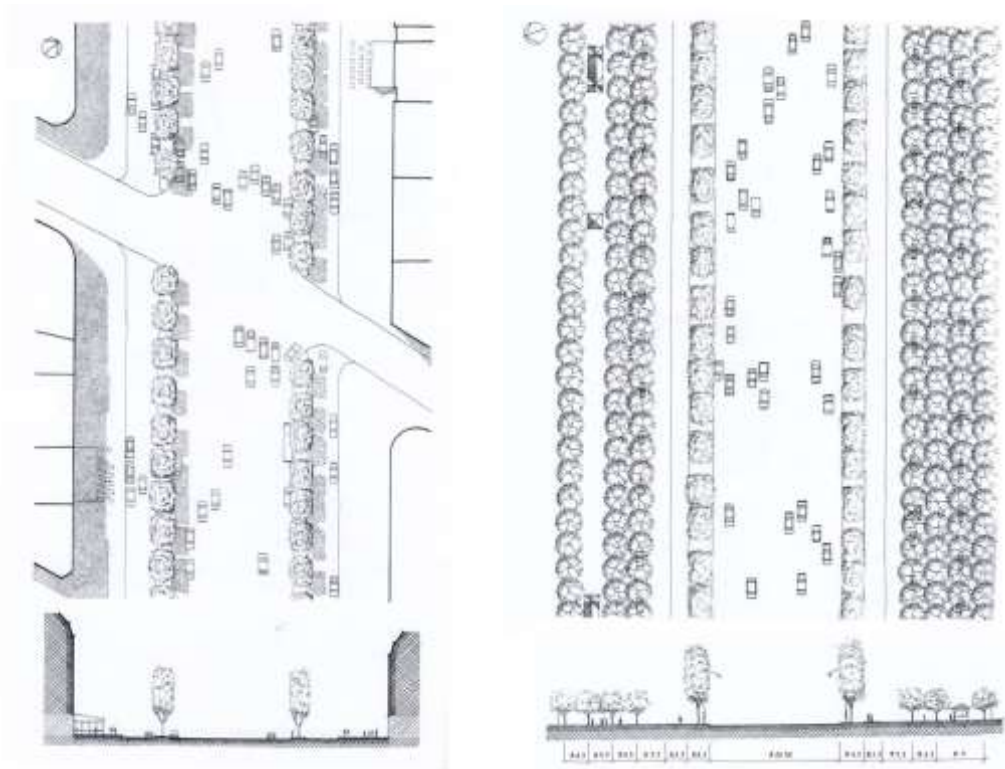


Figure 19 Avenue des Champs-Élysées' plan and section before and after 1990 (Jacobs A. B., 1993)

The success of this redevelopment is most evident in the Parisian Avenue, which has wide pedestrian pavements separated from the road with trees, and three metro stations. By employing an alternative plan for separating traffic, this Shared Space approach has created a common street for everyone. The retailers, however, seem difficult to convince, as they want access and parking as close to their entrances as possible, limiting the separation between cars, bicycles and pedestrians. As the design plans seem to be drawn up at regular intervals, (Jacobs A. B., 1993), users' reactions to each redevelopment are not well considered.

In spite of its disproportionate scale, Champs-Élysées still retains many features that make it a great street:

- Design and planning consistency evident in the trees and lighting that line the sidewalk.
- Comfortably wide sidewalks that provide plenty of space for relaxed foot traffic, vendors and cafes.
- An attractive buffer of trees between pedestrians and road traffic.
- Plenty of outdoor seating at restaurants and cafes.
- Plantings, traditional cast-iron kiosks, visually appealing sidewalk patterns and highly decorative streetlamps to enhance the outdoor seating experience.
- A sunny north side where pedestrians enjoy cafes, theaters and boutiques. There is less foot traffic on the south side, which is not as sunny and houses more banks and expensive restaurants.

- Activity does not decline after dark, when the well-lit street takes on the ambiance of an active and enjoyable nightlife.

The Champs-Élysées is one of the most expensive avenues on which to trade in the world. Many famous French and international brands have their flagship locations along the Champs-Élysées, including luxury shops and hotels, such as Cartier, the impressive five-stories at Louis Vuitton, and the Fouquet's Barrière hotel. On other hand, the continued success of the street has led to high rents, which has caused the loss of many small businesses and thus the street's original identity. Moreover, the street poses many challenges that should be considered in the long-term, such as the constant maintenance required to keep it safe and clean, and the safe crossing of pedestrians across the heavily trafficked roads.

The Champs-Élysées has a Walk Score of 90 out of 100 (Walk Score, 2012), a Walker's Paradise ensuring that daily errands do not require a car. It is a short walk from the Pontoise, Versailles Rive-Gauche, St-Quentin-en-Yvelines. Dourdan-la-Forêt and Pont de l'Alma metro stops. Nearby parks include Nouvelle France Garden, Jardin Flottant Niki De Saint Phalle and Esplanade des Invalides.

Figure 20.

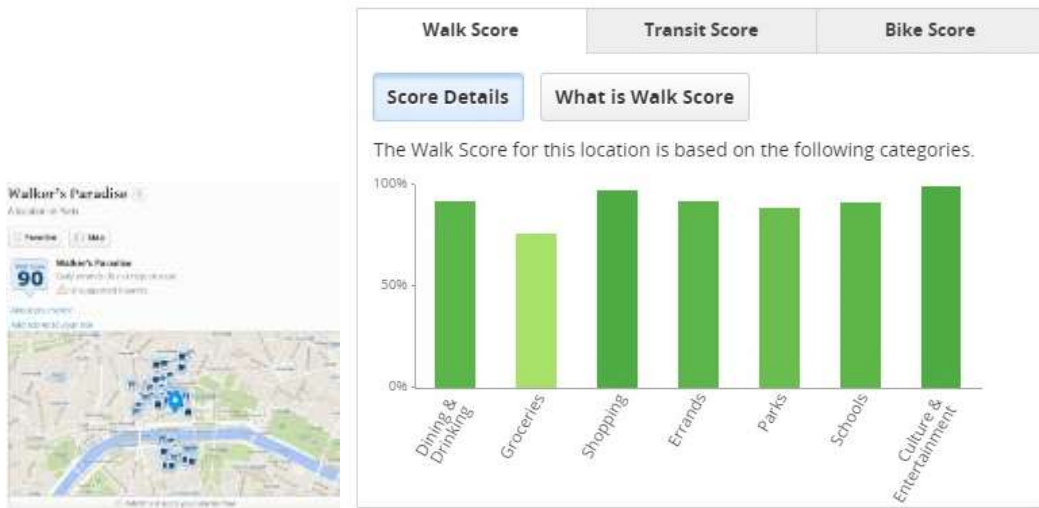


Figure 20 Walkability Score for the Champs-Élysées based on land-use categories (Walk Score, 2012)

### 2.6.3 Newbury Street, Boston, USA

Newbury Street has long been associated with upscale, boutique retail and a charming mix of cafes and stores. It is a street designed to delight, attracting locals and tourists with its greenery and urban views, galleries, salons, shops and spas. Additionally, the street has taken on an international flavor in recent years, hosting a slew of European retailers. Yet Newbury Street is primarily known for its smaller, boutique retail environment, as well as the consistency of its building types. The historic, 19<sup>th</sup> century, renovated brownstones and their visual appeal lend Newbury Street a unique sense of vibrancy and vitality, figure 21.



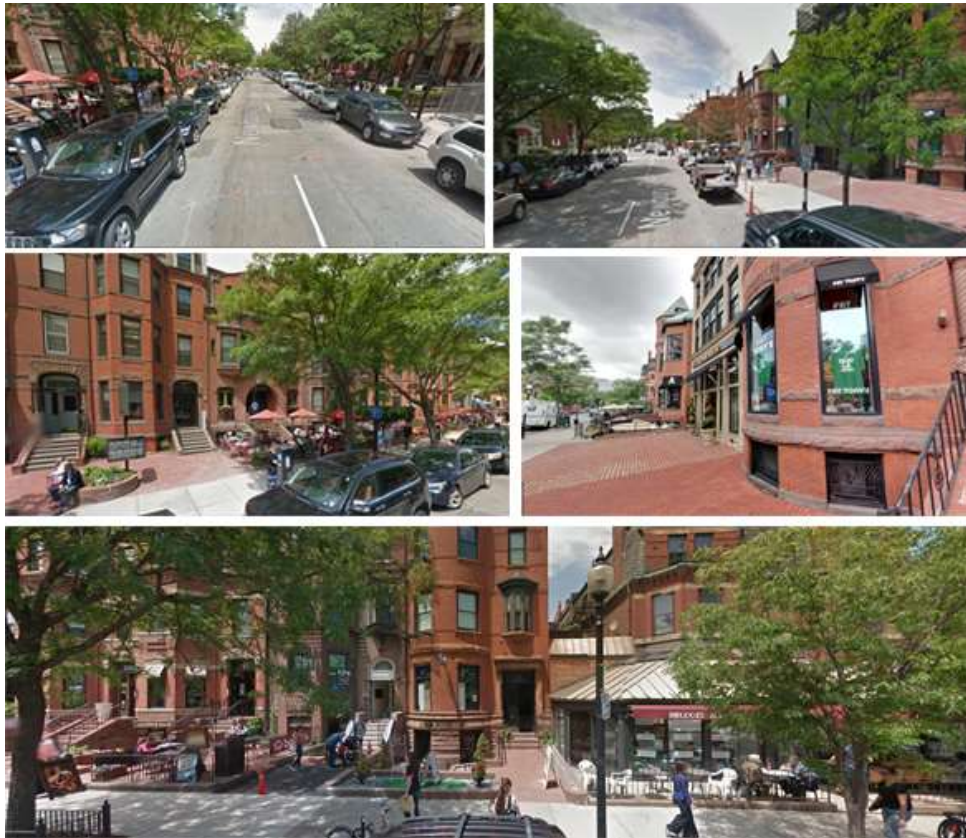


Figure 21 Newbury Street in Boston (Walk Score, 2012)

The 1,600-meter-long Newbury Street is located east of Massachusetts Avenue, with the most "high-end boutiques" located near the Boston Public Garden-end of the street, called Lower Newbury. Retail stores occupy three levels: basement, street level and above-ground. These stores add a stylish element to the renovated buildings, and sit alongside coffee shops, trendy cafes and an array of restaurants to suit many tastes. Yet due to the concentration of upscale stores at its lower end, Newbury Street is considered one of the most expensive streets in the world. Luxury goods stores include Ralph Lauren, Chanel, Armani, Burberry, Cartier, Bang and Olufsen, Valentino and Marc Jacobs. This location has a Walk Score of

90 out of 100 (Walk Score, 2012), and is a Walker's Paradise as daily errands do not require a car, figure 22

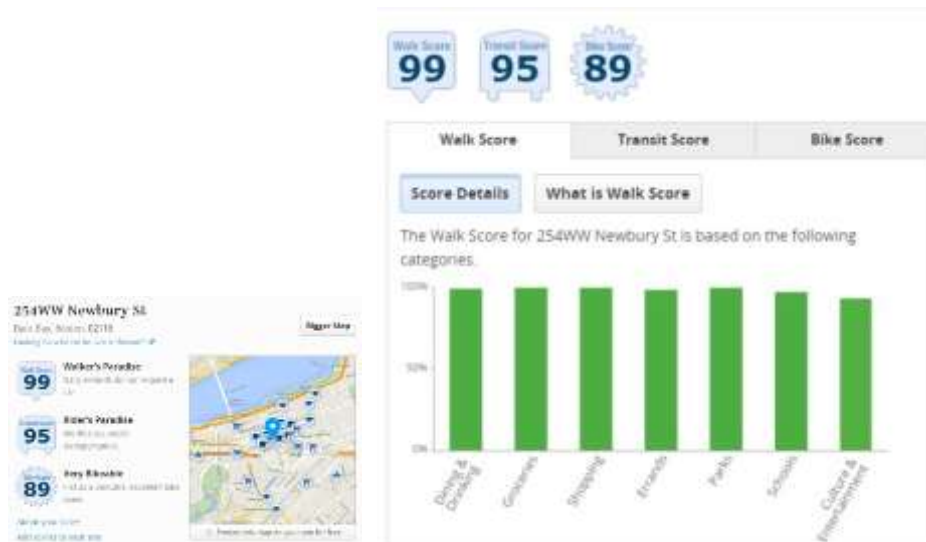


Figure 22 The Walkability Score for Newbury Street based on land-use categories (Walk Score, 2012)

## 2.7 Conclusion

This chapter has highlighted the development of the idea of street urbanity and its importance in a contemporary society where people are gravitating towards living in an urban environment. Additionally, the meaningfulness of urban vibrancy has been explored with relevant studies by scholars.

The literature review has created a base of outlines for the research to build upon:

- 1) “Scholars in various fields related to urban studies suggest thinking about the street as a social space rather than a channel for movement” (Mehta V. , 2006)
- 2) Streets are the lifeblood of urban life and thus cities.
- 3) The streets’ ‘vibrancy’, ‘liveliness’ and ‘vitality’ are associated with the appearance of buildings, their formal, urban morphology and spatial composition.

### **3. CHAPTER THREE: KEY CONCEPTS AND RESEARCH APPROACH AND METHODS**

#### ***3.1 Understanding the Vibrancy Concept and Promoting Vibrancy***

Understanding urban planning and the design elements that promote the vibrancy of commercial streets could assist planners and decision-makers to design and develop better street environments, as well as better city features catering to various users. In addition, the study of how to promote the vibrancy of commercial streets will revitalize street life that has been eroded by automobile-oriented streets. Briefly, identifying and promoting the elements that make comfortable, interesting, and meaningful streets will enhance the quality of public life.

An empirical examination of the urban vibrancy and perceptual reactions of people to the physical characteristics of commercial streets in Doha – in particular, the case study areas – is conducted in this research by postulating hypotheses and then creating the null hypotheses to enable testing. Accordingly, the elements to promote street vibrancy can be defined. These alternative and null hypotheses are formulated based on the theoretical basis of the research: integration within the urban morphology, compatibility with local needs and culture, social integration and well-designed and -planned streets. In other words, the null hypotheses of the research deny the correlation between these criteria, including their sub-criteria, such as retail diversity, location, accessibility, memory, identity, etcetera, on one hand, and their responsibility for making a

commercial street viable and vibrant on the other, challenging that these variables have the power to influence the commercial street's vibrancy. The chart in figure 23 illustrates the null hypotheses that are created to balance the prediction of the relationship between the variables versus the alternative.

From these hypotheses it is possible to generate measurable parameters to evaluate and promote vibrancy as the chart in figure 24. Based on these charts, the street vibrancy parameters relevant to the research case study can be defined.

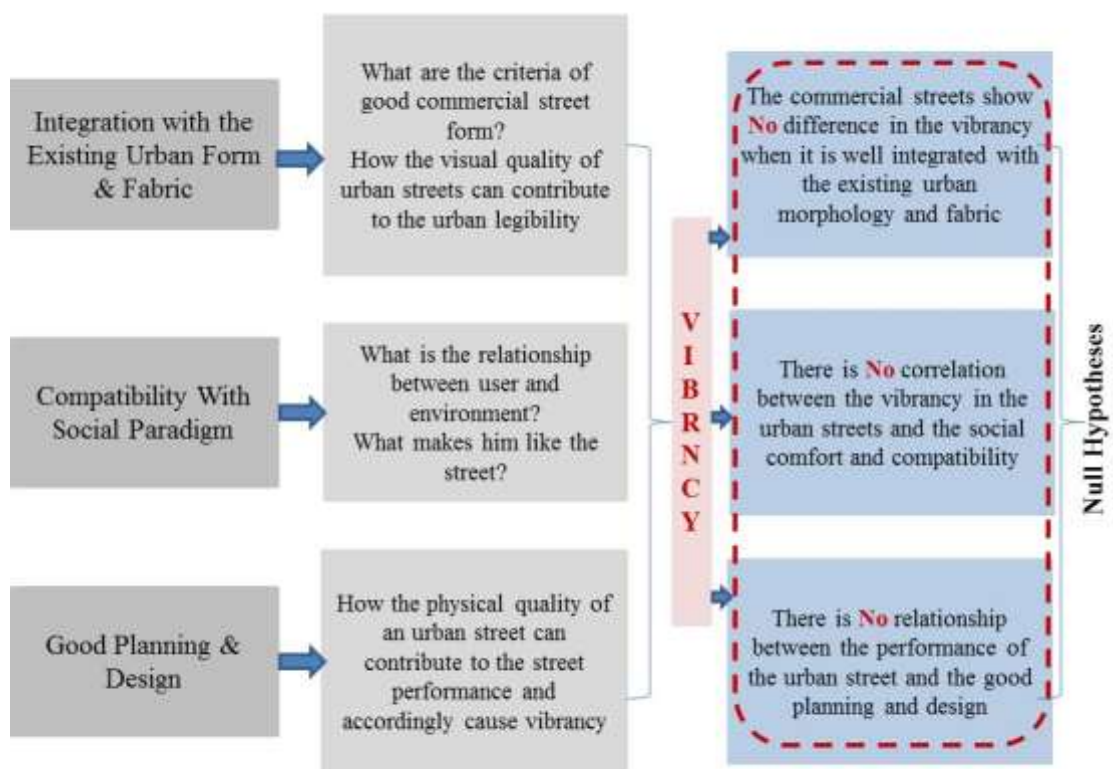


Figure 23 the Research Hypotheses, by the author<sup>4</sup>

<sup>4</sup> See the Appendix E

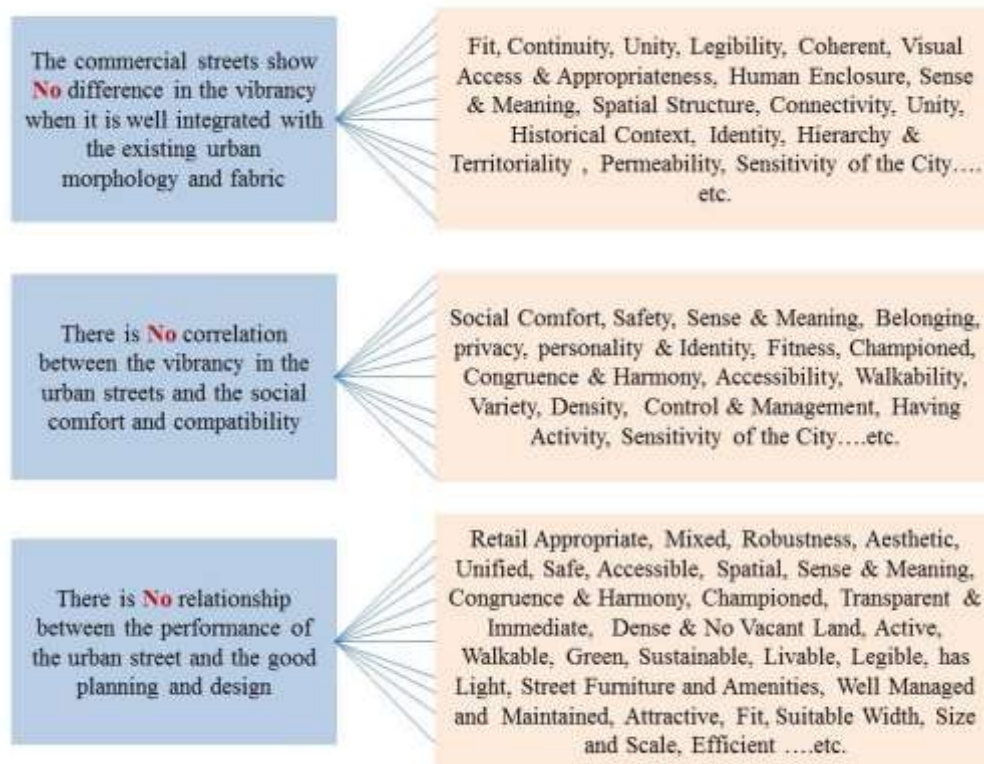


Figure 24 The Null Hypotheses and The Formulation of measurable Parameters, by the author

### **3.2 Approach To The Study Of Commercial Streets**

The public realm including the streets and public spaces is owned by the city municipality or city government, and it should be designed by the government to serve the public. Hence, understanding the public realm and the design of public spaces is required to shape the impacts and contributions that private development has on the public realm. Planners are usually called to design the streets, plazas, and public parks, but the private developers are responsible for the private plots. This creates a gap in the design and management of development, and is one of

the reasons that private investors build shopping malls, with an eye to also managing and controlling the retail mix. As a result, the streets and the public spaces have been abandoned and the urban areas have missed out on the integration between the public and private realm.

The most important aspect of a good city is its vibrant commercial streets. The success of a main commercial street will indicate how healthy and how lively a city is. It is the city's sidewalks, footpaths and pedestrian walkways that provide soul and life to a city, not the enclosed areas where pedestrians can interact and relax. The commercial streets of any city are the vital arteries that are an essential factor in making a city look beautiful and lively. The commercial street is "a true community space" (Lynch & Hack, 1984, p. 203). It is a place where people can shop, talk to and see others, wait for a bus, walk, enjoy sporting activities, sit at shop-fronts and cafés, where children can play, etcetera. (Gehl, 1970). Accordingly, in order to examine how successful, the commercial streets of Doha are, a framework of these activities patterns based on this approach and on the theoretical studies should be defined. In reference to the academic literature, the street is part of the public space of the city. Additional to the activities patterns that are influenced by the social and cultural values of the population, the street character can be also influenced by the physical aspect and the contextual environment, its functional typology, its morphological organization within the city, its structural pattern, the spatial scale and the economic factors of the country. All these aspects should be taken into consideration in the approach to studying commercial streets. Mehta cites these aspects in three main dimensions for building the character of the street: the physical factor, land use and the

community (Mehta V. , 2006). In his study, he focuses on the attitude of the users, their perceptions, their backgrounds, their participation and reactions that will create the activities pattern and form the social behavior. Accordingly, the design and the quality of the streets can be considered as a meta dimension and all these aspects together can formulate the character of the street. In the chart in the figure 25, (Mehta V. , 2013) clarifies his approach to the conceptual framework to study commercial streets.

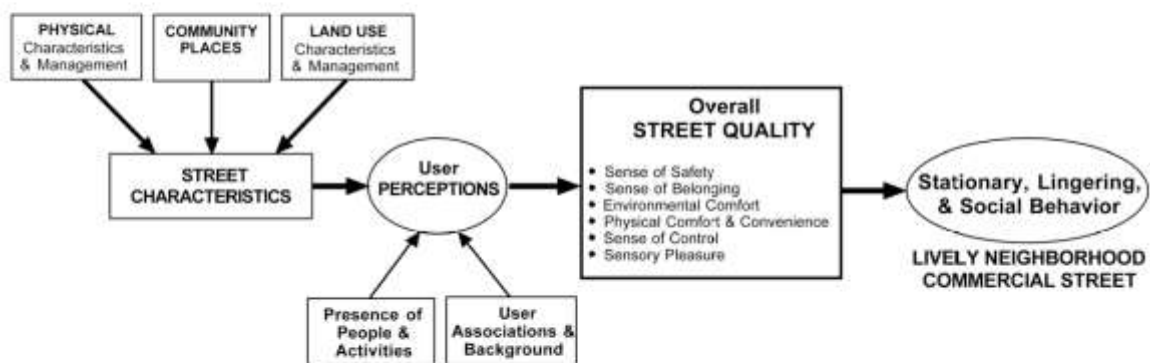


Figure 25 Conceptual framework for neighborhood commercial street liveliness, (Mehta V. , 2006).

However, (Salama & Wiedmann, 2013), in their case study, ‘Demystifying Doha’, and based on (Lynch, 1960) ‘s concept of the image-making of the city, focused on three dimensions; the contextual, the critical and the perceptual factors. Their aim was to demystify and retain an objective approach to Doha’s image by mapping concepts of actual project examples and measuring user reactions to



image qualities. “The contextual approach fosters an understanding of place by focusing on the regional, historical, and natural aspects of the city”. This approach adopts the principle of creating identity merged with the understanding of the culture, religion, and climate. The critical approach includes descriptions that discuss the practice of contemporary image-making and the growing culture of capitalization and privatization. The perceptual approach places emphasis on the relationship between the physical qualities of the urban environment and those who perceive and comprehend such qualities (Salama & Wiedmann, 2013), figure 26, clarifies their approach.

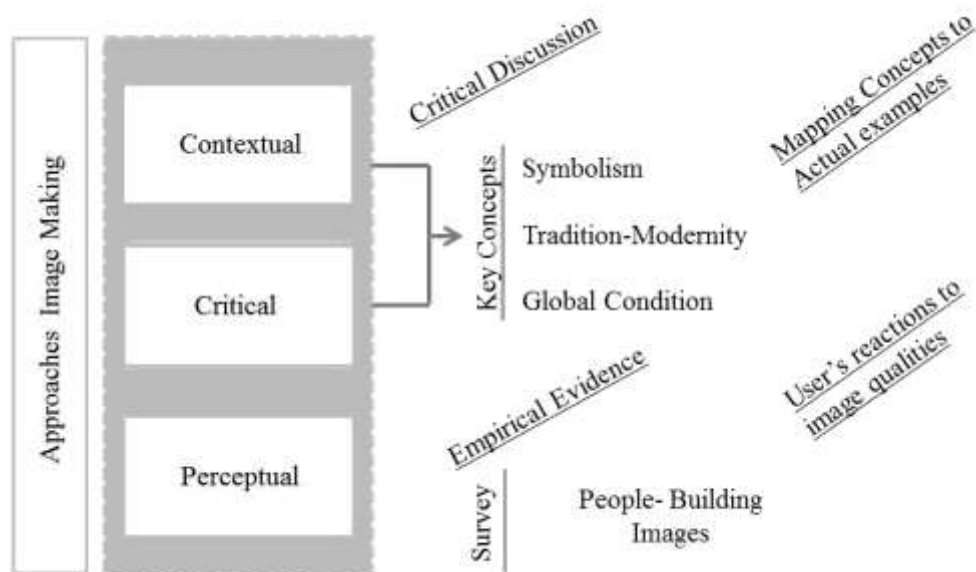


Figure 26 Integrated approach to investigating image-making in the city of Doha (Salama & Wiedmann, 2013, p. 136)

An integrated approach to both concepts, that of (Mehta V. , 2006) and (Salama & Wiedmann, 2013), is adopted to create a framework for investigating vibrancy in the research case studies. The chart in the figure 27, illustrates this approach.

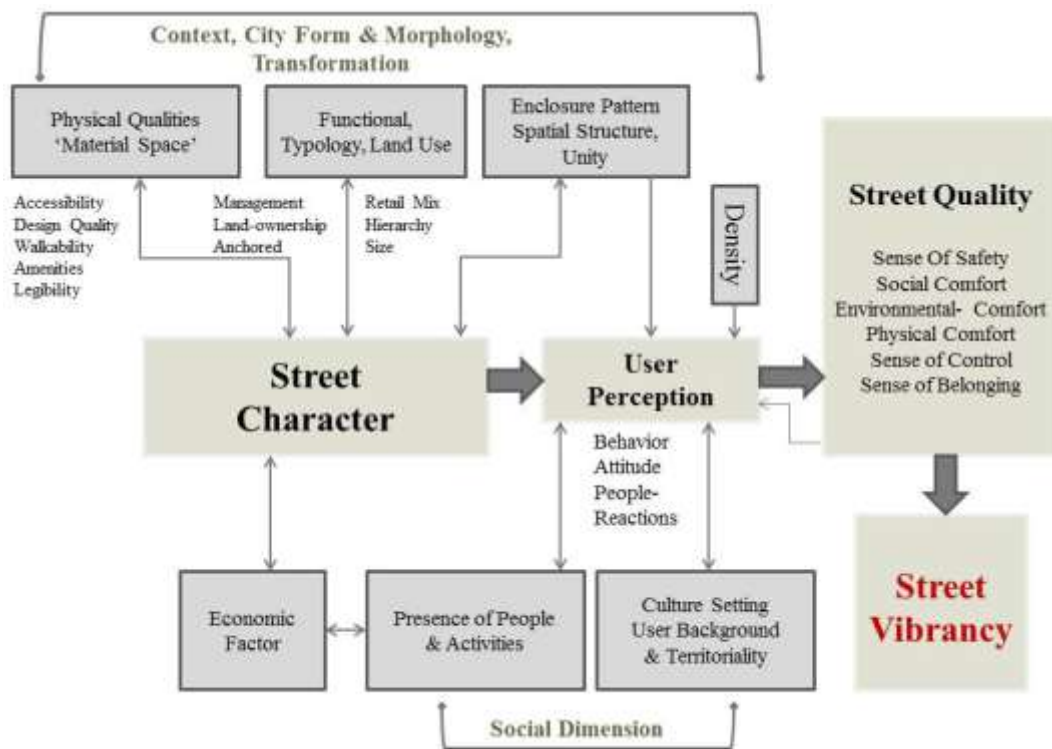


Figure 27 The research approach to investigate the commercial street vibrancy in the city of Doha, by the author

Accordingly, vibrancy parameters that are related to the local factors will only be selected as part of the study once, and used in the empirical study as a base for measuring the situation in Doha. Selecting these parameters is based on a deep and comprehensive study of the area, and initial physical observation of the area. The following table 2, briefly outlines the indicators adopted to be used for the case study areas:

Table 2 Illustrates the indicators

<b>Area of examination</b>	<b>Sub-area of examination</b>	<b>Indicator</b>
Street functionality and efficiency	Retail mix, safety, car-parking, transit-oriented development, street management and maintenance	Number of visitors, economic revenue, shop rent, vacant land
Street design and management	Land use, street quality, streetscape, walkway width, street maintenance, street furniture, lighting, greenery, shaded areas, street wall elements	Accessibility, walkability, number of visitors
Social reaction	Population, perception, density, safety, activities, community's needs, culture and identity, social comfort	Number of visitors, activities
Morphology, form, imageability and legibility, context theme, street unity	Street scale, enclosure, connectivity, building architecture, signage, street image, land use	Connectivity, permeability, transparency, aesthetics

### **3.3 Research Methodology**

It is not easy to interpret, from books or newspapers, the meaning of a place or the spirit of a culture. Nor is it easy to fully comprehend the deep and practical needs of people who have lived in a public space for years, and it is not acceptable to disregard this and make a decision about an urban area using concepts and theories implemented successfully in another area. This study uses prime resources collected from the case study areas, additional to the secondary resources. The secondary resources contain national and international comparisons alongside the academic literature analysis, and are combined with the prime data that is collected from the site and analyzed. The approach to collecting the data and analyzing the findings are both qualitative and quantitative so a mixed method has been used in this research. They will work concurrently to assure attaining the most accurate findings and results.

#### **3.3.1 Morphological Approach**

This research has two main objectives: it seeks to examine the vibrancy in the commercial streets of Doha through three case studies. In order to achieve this systematically, criteria and a scores index are explored by replying inductively to the research questions, and used as investigation tools. These tools are fundamental elements to build towards the second objective, which is to deductively identify the parameters that contribute to the vibrancy of the commercial streets and improve them. Overall, the aim is to issue a framework for future investigations for relevant studies and produce guidelines for more vibrant streets and improved strategies for the process of implementation.

After exploring the academic literature, a comparison study is suggested of three global and three local precedent projects, taking into account all urban spaces theories. Such examples are particularly useful where one needs to understand a specific problem or situation in great depth, and identify the information, opportunities and weaknesses of some assessments, and lessons can be learned from them. The morphological investigation has to be collected in parallel and analyzed with the secondary data gained from the academic literature and precedents, in order to formulate a decisive reply to the research problem, and to add a deeper dimension to all findings.

The perceptual approach in the sense of how people perceive and use the street can be collected from the fieldwork, through indirect and on-site observation, in-depth interviews with people, and questionnaires, with mixed approaches in data collection; both qualitative and quantitative. The table 3, outlines these approaches in a methodology framework.

Table 3 The research methodology framework, by the author

<b>Methodology</b>	<b>Framework and Data Collection</b>	<b>Approach</b>	<b>Intent</b>
Literature, precedent projects and studies as examples	Literature survey and analysis, comparison study and debate	Qualitative	Verify definitions, determine examining indicators, establish a research framework, identify lessons learned and demystify Doha
Context analysis	Mapping, walk-by observations and site synthesis, aerial photography synthesis and sections, interviews with professionals and stakeholders and 3D drawings analysis	Qualitative	Understanding the morphology, street hierarchy spatial structure, accessibility, integration
Case study, empirical research	Walk-by, direct and structured observations, questionnaire with users, and interviews with professionals and stakeholders	Mixed; Qualitative and Quantitative	Examining the vibrancy, social reaction and existing situation

### **3.3.2 Units of Study**

Data presented in this study is collected in three commercial streets in Doha at two levels; the typo-morphology of the street design in general at a macro-level, which includes the street unity, street pattern, land use, spatial structure, enclosure, etcetera. This data can be collected via drive-by, walk-by, photography mapping, videos and time-lapse photography with a Go-Pro camera, and analyzing the three-dimensional drawings. This type of investigation is an analytical description of the three streets. At the micro-level, data is collected on the street blocks or street segments<sup>5</sup>. This includes the street design on a smaller scale, its physical

<sup>5</sup> The sizes of the blocks as noticed within the three study areas are not equal in length. In relevant studies the block size is usually fixed and the segment is a smaller unit within the block that can be

and social attributes, which are structured and prepared after the initial site visit. This information is used additionally to the questionnaire, and cross-sections and sketches are drawn to identify the streets' components and elements that can have impact on user perceptions, such as green areas, street furniture, sidewalk width, the architectural themes of the shop-fronts, etcetera. This investigation is undertaken by establishing an attitude survey questionnaire<sup>6</sup>, in addition to the site observations of the researcher.

### **3.3.3 Data Collection**

#### **3.3.3.1 Observations**

The fieldwork strategy utilized a mixed approach and the visual perception technique in order to describe the physical and social attributes of the street pattern and the users' reactions, as well as to assess the vibrancy of the streetscape. The observation included both walk-by and drive-by observations, in addition to direct observation<sup>7</sup>. People counts, extensive field-notes and sketches have been conducted to map people's experiences on the sidewalk of the commercial streets, and to monitor the use of, or conflicts that emerged over the use of the spaces. Observation of people's activities and their social groups, their movement patterns and the interactions between them in relation to the physical environment is included, verifying the amenities of the street space, land use, vacant properties and the variety of functions within the street.

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selected by the researcher. However, this will be ignored in this case and the block and segment are to be considered same unit. The character of the block will supersede its size.

<sup>6</sup> See The Appendix03, for the forms of the surveys, form 01.

<sup>7</sup> Observation with using the structure and unstructured forms, see the appendix C, forms of physical observations

This observation aims to understand the behavioral mapping for the street users in relation to the spatial structure; it provides qualitative and quantitative data that allowed each site to be analyzed against the research questions:

- How do we assess the vibrancy of a commercial street? Why are some streets more vibrant than others?
- How vibrant are the selected case studies?
- How can the vibrancy of the studied streets be improved?
- What recommendations can be put forward for the designing of a new commercial street?

### **3.3.3.2 Questionnaire and Interviews**

As aspirations are difficult to identify via direct observation, the observational data is enhanced by semi-structured and unstructured questionnaires with street users.

Accordingly, questionnaires are an instrumental research tool in this study. Questionnaires are the most common tools used in surveys in the social sciences because each respondent is asked to respond to the same set of questions, providing an efficient manner of collecting responses from a large sample. It is recommended to question the user during his/her presence in the street, ensuring his/her reaction and instantaneous activity. Two questionnaires have been designed to gather the relevant information required to examine and create a framework for enhancing the vibrancy in the commercial streets of Doha. The first questionnaire is addressed to the visitors and workers who are encountered in the



street, and the second is addressed to the managers or landlords who own the shops or manage them.

The streets are divided into equal block segments between the researcher and volunteers to cover all areas. The results of these questionnaires should indicate the people's level of satisfaction and indicate their needs in these areas.

### **3.3.3.3 The Volunteers**

There are three volunteer groups in addition to the main researcher, who understand the project's objectives; they are assigned to help with the questionnaires by filling them out themselves, basing responses on their observations, impressions and replies from the people. The volunteers are carefully chosen – they are either undergraduate students who have lived in Doha for a long time, or graduates who have just started their first jobs in Doha; they are skilled and able to communicate with participants in two languages, Arabic and English, in order to facilitate filling out the questionnaires, and finally: they have willingly offered their assistance, table 4.

Table 4 The volunteers' groups

<b>The group</b>	<b>Name</b>	<b>Affiliation and specialty</b>
Volunteer 1	Derek Mussell	Graduated as City Planner from University of Calgary in the Faculty of Arts/Urban Studies in Canada Currently employed at Applus+ Velosi as a graduate environmental technician
Volunteer 2	Kynan Harb	Architecture undergraduate student at Ecole Nationale Supérieur d'Architecture de Nantes in France
Volunteer 3	Nebal Harb	Engineering undergraduate student at Université de Caen UFR Sciences in France

#### **3.3.3.4 Ethics and Protecting Participants**

The questions have been designed in a way that they are consistent with the ethical rules of the human subject. In order to achieve the required goals, some questions can be answered from the impressions made on the interviewer by the subject, to protect the participants. No pictures were to be taken of participants without their approval, and there was no need to record their names. To this end, an approval on the research methodology and questionnaire forms was collected from the Qatar University Institutional Review Board (QU-IRB)<sup>8</sup>. The board requested a written approval to be obtained from participants on a consent form which was formulated to protect the participant's opinion, with explanations in both languages (Arabic and English)<sup>9</sup>. The QU-IRB also requested a submission

<sup>8</sup> See Appendix D, for QU-IRB approvals

<sup>9</sup> See Appendix D, for the same.

for an undertaken letter to be signed by the researcher confirming that the raw materials would be kept in a safe place and accessed only for this research purpose.

#### **3.3.3.5 *In-Depth Interviews with Professionals***

In order to collect a data and professional feedback on the management of the shopping streets, perception of people, ideas about privatization, mega projects, etcetera, interviews with stakeholders, developers, planners and professionals have been conducted. The data collected from these interviews can be analyzed in terms of: ownership, queries about the objectives, usage and control of the project, its impact on the street, the overall vision for the project and the street, etcetera. The researcher contacted the proposed interviewees and obtained permission for an interview, in order to include it in the research and research findings. The interviewees were carefully selected to cover a range of general topics about the areas that are most important to the public. Here below in [table \[5\]](#) the interviewees and their affiliations:

Table 5 The interviewees and their affiliations

<b>Interviewee</b>	<b>Affiliation and Position</b>			<b>Professional Field</b>	<b>Date and Time</b>
Ibrahim M. Jaidah	Arab Engineering Bureau, CEO			Design, urban planning, construction	9 <sup>th</sup> December 2015, 3:00 pm
Riad Bleibel	UDC/Qatar Manager	Pearl, Project		Design, construction	28 <sup>th</sup> February 2016, 11:20 am
Ahmed Shaikha	CICO Consulting Office, CEO			Design, urban planning, construction	10 <sup>th</sup> February 2016, 4:00 pm
Walid Hussain	CICO, Head of Architectural Department			Design, construction	25 <sup>th</sup> February 2016, 8:00 pm
Corey Evrard	UDC/Qatar Manager	Pearl, Project		Construction	28 <sup>th</sup> February 2016, 10:00 am
Massimo Franzoso	KEO Consultants, Architect	International Senior Project		Design, construction	3 <sup>rd</sup> March 2016, 12:00 noon

The rationale for selecting these interviewees is to ensure a professional opinion from decision-makers that will assist in finding a practical solution to the research problem, with considering all aspects. Their concepts are analyzed in correlation with the questionnaires of the street users.

Table 6 The Interview Questions

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<b>The Interview Questions:</b>	
1	Considering the house is your first place and the work is your second place, what is your third place?
2	What do you think is better and which do you prefer: the controlled environment area such as the shopping mall or open public area?
3	What do you think about the street management and maintenance of Doha?
4	Do think it is better to privatize the public area or keep it shared, and managed by government? Why?
5	How do you think we can measure vibrancy in the public area?
6	Do you think vibrancy can have an impact on economic revenue?
7	As an Architect, do you think that there are architectural elements that can help to contribute to vibrancy?
8	What is the best way to make the public area vibrant? What is the best option available to the urban planner or the investor to maintain the efficiency of the public space/street at its highest level?
9	What is the relationship between the vibrancy of any public area and the area's primary mode of transportation?
10	Do you think we still can bring back the old viability of our commercial streets in the Middle East?
11	What do you think have been the top three keys to making the three streets the best? Provide any suggestions for improving these streets/ or any street in the future.
12	Describe your overall experience in this area/street (Al Mirqab Al Jadeed/Al Naser), Al Sadd and Al Mansoura).
13	What is the first thing comes to your mind when someone asks you to meet in these streets?

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Added to that, open discussions have been conducted with privileged persons in Qatar. The main topic was the background of the souqs in Doha and the three streets. Table 7 lists their names and affiliations.

Table 7 Interviewee names, for open discussion

<b>Interviewee</b>	<b>Affiliation and Position</b>	<b>Date and Time</b>
Mohamed Blushi	Qatar Museums Authority, Head of Archeology Department	12 <sup>th</sup> March 2016, 10:00 am
Mohamed Al-Khater	Retired Police man	20 <sup>th</sup> December 2016, 11:00am

### **3.3.3.6 Pilot Study**

A pilot study is conducted on a small sample of people who lived for some time in one of the case study streets. The purpose of the pilot study is to test the questionnaire and to ensure its validity and reliability, as well as improve it based on the replies and reactions of the participants. The sample has been selected based on two criteria: the first criterion is that all participants are or were residents for several years in one of the streets; the second is that all of them work in Doha as professionals.

The pilot study showed that the proposed questionnaire needed to be shorter and more practical, and it was adjusted accordingly<sup>10</sup>. However, due to the value of the collected data, the results have been analyzed and used.

### **3.3.3.7 Time for conducting the survey and observation period**

Site visits to collect the data were organized at several times per day to investigate employees' behavior when they arrived at work and when they left, and visitors' behavior was observed when they arrived as well as during the evening's late hours. Moreover, an additional investigation has been undertaken during the weekend. The survey was conducted during the mild weather months of January,

<sup>10</sup> See the appendix-03 form 03

February and March so as to obtain the maximum benefit of the viability of the streets, and to understand public perception of walking, shopping and using the commercial streets without the potentially negative impact of the harsh heat.

Observations were carried out between 8:00am and 10:00pm spread out on weekdays and weekends. Block-segments were surveyed randomly.

#### **3.3.3.8 Sample Size**

Since the data collection and analysis of this research is based on a mixed approach of both qualitative and quantitative methods, the assumptions of mixed sampling will be used. The sampling frame is defined by conducting research on the case study areas' population, which is not easy, as all three areas are mixed-use neighborhoods. The sample frame considers workers, visitors and residents, all of whom are users of the streets. The population estimate is based on the 2010 census (Qatar Statistics Authority, 2013), and an estimate has been calculated for the number of workers and visitors based on the researcher's initial visit to the three areas, as well as by questioning the anchor shops about their visitors per day. The sample frame is selected to be equal to 2.5% of the total users of the study area (Saundens, Lewis, & Thornhill, 2007). The sample for the questionnaires has been generated randomly during site visits, as the observations will provide the main body of information on human behavior in the study areas. All 'how, what, when, where' queries are dealt with by observation and secondary data, while the questionnaire, along with the interviews, will provide the information on the unknown 'why' only (Mehta V. , 2006).

### 3.3.3.9 The Social Evaluation Form

The behavior mapping data which was collected during the site observation is recorded in a semi-structured evaluation form, which is designed as part of the observation sheet containing the street plan with block indication, and elevation for each block.

Table 8 Semi-structured social evaluation form

Block no (...)	Street: ....	Date: ....	Duration: ...	Start at:	
No/people	Duration of stay	Age	Action	Time	Observation notes

In order to enable simpler observation, codes and symbols have been allocated to each aspect and social activity, along with proposed scores, as seen in the tables below:

Table 9 Duration of stay symbols and scores

Symbols (du)	Score	Duration of time
0	1	0 – 15 sec., just pass by
2.5	1	15 sec. – 1 min.
5	2	1 min.- 5 min.
10	3	5 min.- 10 min.
15	4	10 min. 15 min.



Duration of time: A longer stay indicates the individual observed is enjoying the space, there are more activities, and thus a long-lasting impression of the space remains with the individual user. Thus a higher score is allocated for those who remain in the space for a longer duration.

Table 10 Age and gender codes and scores.

<b>Symbols (ag)</b>	<b>Score</b>	<b>Description</b>
@	2	Adult Male, approximately 20 to 60 years
&	3	Adult Female, approximately 20 to 60 years
#	1	Older Adult Male, approximately over 60 years
>	2	Older Adult Female, approximately over 60 years
=	3	Teenager, approximately 13-19 years
<	4	Child, approximately less than 12 years

As the table 10 indicates, apparent age is recorded under four categories; children, teenagers, adults, and older adults. Gender is recorded for the adults. Social behavior in the built environment is differentiated based on gender and age differentials. The safer a public space is, the more it is used by women and children. Accordingly, higher scores are given for these categories.

Table 11 Activities symbols and scores

Symbols (act)	Score	Description of the activity
W	1	Walking
ST	2	Standing, texting, talking on the phone, smoking
WR	3	Walking into shop or restaurant
T	3	Talking to someone
J	3	Running/jogging, cycling, on the sidewalk, walking pets
SK	4	Skateboarding or rollerblading
PS	4	Pushing a stroller
SN	3	Selling newspapers
SE	2	Security person
SI	4	Sitting in coffee-shop
FB	5	Drinking or eating
SP	5	Shopping
V	2	Vending
C	3	Catering, carrying goods
R	4	Reading newspaper or book
B	2	Waiting for bus

Activities were recorded in detail on observation sheets that contained maps and elevations for the blocks, counting people, recording their activities and the duration of the time. The scores were calculated after collecting all data. The activities that required more people to interact or participate in were given high scores as their presence added value to the street, as illustrated in table 11.

### 3.3.3.10 Vibrancy Index

Based on the given scores and referring to (Montgomery, 1998) and (Mehta V. , 2006) regarding social behavior in the streets, a vibrancy index (VI) for each block was created as per the formula:

$$VI = \sum (\text{sum}) (\text{activities} \times \text{time duration} \times \text{age \& gender}) + P (\text{No. of people}) \times 0.5$$

Or:

$$VI = \sum (\text{act1} \times \text{du} \times \text{ag}) + p \times .5$$

The vibrancy index will be used to compare vibrancy between the blocks and the results analyzed in order to study the relationship between

### **3.3.3.11 The Physical Evaluation Forms**

In order to examine the correlation between street vibrancy and the physical environment, a structured physical evaluation form was prepared to record observer comments and notes. The observer recorded his feelings while using the street, providing subjective data that was synchronized with other researchers' observations and complementing users' questionnaire responses, attitudes and behavior.

The form is analyzed with the literature review, as well as with the three-dimensional drawings and aerial maps to understand the street morphology and enclosure.

The physical evaluation forms divide the street components into three levels: macro, semi-macro and micro level<sup>11</sup>

The macro level includes the street scale, block size, visual enclosures, building heights, the architectural themes, retail mix, community services and amenities, the interconnectivity and the vacant plots.

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<sup>11</sup> See the appendix C forms 02

The semi-macro level includes the walkability, imageability and legibility, accessibility, street maintenance and management, aesthetics and cleanliness.

The micro level includes the greenery and landscapes, shade, the arcade, crosswalk, shop-front designs and street furniture.

These notes have been recorded during repeated site visits, by filming the streets and/or taking still photos.

### **3.4 Conclusion**

- Livability, physical and social comfort, safety, walkability, vibrancy, spatial quality, land use, retail mix management, and street patterns are the parameters for street character that can determine a street's success.
- Null hypotheses are created to examine the streets' vibrancy and success. Based on this, parameters for contributing to vibrancy can be created.
- A mixed method for collecting the data and analyzing it has been used in the research in reply to the research questions and to provide solutions.
- Personal interviews and on-site surveys were required in order to obtain data from active street users. The qualitative data obtained, such as users' perceptions and attitudes towards the street, provided significantly in-depth information.

- As the surveys and questionnaires were obtained at the scale of a street block, a Liveliness Index was calculated for each street block, allowing for an analysis between respondent attitudes and their perceptions and vibrancy.

## **4. CHAPTER FOUR: INTRODUCTION TO CONTEXT AND CASE STUDY AREAS**

### ***4.1 Regional Historical Background***

As this study focuses on the city of Doha, it is additionally concerned with the Middle East as a whole. The region to which Qatar belongs is indeed home to some of the oldest civilizations humankind has known, and consequently to old cities and building traditions. Many nations and cultures have had more or less long-lasting and still-evident effects on the habits and lifestyles of the Middle East through time. Therefore, this study will discern the impact of the accumulation of these civilizations, particularly the most recent and influential in the region, which is that of the Islamic civilization. Through a review of the developments in the region in particular, and global evolution in general, the study indicates that this area is undergoing broad and rapid change. Urban development in the cities is accelerating, and they are more vulnerable to globalization. Accordingly, errors in development may occur, leading to a diminished, or even lost, link between the past and the future.

### ***4.2 The Formation and Organization of Traditional Arabic Islamic Cities***

As mentioned, human history in the area goes back more than 5000 years. Through time, the cities of the Middle East became complex and multidimensional cultural entities within which social organizations, standards, beliefs, values and cultural representations from different origins have expressed

themselves. Moreover, these cities can only be understood through the many different relationships they have developed with their natural and human environment, as well as with their non-physical environment. As a result of the Islamic civilization, these cities possess typical features such as an abundant amount of 'organic' networks, a large number of culs-de-sac, winding and narrow roads of human scale, and a lack of main streets. However, it is established that at the base of this irregularity and organic form lies a strict grid formation that appears in many cities such as Aleppo in Syria and Bisan in Palestine. The grid is Roman<sup>12</sup> (Petruccioli, Jayyusi, Holod, & Raymond, 2008), and further examples of Islamic cities planned and built in the region based on the grid include Anjar and Baghdad.

In Roman culture, the grid plan method of land measurement was called 'Centuriation'. However, the concept of a main and straight street was created by Hammurabi of the 18th century BC, the ruler of the Babylonian Empire, who made Babylon one of the greatest cities in antiquity. The streets of Babylon were wide and straight, intersecting at approximate right angles, and were paved with bricks and bitumen.

### ***4.3 Street Pattern in Islamic Cities***

Middle Eastern cities have been exposed to several civilizations, transformations that provided them strength for viability and sustainability. Urban history can tell a big part of their stories. One of their main features was that they were bound

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<sup>12</sup> The Roman grid which appeared in the road planning was called 'decumanus maximus' and 'cardo maximus'

from all sides, with only one unique, main connection to the outside world through a controlled street – the legacy of several societies that were once established in the region. This street, which was called 'Al Darb', led to the city center where the main mosque was located, "then branching into the interior in usually irregular streets and ending, finally, in culs-de-sac" (Petruccioli, Jayyusi, Holod, & Raymond, 2008, p. 62).

In their studies, Petruccioli et al specified the traditional Middle Eastern city as being divided to quarters, with each quarter directly connected to the center by a branched street, but they were not linked outside of this. The phenomenon of irregularity and the existence of the cul-de-sac appear within these quarters, but these were not the main characteristics of the city, as the important streets were planned and organized. The cul-de-sac was the best way to secure the area, and no stranger could dare walk within the quarter without being accompanied by a local resident.

Today there is a debate surrounding how much safety for the pedestrian the 'cul-de-sac' concept provides. Traditional cities enabled social interaction and social integration into their urban fabric, which provided residents with a sense of belonging and safety. Unfortunately, these considerations are missing in today's cities. Nevertheless, by analyzing the traditional Middle East city, one understands the hierarchy of street patterns, which was based on the territoriality concept and the spatial transition between the public (the main street), the semi-public (the souq or the court of the mosque), the semi-private (the cul-de-sac), and the private (the house). This hierarchy brought safety, vibrancy, connectivity, and positive



social interaction, urban criteria that indicate the effectiveness of urban life in successful cities.

Studies of Islamic cities show that city management entities controlled city planning and building regulations, their rules established based on residents' lifestyles, cultures, values and beliefs. Yet, several transformational periods led to anarchy in the process of land accumulation and new features and standards, and to a general lack of governance.

#### **4.4 Doha's Historical and Geographical Background**

Doha is the capital of the State of Qatar, which is situated on a peninsula surrounded by the Arabian Gulf and bordering Saudi Arabia to the south. The city of Doha was originally a small fishing village and a pearl diving port. A primarily adobe settlement, the village followed the natural coastline with a traditionally built form responding to the desert climate: a fine urban grain, narrow streets and compact buildings surrounded private enclosed courtyards, all acting to moderate the heat. The village was connected to other regional hubs via traditional land and naval trading routes. This traditional pattern of development continued until the discovery of natural gas and oil in the 1940s, when Qatar became a wealthy country and embarked on an era of rapid construction. This has led to a large expansion in the number of high-rise buildings and other modern edifices, and consequently, Doha's vernacular architecture and traditional urban fabric has been transformed.

In particular, the highway-led planning of the 1970s prompted rapid growth based on mobility provided by the private car, while new industries, building typologies, and climate control technology combined to create a coarser urban grain that superseded the traditional form. Increased wealth and mobility and the availability of land further fueled the ‘urban sprawl’. The result was a disjointed urban fabric containing numerous satellite ‘cities’ without the critical mass to become sustainable places in their own right, with no definable city center, the main streets losing their efficiency and becoming wider to accommodate vehicles, and a corresponding lack of identity for greater Doha and inner Doha.

#### ***4.5 Qatar Vision and Master-Plan***

Within its 11,586 km<sup>2</sup>, Qatar holds the world’s third-largest gas reserves and largest single non-associated gas field (Qatar Statistics Authority, 2013). With Qatar currently witnessing the instant urbanization trend, the government is entirely focused on keeping pace with the population explosion that the country’s capital, Doha, is speeding towards. The latest figures (31 January, 2016)<sup>13</sup> released by the Qatar Statistics Authority reveal that Qatar’s population stands at 2,423,000 persons, with a 0.1% increment from December 2015 and 8.9% increment from January 2015, figures that weren't expected to be reached in even several years, according to the Ministry of Development Planning and Statistics’ estimates. As global focus on Qatar’s prosperity grows, Doha is developing quickly, capturing the excitement of a prosperous nation that is full of optimism

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<sup>13</sup> The Ministry of Development Planning and Statistics provides monthly estimates and updates on their website [www.mdps.gov.qa](http://www.mdps.gov.qa), also available through SMS.

and great potential. Meanwhile, exurban growth appears to be rapidly approaching its physical limits. Planners are aware of the negative outcomes of urban expansion: sprawl, traffic congestion and environmental degradation. Today the municipalities and the urban planners of Qatar embrace a marvelous opportunity for urban growth and renewal. They are equipped with a team that understands the needs of locals and are able to simulate investment suitable for communities by creating exciting and unique places in which people can live (Jaidah, 2015). Consequently, the interests of developers, planners, architects, municipalities and the public, should be aligned more strongly now than ever before, as they are designing and building mega projects and mixed-use districts with features found in classic examples around the world, for example, The Pearl-Qatar, Lusail City and Msheireb Downtown. The private investors that are involved in these transformations should work in parallel with the government sector.

Moreover, planners and decision-makers responsible for Doha's reconstruction projects should look elsewhere in the world for successful examples of norms and standards in city planning, ultimately allowing Doha to become a city of international stature. Accordingly, a vision and a strategy for the country have been developed. The Qatar National Vision 2030 (GSDP, 2008), implemented by the General Secretariat for Development Planning, established four pillars for development and focus, which are interpreted by the Qatar National Master Plan 2030 into seven spatial and physical planning principles, namely quality of life for all, sustainability, environmental values, connectivity of people, connectivity of places, economic growth, and diversification. Indeed, achieving sustainability and connectivity is one of the main goals of this initiative, as it seeks to improve

quality of life in the country. One of the main messages of the vision is to encourage outdoor public life and make the streets an important urban spatial aspect of everyday life. Despite the harsh climate, people can indeed comfortably enjoy outdoor activities during at least eight months of the year (Farhat Harb, 2015).

#### ***4.6 Doha City Morphology***

The architecture and urban aspect of Doha that provides its identity and morphology cannot be addressed without examining its dynamic component and analyzing the interaction between all these components during the transformation. To determine the integrated formula that should be followed to reach the final spatial layout of Doha, the phases of the city's growth must be studied, as well as the city's morphological phases. For instance, the historical evolution of the urban morphology of Doha should be considered when shaping the spatial conditions of the city and the street network. "In order to examine a city and its particular contemporary condition, urban developments should be seen as a product of various historical contexts" (Salama & Wiedmann, 2013, p. 3)

Despite Doha being a newly developed city with rapid growth, figure 28, it has still passed through four main phases of morphological transformation. The townscape of the city and its spatial layout are unable to reach their final shape until the city components complete their growth (Al Ashaa'b, 1982). These components are the town plan including street network, the land pattern and the

architectural theme, and the urban fabric which includes the urban land use pattern.

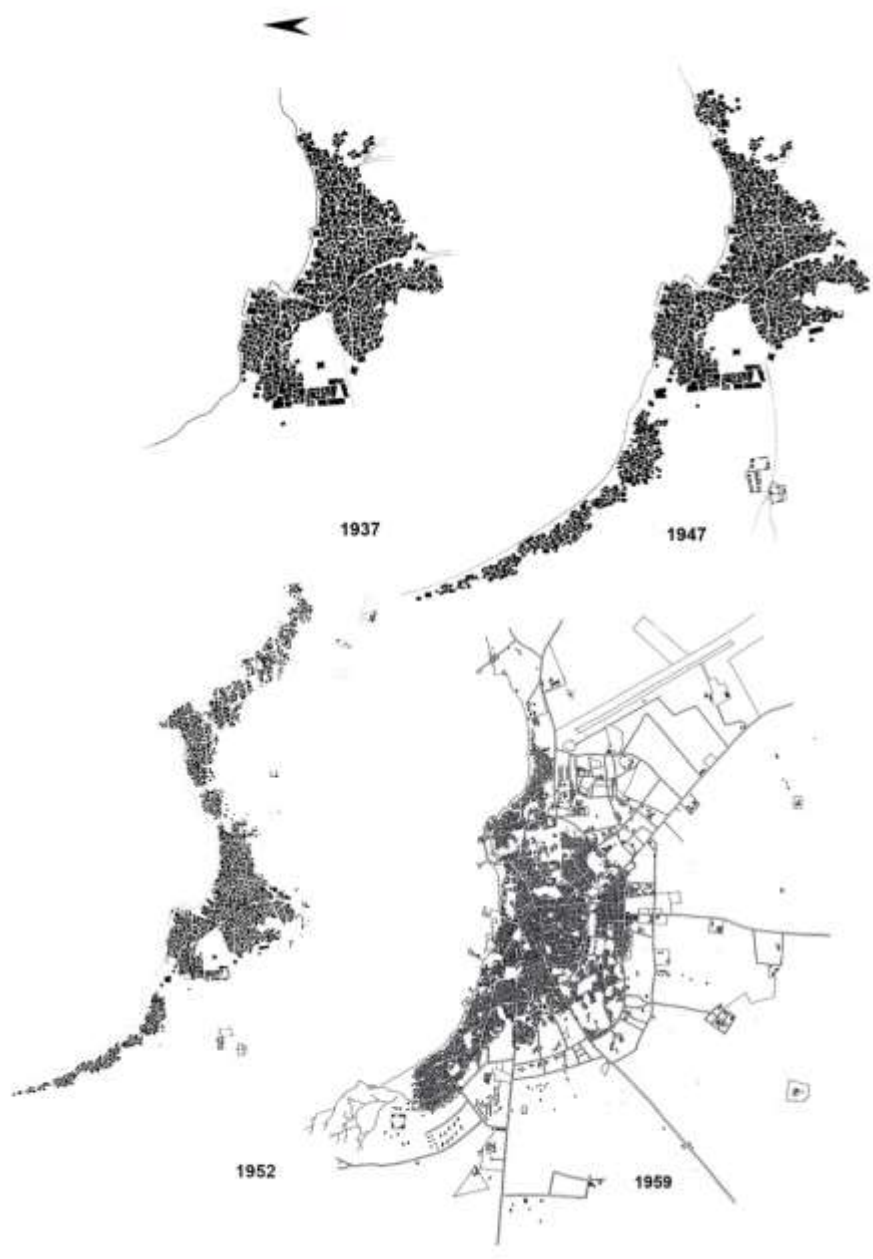


Figure 28 Aerial views sketches for Doha between 1937 and 1959

During its transformation, most of Doha areas were built based on an unsustainable and disorienting model of development - which is a self-evident result of the transformation. Ever-spreading metropolitan areas are inefficient and environmentally unsound. They lack the identity, rhythm, and structure that make them easily navigable and coherent within a larger regional context. However, an initial synthesis between the concerned<sup>14</sup> street network and the first Doha master plan, which was devised by UK-based Llewellyn-Davies, 1970-1999, reveals that the three streets are integrated to the master plan, they play a part in the wider hierarchy of the city and they have their own established distinctive ‘character’.



Figure 29 Llewellyn-Davis, Weeks, Forestier-Walker & Bor master-plan for Doha, in 1970

Doha has indeed always had to find a compromise between its aspiration to modernity and its attachment with its past, a process that cannot be accomplished without a substantial base. However, given Doha’s rapid urban transformation,

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<sup>14</sup> The three streets, the case study areas of this research.

integration with its past was not always guaranteed, which means that the transformation is an unstable one that hasn't always balanced modernity with the city's identity and singularity (which mostly lies in the country's culture and traditions). "Today's image of global cities is mainly formed by the dominant corporate culture which only encompasses parts of a city, not its composite whole." (Salama & Wiedmann, 2013, p. 06), leading us to understand that, for example, Doha's main recent developments, such as The Pearl-Qatar, Lusail City, Katara, and Msheireb, which is like a gated shell within the existing city center, are without integration with the existing cultural diversity. This has led to the creation of a new social structure that is not compatible with the existing urban form. Additionally, the outsourcing of industrial production for economic reasons has resulted in an increase in the level of connectivity via modern technology such as fiber optic routes. Thus, the global urban pattern and dynamics have been altered without a parallel internal evolution. Accordingly, the city has become an important node in the expansion of international trade, while internal development is still under progression (Salama & Wiedmann, 2013). So how do we achieve a more sustainably efficient and balanced spatial layout? What are the possibilities for a more legible and viable urban future within what we've already built?

The creation of truly legible and sustainable cities requires transforming the areas in Doha into more livable places without abandoning downtown. The regional approach connects recent innovation with ideas and lessons from the past. For example, the local open space within the neighborhood was present in Doha before the 1950s, and old Arab towns endorsed this value in their expansion too, until planners began to implement new concepts of zoning without considering the

local context. As a result, in general, some outlying centers of commerce are rapidly transforming into vibrant, multifunctional districts, without development of the entire area. This leads to the weakening of the surrounding areas. This is obvious in Al-Asmakh and Al-Najada, areas that are adjacent to Souq Waqif and the Msheireb Downtown project.

Hence, an analysis of Doha's planned commercial streets projects is conducted at the end of this chapter as a local example to comprehend the criteria to create vibrant public areas suitable for Doha.

#### **4.7 Background of the Commercial Streets and Old Souqs in the Traditional Pattern of Doha**

In the past the traditional physical environment was not based on the aesthetics of buildings and streets. The city of the past was built within the scope of simple principles that were necessary to understand the gradual transformation of the urban pattern of old Islamic/traditional cities. The tradition of Islam in relation to the physical environment grew to protect the environment and to maintain the privacy of the people and their accessibility to public spaces. Buildings were not generally designed to be individual structures, but as part of a group of edifices, each giving enclosure to a street or space. Building frontages collectively affirmed the character of the street, square, lane or courtyard of their address. The spatial arrangements ran parallel to the social pattern; houses in one neighborhood or in one zone belonged to one family, and as the family grew, the houses were extended. Islam as a tradition aimed to preserve certain values that guide everyday



life. Thus, the road patterns modeled the social structure of the community, neither an engineered result nor a search for some physical feature, but purely for social relation. (Jaidah & Bourennane, *The History of Qatar Architecture 1800-1950*, 2009)

Many studies provide a brief analysis on the spontaneous territorial economic planning in traditional Arabic cities. “The cities of the Middle East are specifically marked out by their Souq, which is the main commercial quarter.... The Souq is indeed, the characteristic sign and most striking distinctive feature of cities of Islamic culture” (Remond, 2008, p. 731). Most of the great Mediterranean Arab cities were also the seats of intensive international trade, giving them their importance and ensuring their prosperity. They were normally sited at strategic points on the great axes of international trade. The souq’s diversity of function, with goods destined for local and international markets, and transit activity at all levels, explain their prime importance in these cities. It is easy to understand how this pre-eminence would be visibly reflected in the very spatial structure of these cities.

The built environment of the old city of Doha – as with all traditional Arab towns – is characterized by narrow streets, where the walls of traditional houses created shadows, and the concentration of neighborhoods in close proximity to key facilities, are a testament to the pedestrian realm and culture of the city’s former life. Despite some Arab towns’ urban fabric being based on the grid, Doha did not know the straight street until the discovery of oil in Qatar and the city’s transformation based on American-style urbanism. As the city was re-planned, dependence on motorized vehicles increased.

Two decades ago, large cities in the Arabian Gulf region adopted urban consolidation policies to make urban areas more compact. As economies grew, public transport networks expanded and businesses began branching out. Following the lead of cities across the region and the globe, Doha is now employing livable and sustainable streets as a central strategy to nurture a healthy population and to support local economies. Although Qatar is still lagging behind in terms of connection to urban consolidation, the new commercial projects that have been recently completed or are presently underway are seeking to tackle the current overcrowding of the heart of the country. In following pages, an analysis of three local examples of new planned or revitalized developments in Doha researches this challenge.

#### **4.7.1 Souq Waqif**

An example of the traditional model for a successful 'street backdrop ' can be found at Souq Waqif but this is rare in modern Doha. Buildings are adjacent to each other, directly lining the street figure 30.



Figure 30 Souq Waqif 1955 and 1958

Each one is different from its neighbors in terms of proportion, height and detail, but the differences are precise. They form a coherent but informal group. They are all constructed of the same materials, with slight color variations, but together they are pleasingly diverse. This ‘street wall’ or ‘street enclosure’ model is found in many successful streetscapes around the world and is a primary reference for the revitalization and building of new commercial streets in Doha, giving public space priority over the individuality of particular buildings. See figure 31.



Figure 31 Souq Waqif 1968. Source Qatar Museum Authority Collection

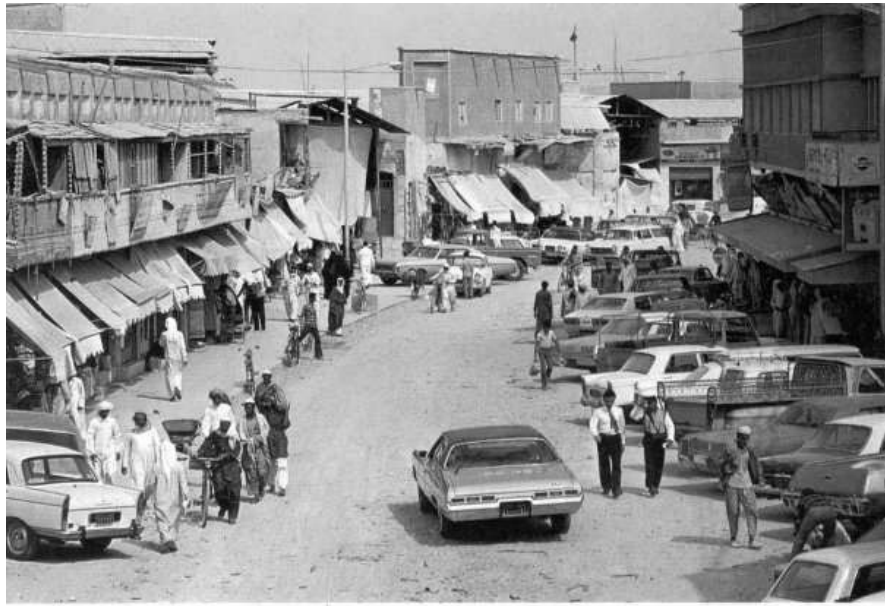


Figure 32 Souq Waqif in 1970

The origins of the Souq Waqif date from the time when Doha was a village and its inhabitants gathered on the banks of the sea to buy and sell goods, [figure \[32\]](#). The revitalization project was a unique experiment that was conducted on one of the most important heritage sites in Doha. Based on a thorough study of the history of the market and its buildings, it aimed to erase recent alterations and repair any damage perpetrated on the buildings. The project sought to reinvigorate Souq Waqif's streets with a sense of authenticity by restoring the memory of the place (Farhat Harb, 2016). This included removing all modern buildings, replacing metal roofs with traditional roofs made of *danchal* wood and bamboo, clay and straw, and reinstating traditional methods of insulation against intense heat. At the same time, modernity was incorporated through 21<sup>st</sup> century lighting systems that illuminate the streets. As a result, unlike the 'cultural theme parks' common to the

region, Souq Waqif is instead a vibrant, open and public space that is used and enjoyed by residents, tourists and merchants. (Private Engineering Office, 2010).

A pedestrian street with terraced cafes and restaurants was added to the souq, encouraging tourists and residents to visit and enjoy the space.

Feeling safe and secure in Souq Waqif is based on the space's vibrancy. However, people do sometimes get lost upon entering the souq, as the shops are similar and signage is not appropriately designed, but visitors are easily able to ask and obtain directions. There is no relation between feeling safe inside the souq and its legibility. This may be the only case not compatible with Lynch's 1960 theory that legible signs and maps, visible landmarks for orientation, and defined, differentiated landscapes are factors that increase peoples' sense of safety.



Figure 33 Social interaction, activities, and sense of safety at Souq Waqif, photos by the author

#### **4.7.2 City Central at the Pearl Qatar**

The Pearl-Qatar is a new mega development; it is an artificial island spanning nearly four million square meters. It is a mixed-use residential, retail and hospitality development. Once fully completed, The Pearl will create over 32 kilometers of new coastline for use as a residential estate with an expected 18,831 dwellings and 45,000 residents by 2018<sup>15</sup>. “The driving concept of The Pearl-Qatar development is to offer an exclusive lifestyle of luxury and fine living...A high-end shopping experience that offers fashion boutiques...and trendy cafes and restaurants” (Salama & Wiedmann, 2013, p. 130). The Pearl was created as an individual urban district for key segments of society. The same concept was created by the government two decades ago, when the Dafna area was reclaimed, with the government preparing a full master plan and distributing plots to its senior staff on which to build their own houses. This procedure is the result of mutually beneficial alliances between government agencies and business interests.



Figure 34 City Central at Pearl Qatar

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<sup>15</sup> Developed by United Development Company and planned by architecture and design firm Callison, the island is located 350 meters offshore of Doha's West Bay Lagoon area.

The Pearl-Qatar is a model for successful urban development, although it is not integrated within the existing fabric. The architectural theme has been created by collecting distinctive styles from other cities, and incorporating them into a cityscape that defines a new theme not inspired by traditional architecture. However, people like the idea and citizens in particular are proud to have such a development in their country, Figure 34.

The development consists of ten individual districts, each with its own character, such as City Central which is The Pearl-Qatar's vibrant center. In the initial master plan, the designer's concept was to encourage people to not use their private cars, and 'pedestrianize' the internal streets. For instance, City Central was to not allow private cars to use the internal roads. However, visitors didn't like the idea, and the development's management acquiesced to allow them to use their private vehicles on internal roads. Nevertheless, The Pearl-Qatar remains vibrant and full of people.

The recent introduction of new retail outlets and F&B brands has only further entrenched The Pearl-Qatar as the preferred destination for many local families and business and leisure tourists. Indeed, an increase in traffic was noted immediately following the opening of new restaurants such as Nando's, T.G.I Friday's and Sammach.

Medina (City) Central boasts 160 retail stores, 40 restaurants and coffee shops, a world-class cinema complex and a number of leisure and entertainment facilities and convenience stores. This vibrant Pearl community also features a public



transport interchange, all catering to the residing community and visiting families and tourists.

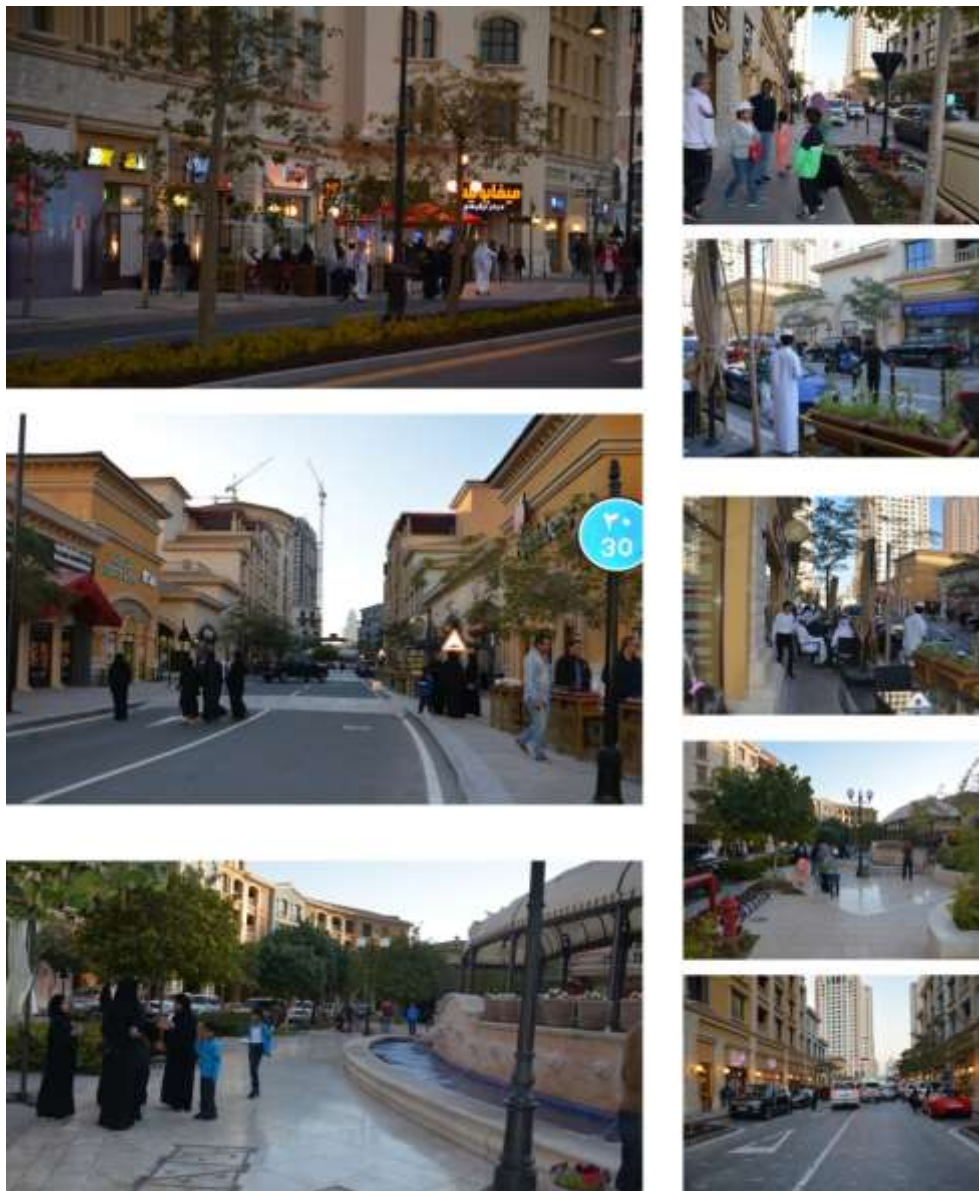


Figure 35 City Central at Pearl Qatar, photos by the author

### 4.7.3 Al-Kahraba Street at Msheireb, Doha Land

“At least one night in Ramadan, we must spend it in Kahrabaa Street, the street of light, where the most important shops and terraced restaurants are. This street represented capitalism in the emerging country with that time’s slogan: ‘Modern Home’ – 51 East – now one of the largest stores of the street and a destination for the wealthy and businessmen, with their clothing allowances and modern expensive shoes and Rolex watches...I still remember the restaurant, Beirut, and the grocery store, Jaffa...We were happy to go to meet our friends at that street...I have many memories of that street and I hope they can bring it back as before. It was the best vibrant street in Doha. Kahrabaa Street represented the culture of the Qatari city that was not globalized yet ...” (Al Khater, 2015)



Figure 36 Kahraba Street in 1970

Al-Kahrabaa Street, once known as the ‘Champs-Élysées of Doha’, was the city’s most famous shopping street, where the power was supplied by establishing the first plant room in Doha, and its first street light. People used to visit this street on a weekly basis for social interaction, meals and shopping. Figure 37.



Figure 37 Kahrabaa Street in 2002, before the reconstruction, photos by the author

Now, the street is part of the new development, Msheireb Downtown, and a new design has to be implemented with respect to the original street pattern and character.

Al-Kahrabaa Street, in the new design, is a shopping street as it has always been, and its pavements are shaded with overhangs and colonnades from end to end.

Figure 39.



Figure 38 Kahrabaa Street is part of Msheireb Downtown development

Northern Part: The character of the street changes distinctly along its length. The scale and grain of buildings along Al-Kahrabaa Street increase to the south. The gradient and curve of the street are distinctive and set a pattern of informality that distinguishes it from the straight streets of the master plan. Buildings generally abut each other except at main streets, with archways leading to covered passageways, intimate lanes and courtyards within the urban fabric.

Southern Part: Irregularity and informality, stemming from the curved line of Al-Kahrabaa Street, characterize both the north and south ends. In terms of scale and grain however, buildings in the southern section are larger and broader.

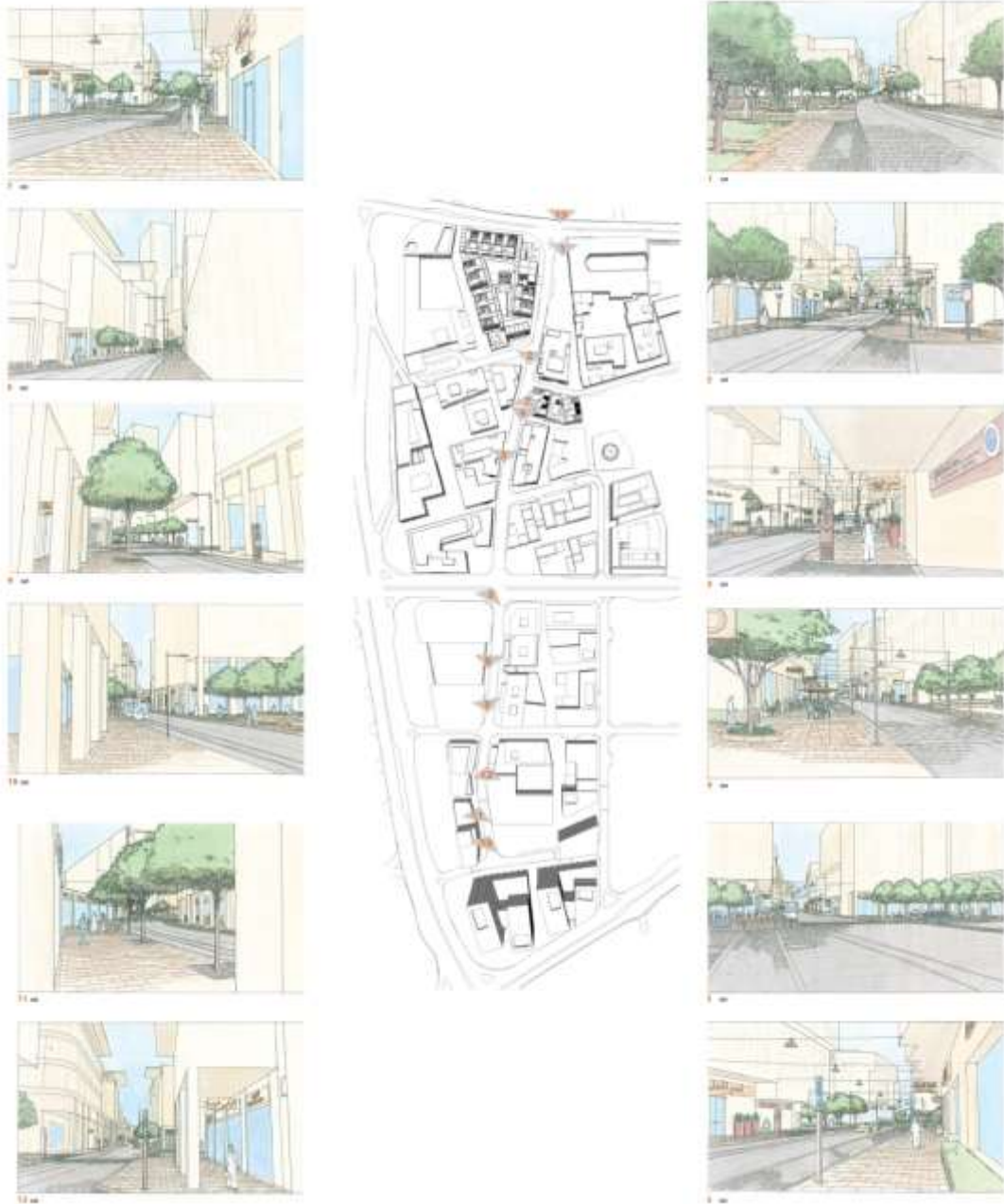


Figure 39 Design proposal for Kahrabaa Street, by Burton consultant office

#### **4.8 Qatar Definition for Streets, Regulations and Standards, Hierarchy and Classification**

Referring to the Qatar Traffic Law, the roads are defined as “an open passage for the movement of land transport, or towing pedestrians or animals, whether this open passage is a bridge, open space, lane, harbor pavement, square or anything of this nature where the public is allowed to pass with or without permit, even if covered” (QTD, 2007). However, the highway is defined as a “road specially designed for the passage of vehicles, which does not serve the property directly adjacent to the road” (QTD, 2007). These definitions were proposed by transportation professionals based on traffic law parameters; we cannot consider them to define the streets as an urban element (however, for the purpose of this research, the roads or streets represent the urban element which needs to be studied).

The road classification system in Qatar, outlined in the Qatar Highway Design Manual (QHDM) Version 1997 was subjected to a thorough review and modification in 2013. The new road classification system adopted currently in Qatar is shown in Figure 40.

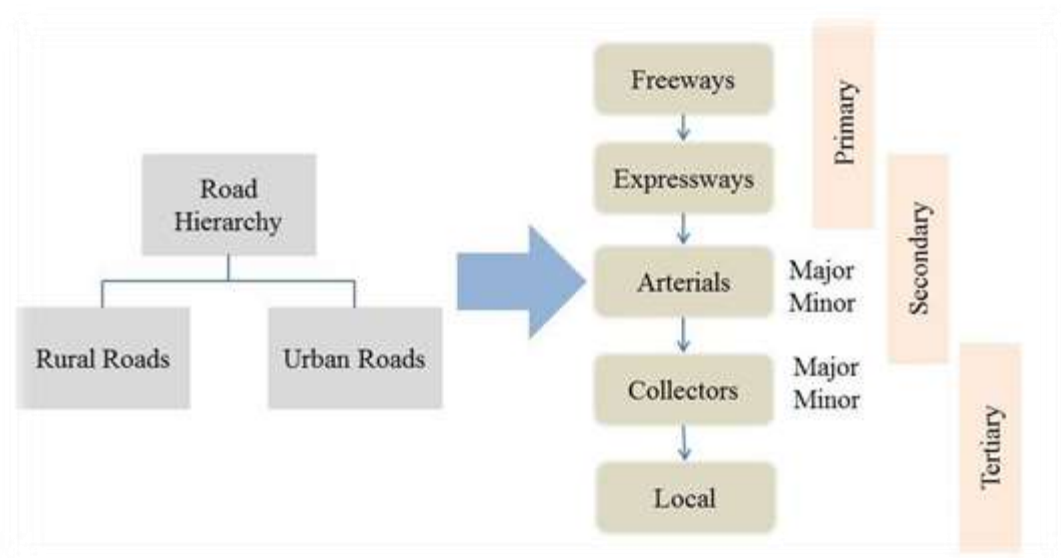


Figure 40 New road classification system in Qatar, (QTD, 2007).

The QHDM relates many highway design standards to functional road hierarchy classification. It indicates that the road hierarchy is used as a framework for the provision of technical guidance and standards relating to highway design, which is useful for civil work and contractors. It is worth mentioning that the proposed geometric design parameters in the design manual were based on international codes and standards and do not incorporate local geo-socio-economic factors.

The Public Works Authority in Qatar (PWA)<sup>16</sup> includes the following technical criteria in the design parameters of the road class:

- 1- Design speed and horizontal alignment
- 2- Right of way and cross-section

<sup>16</sup> The Public Works Authority 'Ashghal' was established in 2004 to be responsible for the planning, design, procurement, construction, delivery, and asset management of all infrastructure projects and public buildings in Qatar.

- 3- Lighting system
- 4- Vertical alignment
- 5- Pavement design

Obviously, we can't consider the proposed definitions, hierarchy and parameters complete for our urban studies. There is no consideration for the public modes of transportation and no consideration for the street functions outside of access and mobility. The absence of a hierarchy of roads would result in less efficient routes for traffic with associated increases in the time and cost of transporting people (in any mode) and goods. The quality of urban life would also decline as motorized traffic would increasingly infiltrate into neighborhoods to avoid mounting congestion, and this is one of the reasons causing the vital evanescence for most of the commercial streets that serve the neighborhoods of Doha.

Prior to establishing a suitable road classification system or reviewing the established classification system, the existing road system in Qatar has to be re-evaluated to first determine if each street will continue to serve its function. Based on the evaluation, the functional classification of roads can be established and accordingly can be identified and included in the transportation master plan.

#### ***4.9 The Case Studies***

The field investigation is carried out on the three case study areas: Al-Mansoura Street, Al-Sadd Street, and Al-Mirqab Al-Jadeed Street. All areas are within the limit of the Doha Municipality and were established in the same period. These



streets are classified by the Municipality as commercial streets serving mixed-use neighborhoods, figure 41.

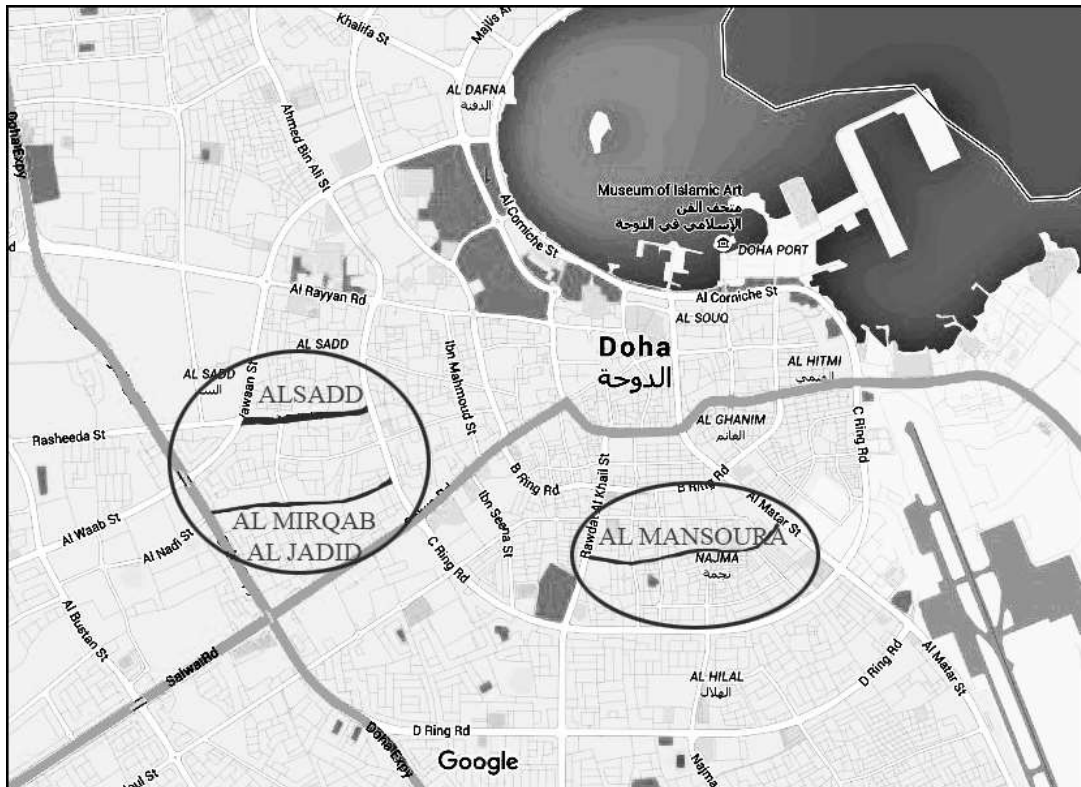


Figure 41 Location plan, three case studies in the city of Doha

The 2010 Census shows the zones with more than 1000 buildings in 2010, figure 42, illustrating the higher concentration of buildings in 25 zones in Doha; many of these zones are within the studied areas (Qatar Statistics Authority, 2013).

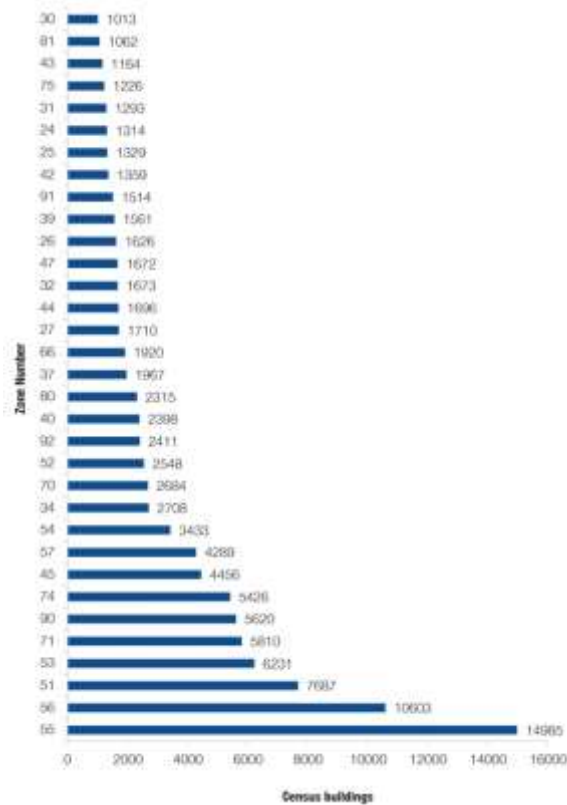


Figure 42 Qatar zones with more than 1000 buildings, 2010. (Qatar Statistics Authority, 2013)

For instance, zone 34 shows 2708 buildings. It is the 11<sup>th</sup> highest zone level in the city in terms of building density. This zone represents the Al-Sadd district that was commercially supplied by Al-Sadd Street. Zone 39, which represents Al-Mirqab, shows 1561 buildings, while zone 25 shows 1329 buildings, representing the Al-Najmaa district that is mainly served by Al-Mansoura Street. Considering these areas with high building density, Qatar Vision projects to develop infrastructure in order to cope with their high demand<sup>17</sup>.

<sup>17</sup> The State of Qatar is divided into seven municipalities. Each municipality such as Doha municipality is further divided into zones for the convenience of planning. These are numbered from 1 to 98. At present (2013) there are 92 zones with almost 70 in the Doha metropolitan area.

Referring to initial site visits, it was noticed that most of the buildings located on the front of these streets are mixed-use buildings and built on the sidewalk line, leaving no setback, and ranging from one to seven stories in height, except for a few new buildings with office spaces. All three mixed-use neighborhood commercial streets host a combination of small independently-owned local businesses and national chain stores. There are some vacant plots that feature in planned projects that are still at the design stage, while some existing buildings are earmarked for demolition due to their degradation as a result of poor maintenance<sup>18</sup>. Regarding car parking, each building accommodates the required number of cars – as per the building’s regulations – within its plot limit. However, visitors still use the driveway or the service road for quick stops.

#### **4.9.1 Al-Mansoura Street**

This street connects Al-Matar Street to Rawdat El-Khail area. It is located within the old Doha downtown area and consists of an extensive mixed-use build-out of more or less aging structures. These outdated structures or developments may present a lower assessed value than the actual land value. This could potentially provide for excellent opportunities for new carriageway improvements for both pedestrian and vehicular circulation. Part of the Souq Al Haraj buildings overlook Al-Mansoura Street, and these buildings have access from both the main street

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<sup>18</sup> It is worth noting that most of the developers in Qatar, particularly those in the private sector, do not include the maintenance and running costs in the estimated project cost. Additionally, they do not consider the life cycle of the building as it narrows their profit margins and short-term return on investment, especially as most buildings are sold to other investors within a short period of time and regular maintenance is not required by law.

and the market. Souq Al Haraj is a market established in that area in the 1980s for selling secondhand goods. It adds vibrancy to the street on the one hand, but on the other, creates traffic problems since its design did not allow for loading and unloading issues, see all figures and drawings 43-50<sup>19</sup>.

#### **4.9.1.1 Street Blocks**

Three blocks are chosen in this street to be studied in detail. These blocks were selected upon site visit. Based on observations, this area appears to physically have the potential to be developed. The block's main features are:

- The form of the main street in that area runs in an aesthetic curve that gives place its own charm in spite of the lack of green landscape.
- The area has pedestrian links to adjacent areas.
- Newer buildings are built in human scale, without over-scaling or being over-imposing.
- There are few areas with ample pedestrian movement, refuge islands and pedestrian crossings.

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<sup>19</sup> All drawings and photos in this chapter are made by the author and property of DFH



Figure 43 Al-Mansoura Street location

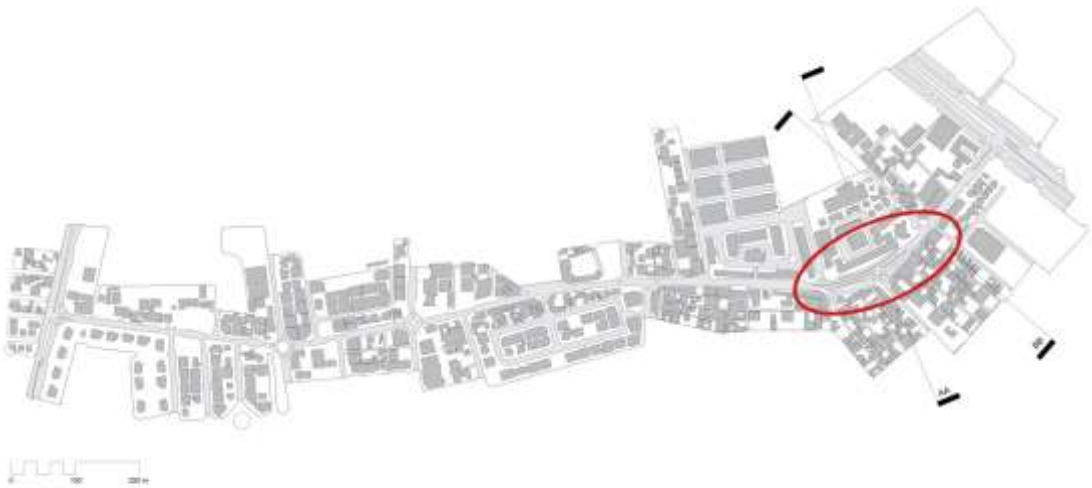


Figure 44 Al-Mansoura master-plan, indication of the studied area.

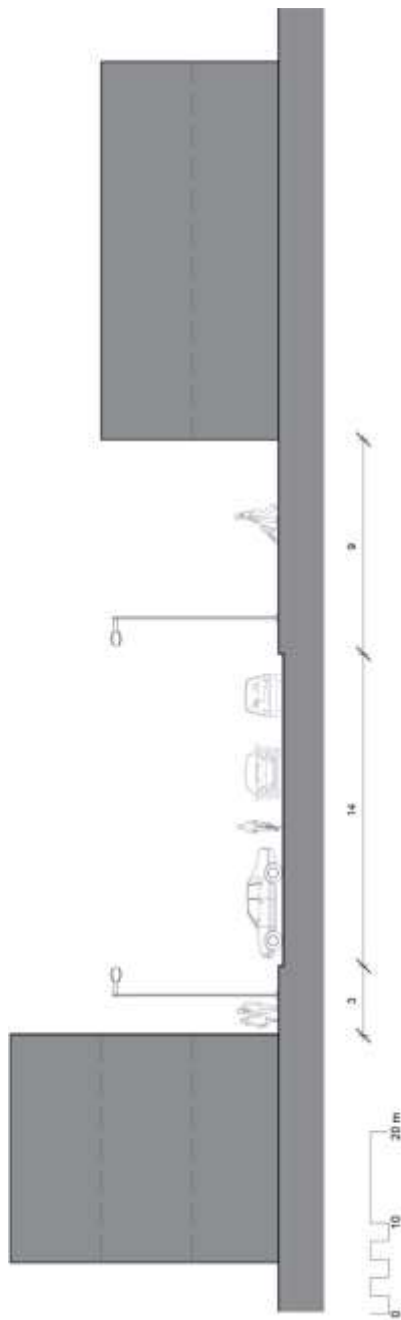


Figure 45 Typical section at Al-Mansoura Street

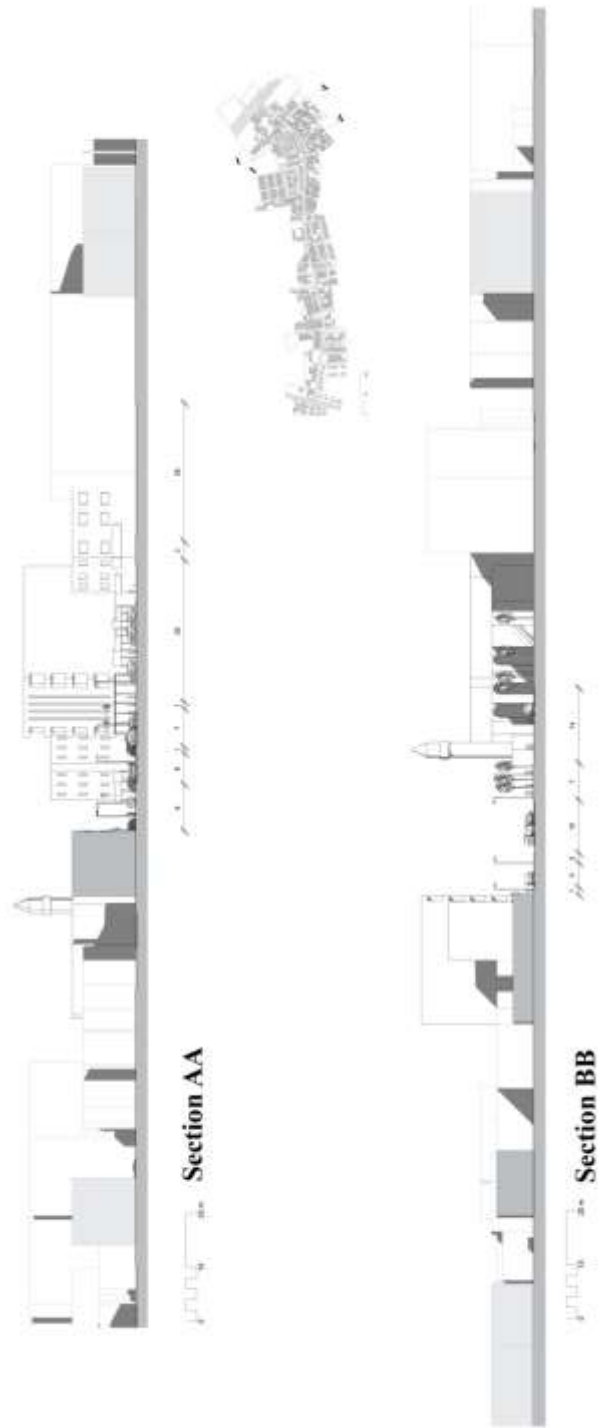


Figure 46 Sections in Al-Mansoura Street

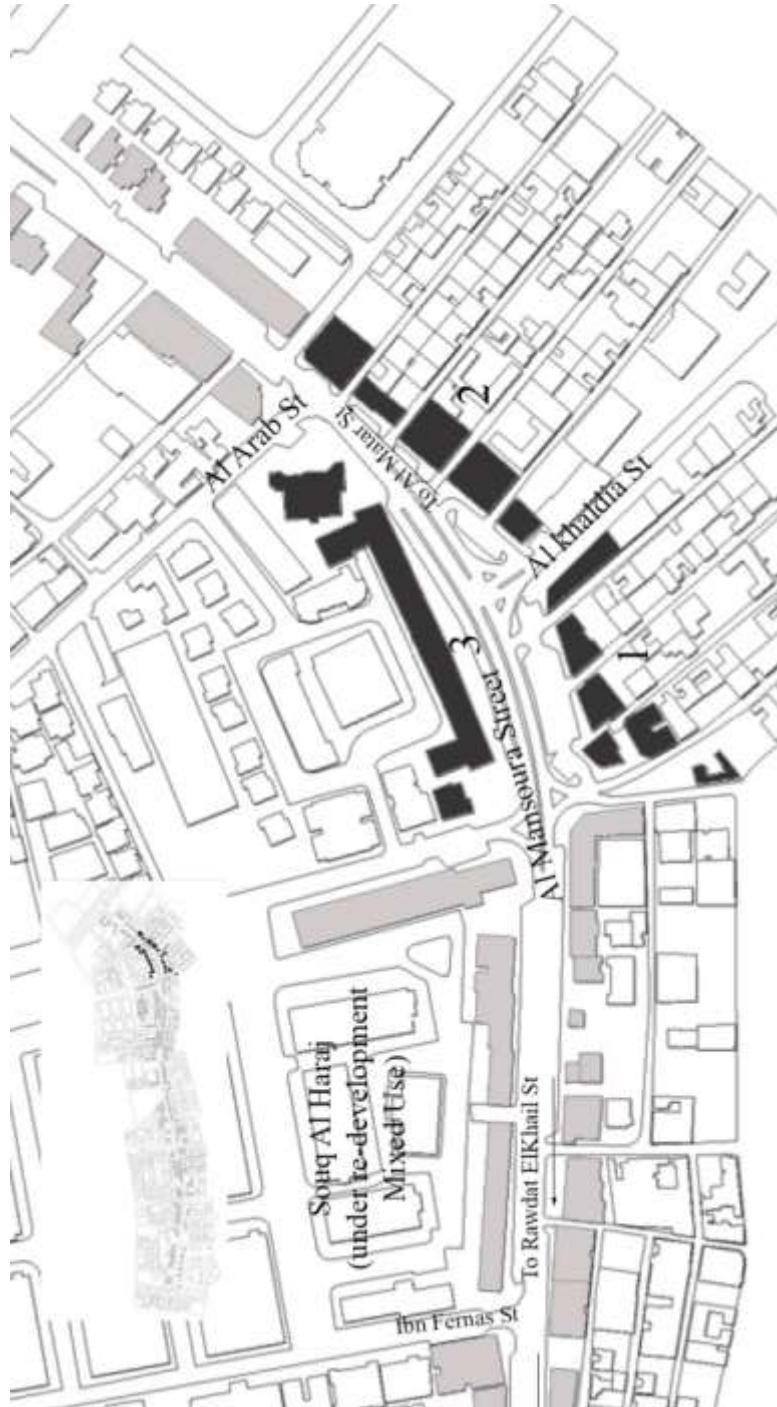


Figure 47 Map indicates the three studied blocks in Al-Mansoura St.



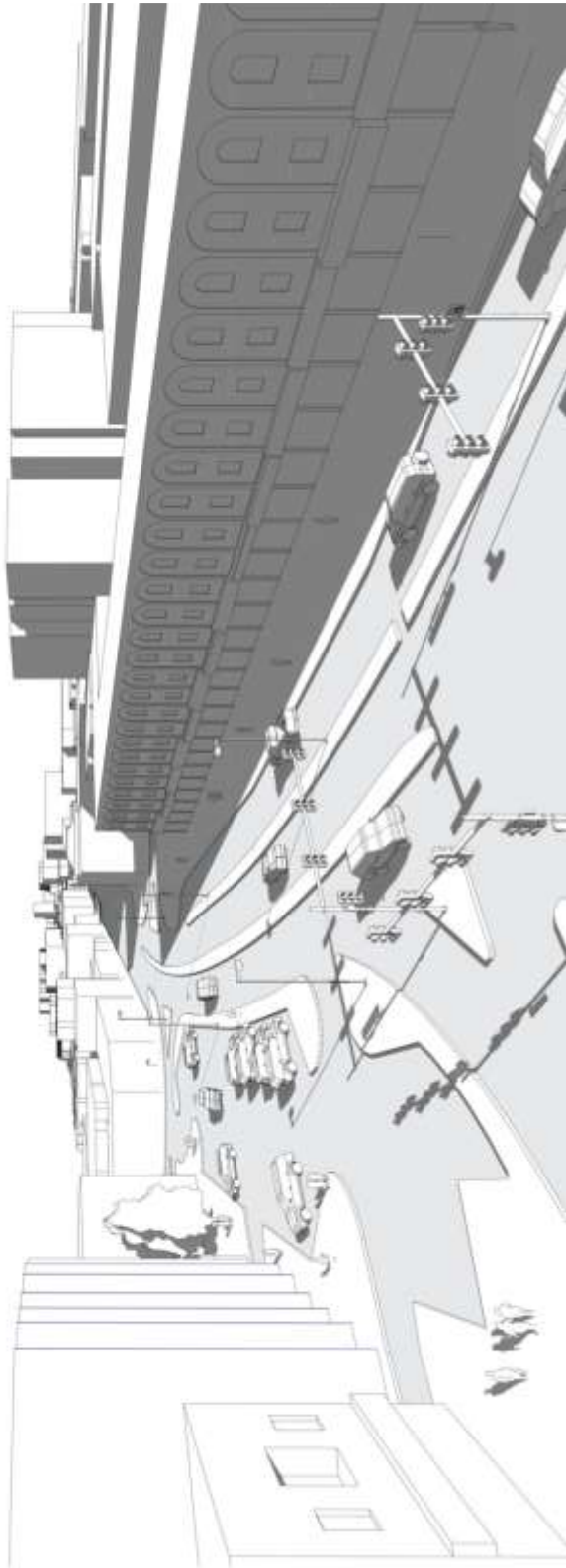


Figure 48 Perspective view [1] in Al-Mansoura Street

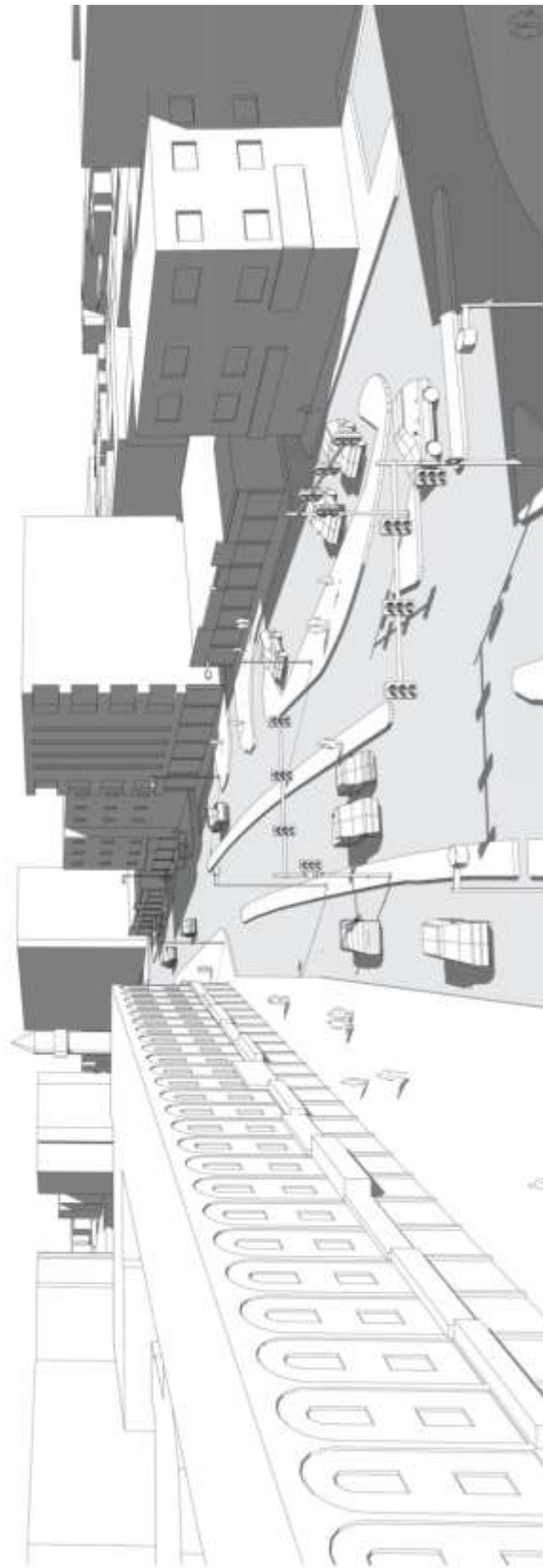


Figure 49 Perspective view [2] in Al-Mansoura Street



Figure 50 Al-Mansoura Street

#### **4.9.2 AL-Sadd Street**

Al-Sadd 'shopping' street is one of the oldest retail streets in Doha, and it was considered to be a vital location. Retail was valued in the street because of the economic vitality of the area. It was a place where people could buy the best quality clothing, shoe and accessory brands. However, this changed with the construction of huge enclosed air-conditioned shopping malls, which are becoming the primary spaces for socializing and spending leisure time. Although Al-Sadd Street was once one of the most important neighborhoods in town, the random sprawl with its connection to the highway has decreased the street's integration with its surroundings – especially, as it is noticed, motorized vehicles speeding up to reach the highway have resulted in the street became less walkable.

Al-Sadd Street has two sides, each related to different planning zones. However, the land use on both sides are mixed-use. The street is defined as a commercial/retail street that has nine different types of shop categories, from the largest number of shops to the smallest: fashion/textiles/perfume, food and beverages, jewelry and watches, travel agencies, services and car agencies, and finally anchor stores. It also has two shopping malls and public utilities.

Al-Sadd Street is 2300 meters long. The western part, which begins after the intersection and connects the street to the highway, has a big vacant plot of land on the north side, indicating that the area is still under development and accordingly it is not considered in the detailed analysis. Accordingly, the considered part's length is 1500 meters. Another part is excluded from the detailed analysis of the street because of construction works. Hence, five blocks

are selected on the east side to be further studied. These blocks constitute a long section of the street – almost a quarter, as shown in the drawings and figures 51-58.



Figure 51 Location of Al-Sadd and Al-Mirqab Al-Jadid Streets

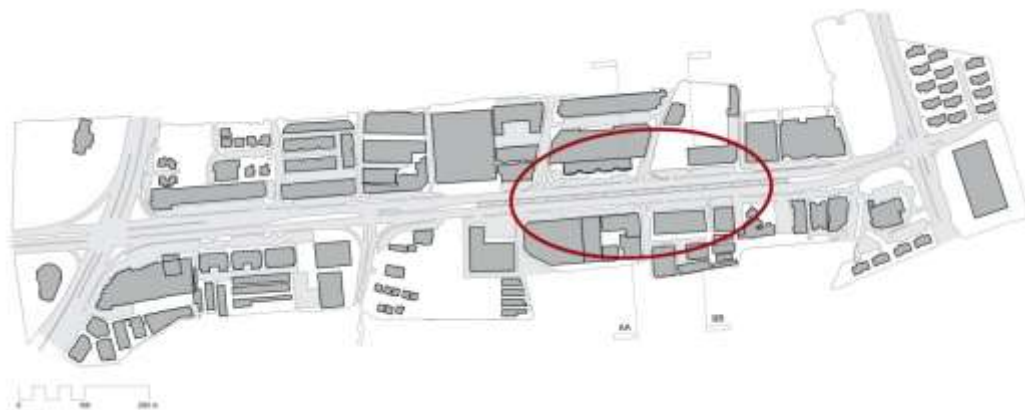


Figure 52 Al-Sadd Street master plan, indication for the studied area.

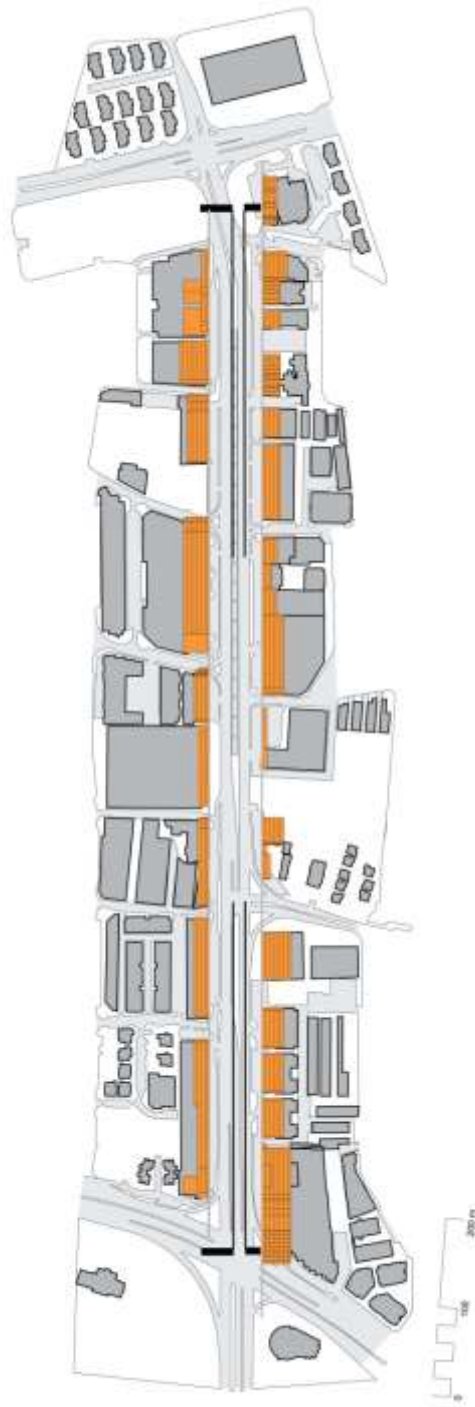


Figure 53 Al-Sadd Street master-plan and indicative sections

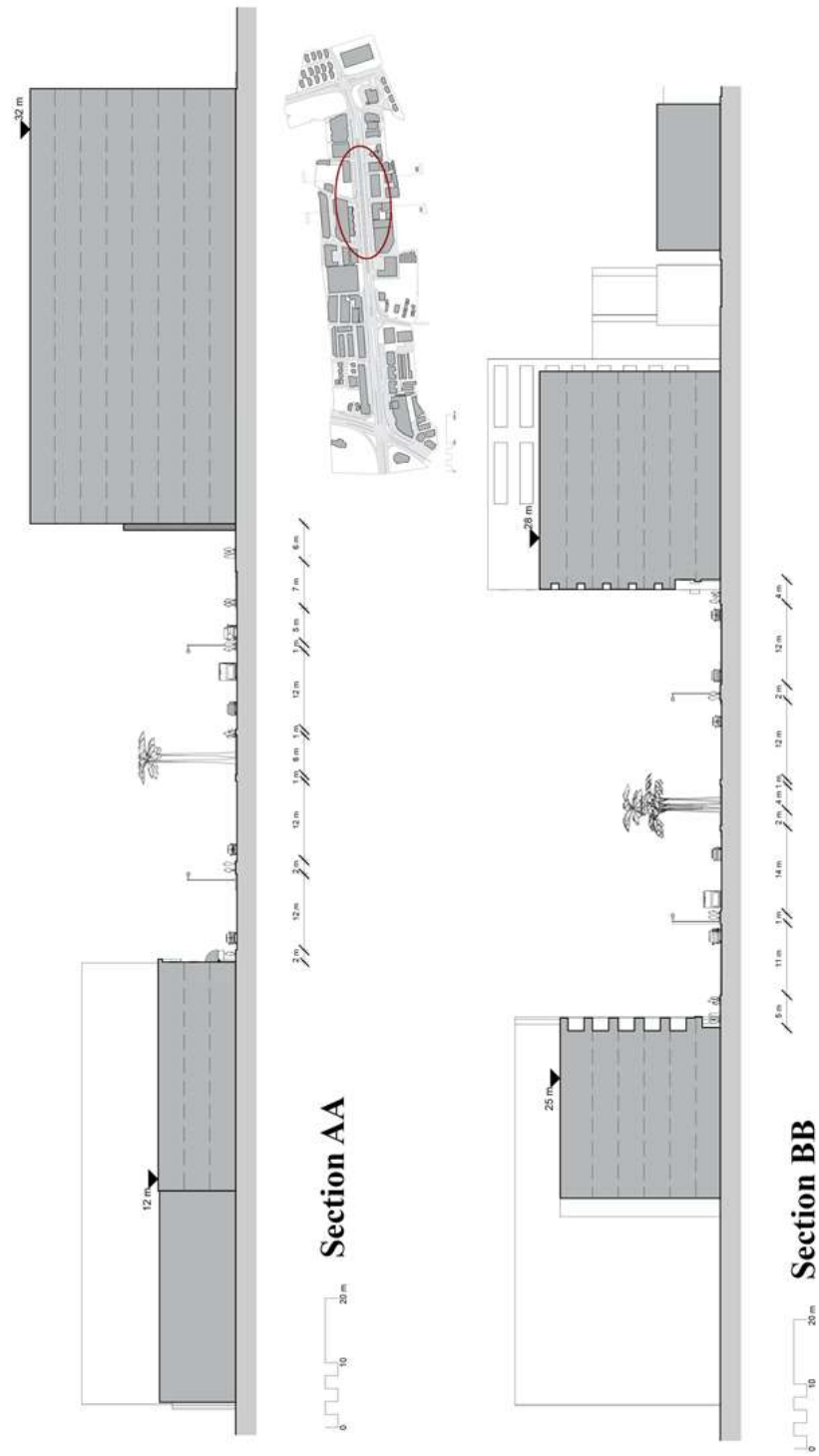


Figure 54 Sections in Al-Sadd Street

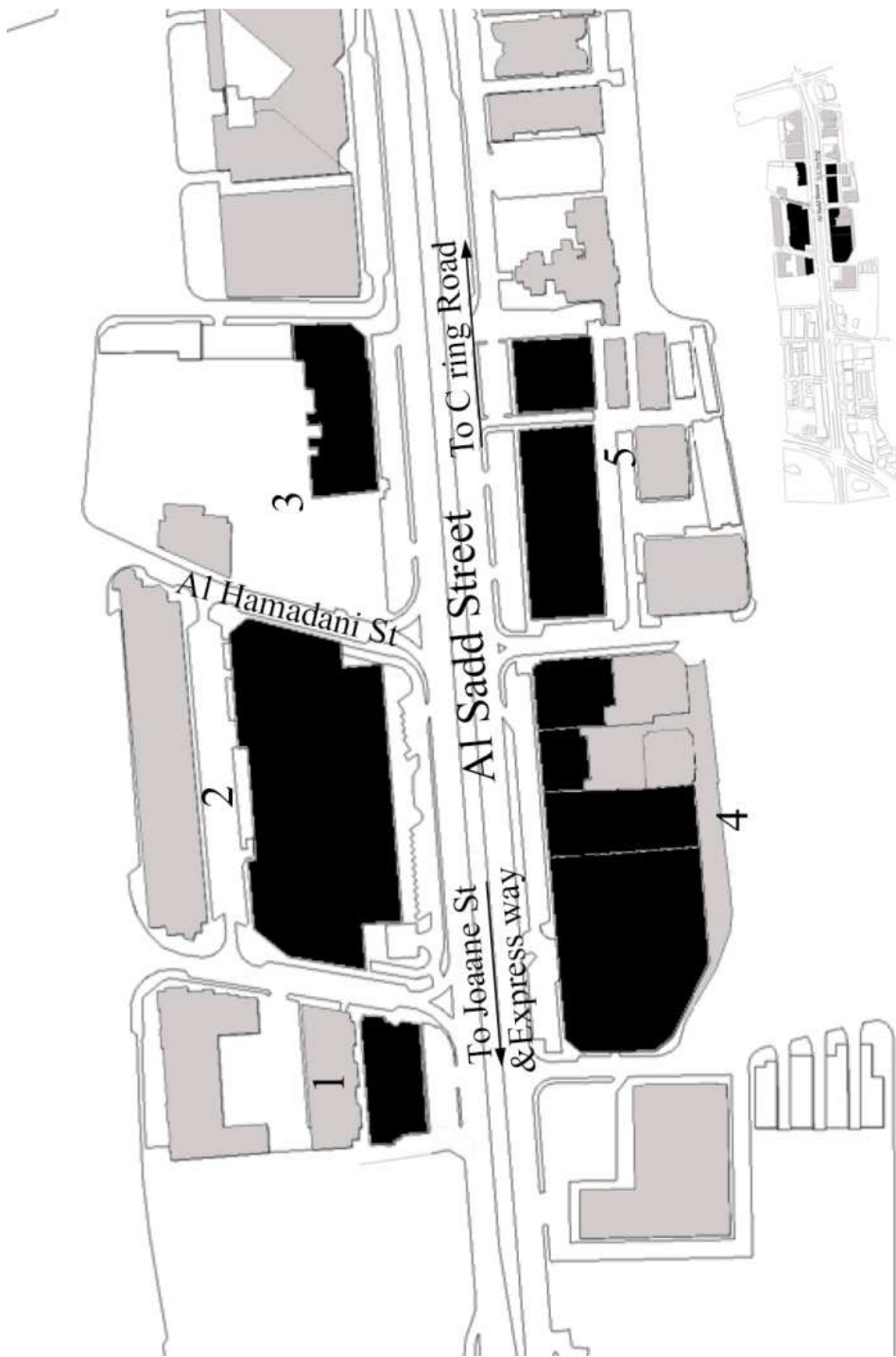


Figure 55 Map indicates the five studied blocks in Al-Sadd Street



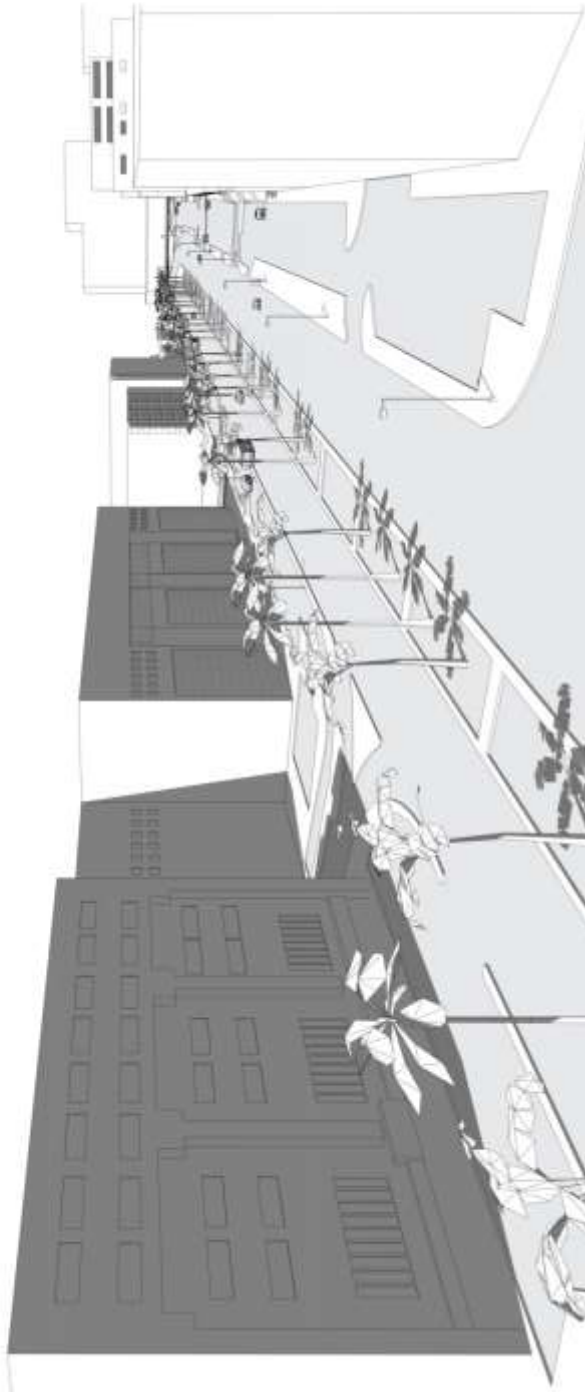


Figure 56 Perspective view [1] in Al-Sadd Street

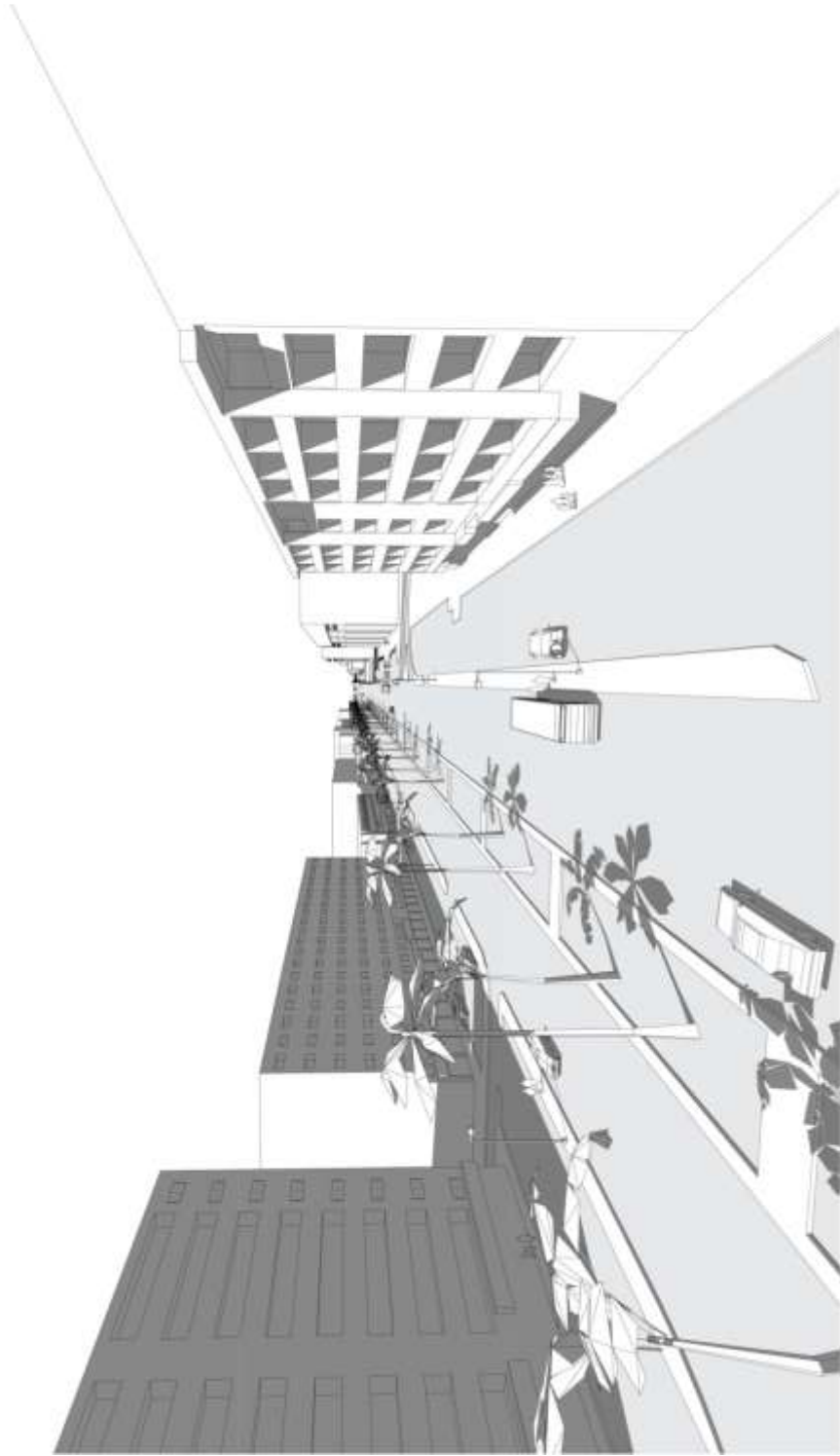


Figure 57 Perspective view [2] in Al-Sadd Street



Figure 58 Al-Sadd Street

### 4.9.3 Al Mirqab Al Jadeed Street

Al-Mirqab Al-Jadeed Street is parallel to Al-Sadd Street. These two streets are connected by a small street which acts as a ‘collector’ of the traffic between them, and a major route called Al-Kenana Street, which runs parallel to them and offers access to a second category of commercial venues, adding vitality to both commercial corridors. Al-Mirqab Al-Jadeed Street has a length of 1.750 kilometers; it has two lanes with a maximum allowed speed for vehicles of 50 kilometers per hour.

Two areas are selected in this street to be analyzed in detail, one towards the east that includes the Family Food Center, composed of four blocks. The second is on the eastern side and has two blocks that includes the Doha Clinic. See all figures and drawings 59-64.



Figure 59 Al-Mirqab A-Jadid master plan, indication for the studied areas.

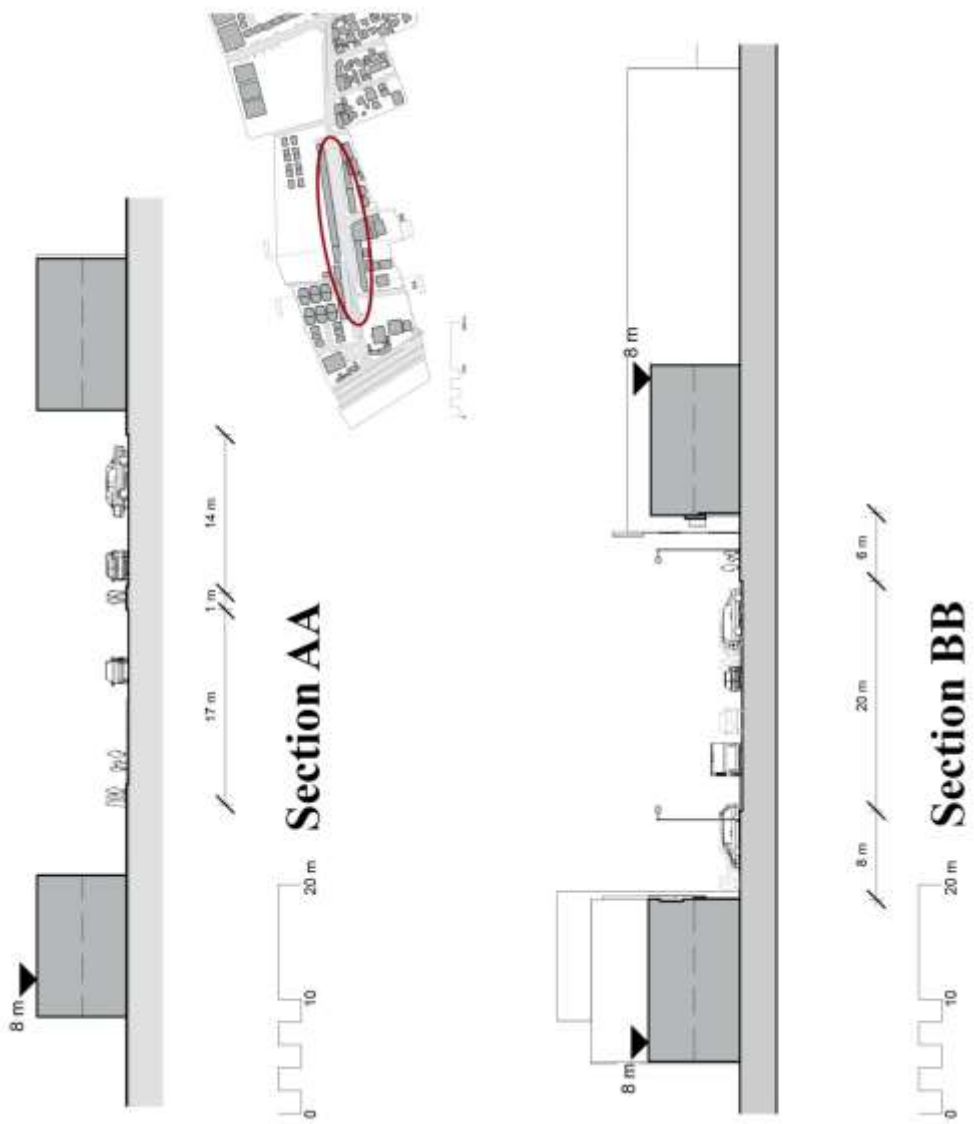


Figure 60 Al-Mirqab Al-Jadeed Street section.

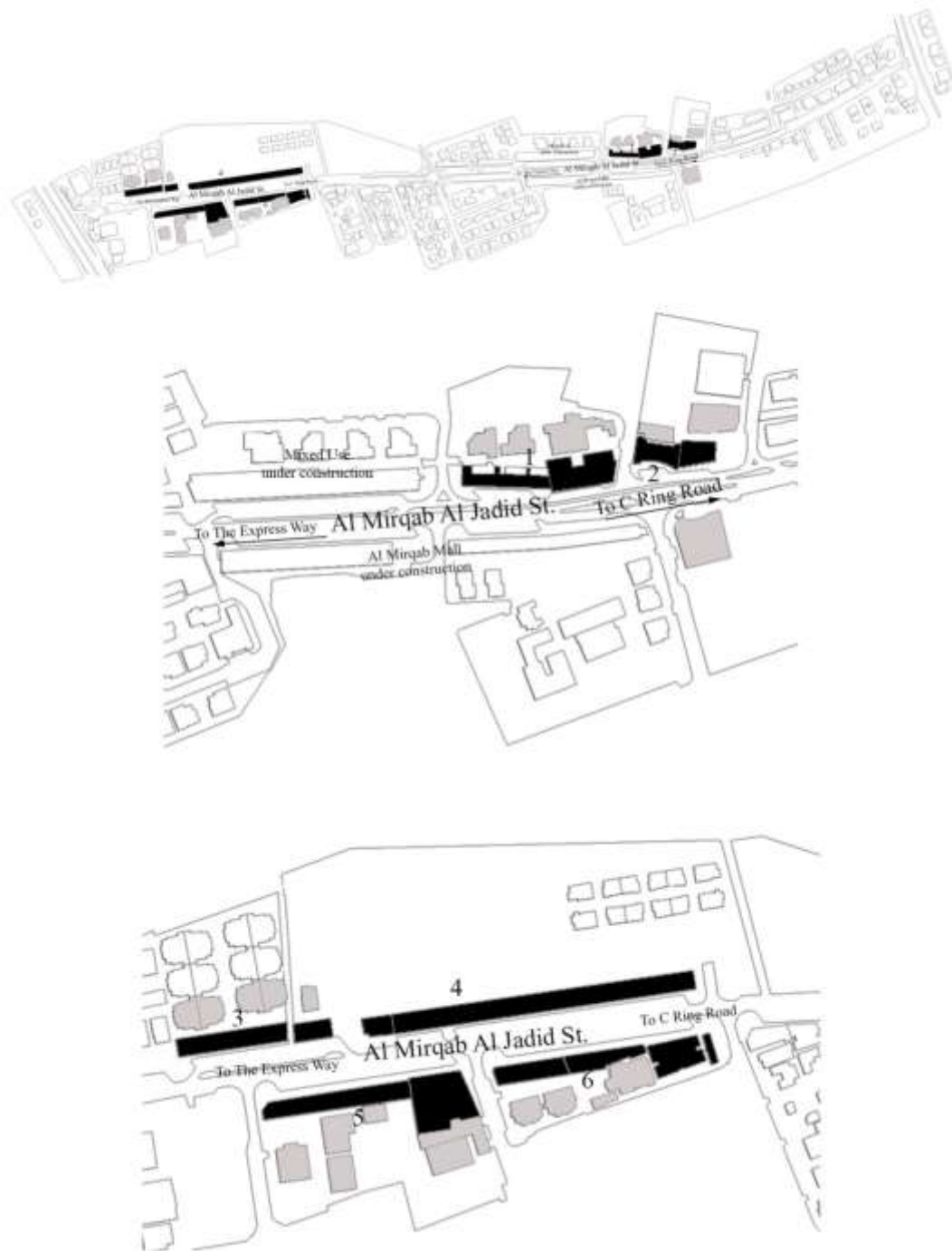


Figure 61 Map indicates the two blocks' areas in Al Mirqab Al Jadeed St.



Figure 62 Perspective view [1] in Al-Mirqab Street

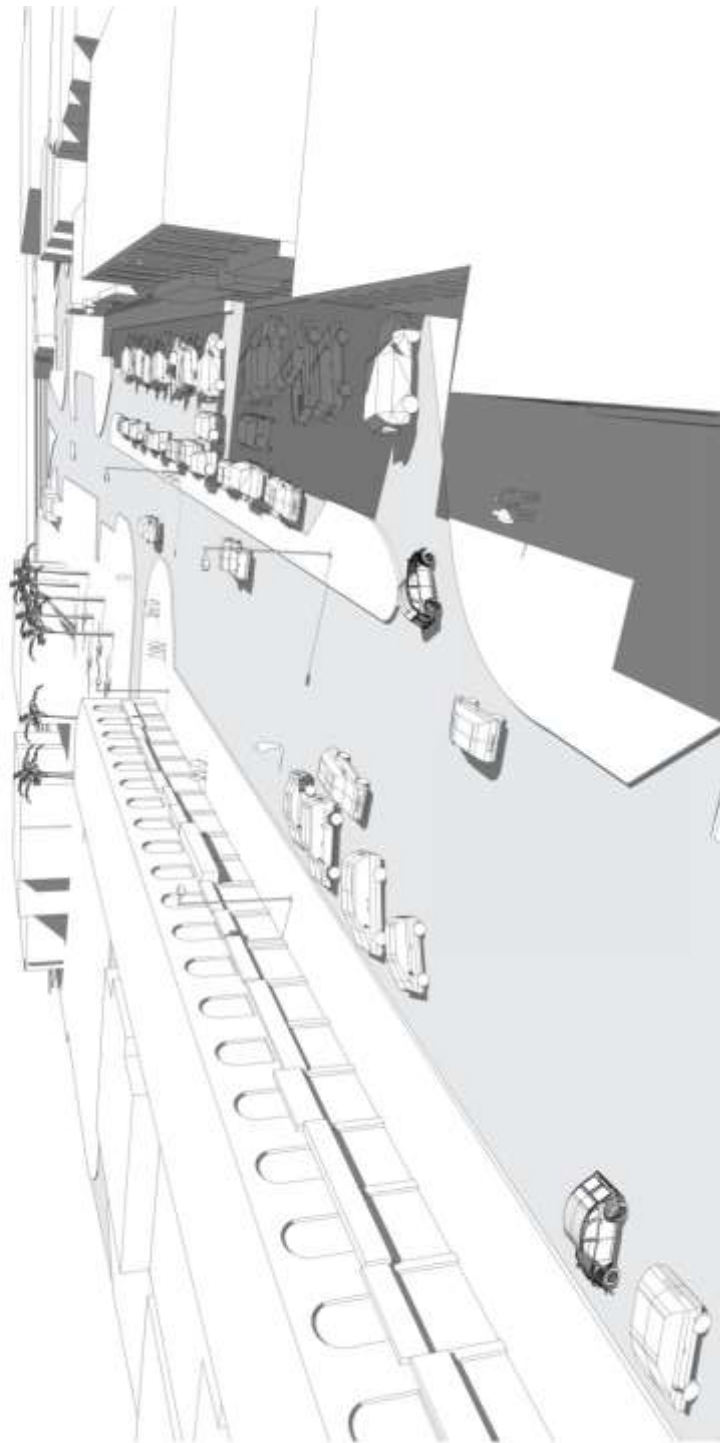


Figure 63 Perspective view [2] in Al-Mirqab Al-Jadeed Street





Figure 64 Al-Mirqab Al-Jadid Street

## 5. CHAPTER FIVE: STUDY ANALYSIS AND DATA COLLECTION

The previous four chapters outlined the research problem, the method statement, the framework of the study, and the case study areas. This chapter uses the established theoretical basis to analyze the existing streets' form and the data collected through field investigation and three-dimensional drawings. The observational data, along with the output of the questionnaires and interviews, are compared with the studied streets to understand the concept of vibrancy in the urban commercial streets of Doha.

### 5.1 *Morphology and Organization of the Existing Streets*

The three studied streets have been part of the existing urban structure since the 1960s. Aerial views (GIS-Qatar, 2015) show the rapid urban growth of Doha's urban form over the years. They also indicate the transformation of the streets' typology based on the building sizes, types and forms. See figures 65-70.

The Al-Sadd area's<sup>20</sup> aerial view in 1966 indicates that both Al-Sadd and Al-Mirqab streets were created at approximately that time; they were sand paths with no developments around them, and Al-Mirqab was not yet completed. The low 'Al-Sadd' wall, which was created earlier as a dike to prevent rainwater from the west side affecting the developed areas of the east side, is illustrated in the map, highlighted in orange.

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<sup>20</sup> The Al-Sadd area includes Al-Sadd Street and Al-Mirqab Al Jadeed Street.



Figure 65, Aerial view, Al-Sadd area 1966 (GIS-Qatar, 2015)

Indeed, the low land at that area was the reason for delaying its urban development, as rainwater was collected here during the winter. It is also why the area is named ‘Al-Sadd’, which means ‘the dike’ (Al Khater, 2015).

The most significant morphological difference between Al-Sadd in 1966 and in 2015 is the density of the buildings. The Al-Sadd area became the city’s most successful commercial and social center with the accompanying suitable infrastructure (Mirincheva, 2012). It is clear in the aerial views that the area in general – in spite of the existence of vacant land – still has a significant building floor area to plot area ratio, which offers a high potential for creating interface conditions between users entering and exiting buildings and users of the streets (Mirincheva, 2012).

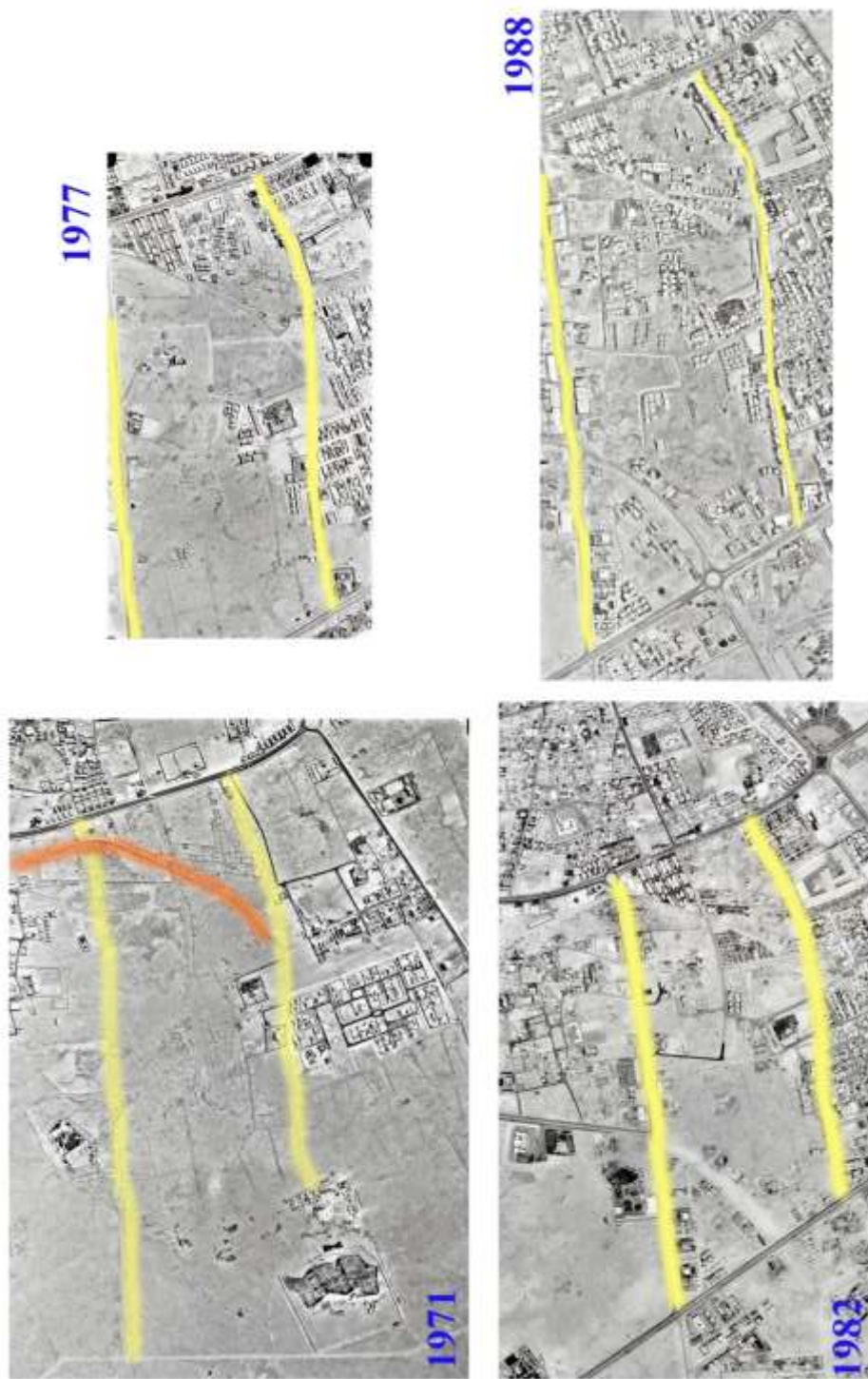


Figure 66, Aerial views, Al-Sadd area in 1971, 1977, 1982 and 1988 (GIS-Qatar, 2015)

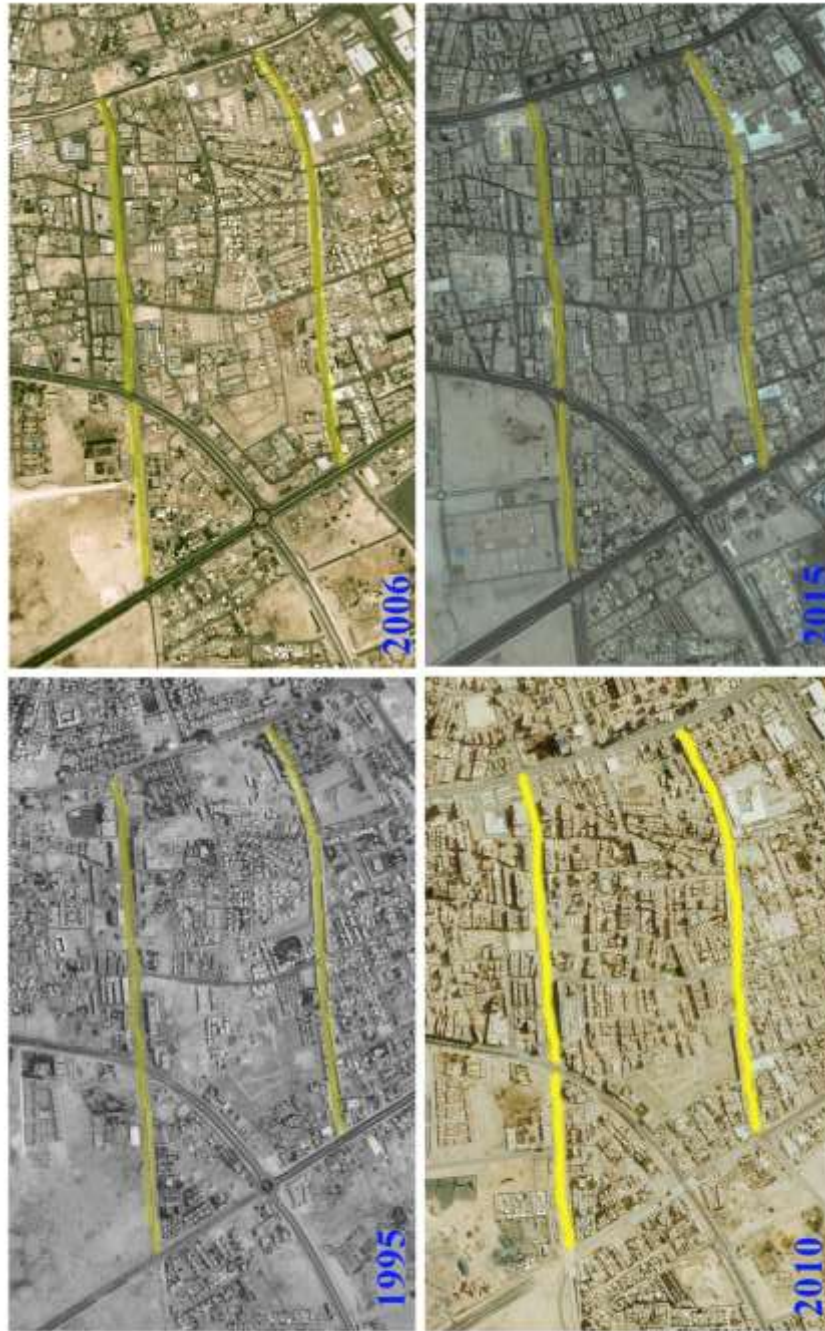


Figure 67 Aerial views, Al-Sadd area in 1995, 2006, 2010 and 2015

The aerial views of the Al-Najma area<sup>21</sup> show enormous transformation, specifically in the 1970s and 1980s; the street was just a sand path when it was created, before the high level of development in the decades that followed. See figure 68.



Figure 68, Aerial view, Al-Najma area 1966, (GIS-Qatar, 2015)

The maps in figures 68-70 are illustrative aerial views for the Al-Najma area taken between 1966 and 2015, indicating the development of the street over five-year increments. It is clear from the maps that the pace of development envisaged was nothing like that which quickly arrived. Nevertheless, the urban fabric in both areas – the Al-Sadd and Al-Najma neighborhoods – developed in the traditional form, with internal roads being erected as a result of the new buildings.

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<sup>21</sup> The Al-Najma area includes Al-Mansoura Street

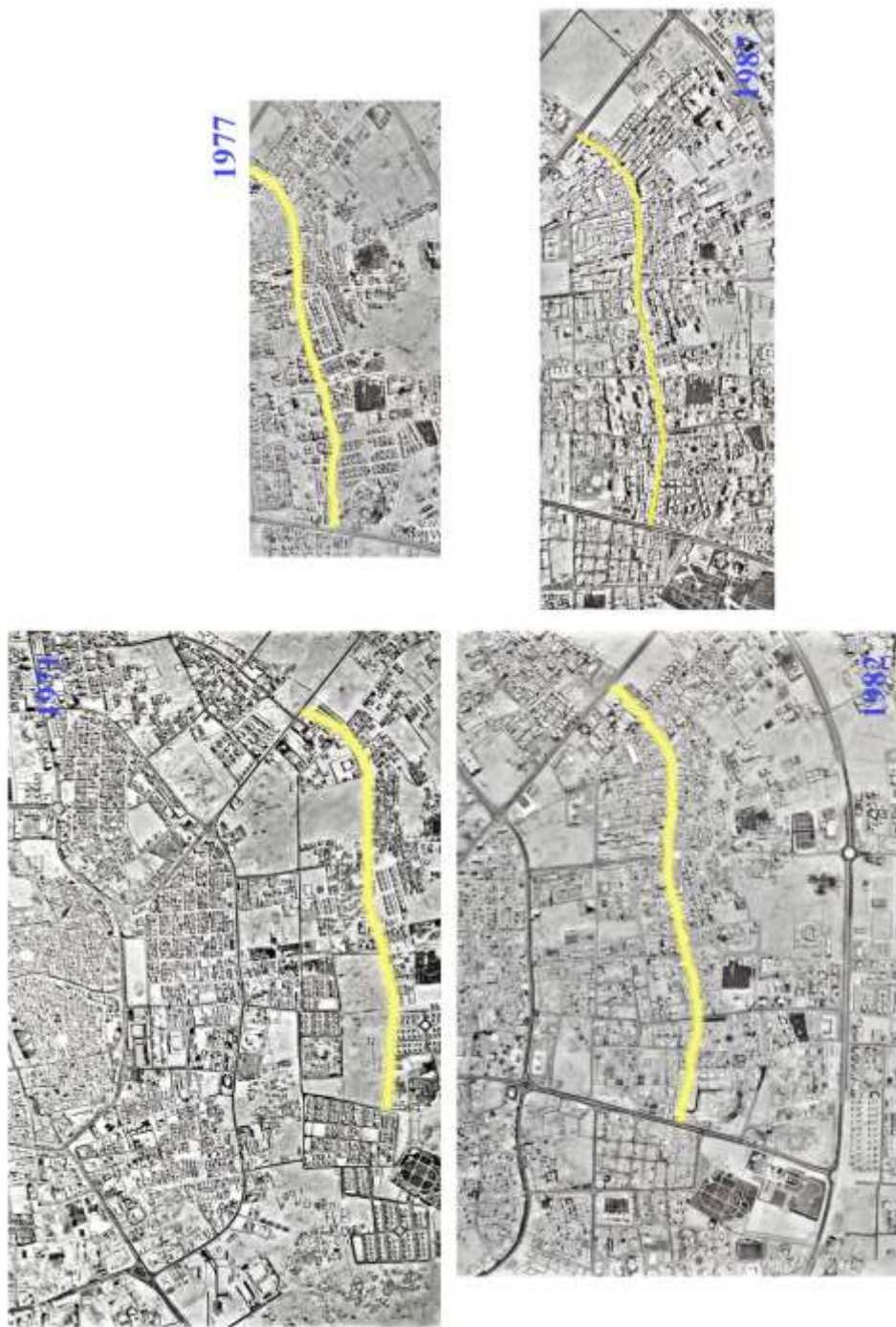


Figure 69 Aerial views, Al-Najma area, 1971, 1977,1982 and 1987, (GIS-Qatar, 2015)

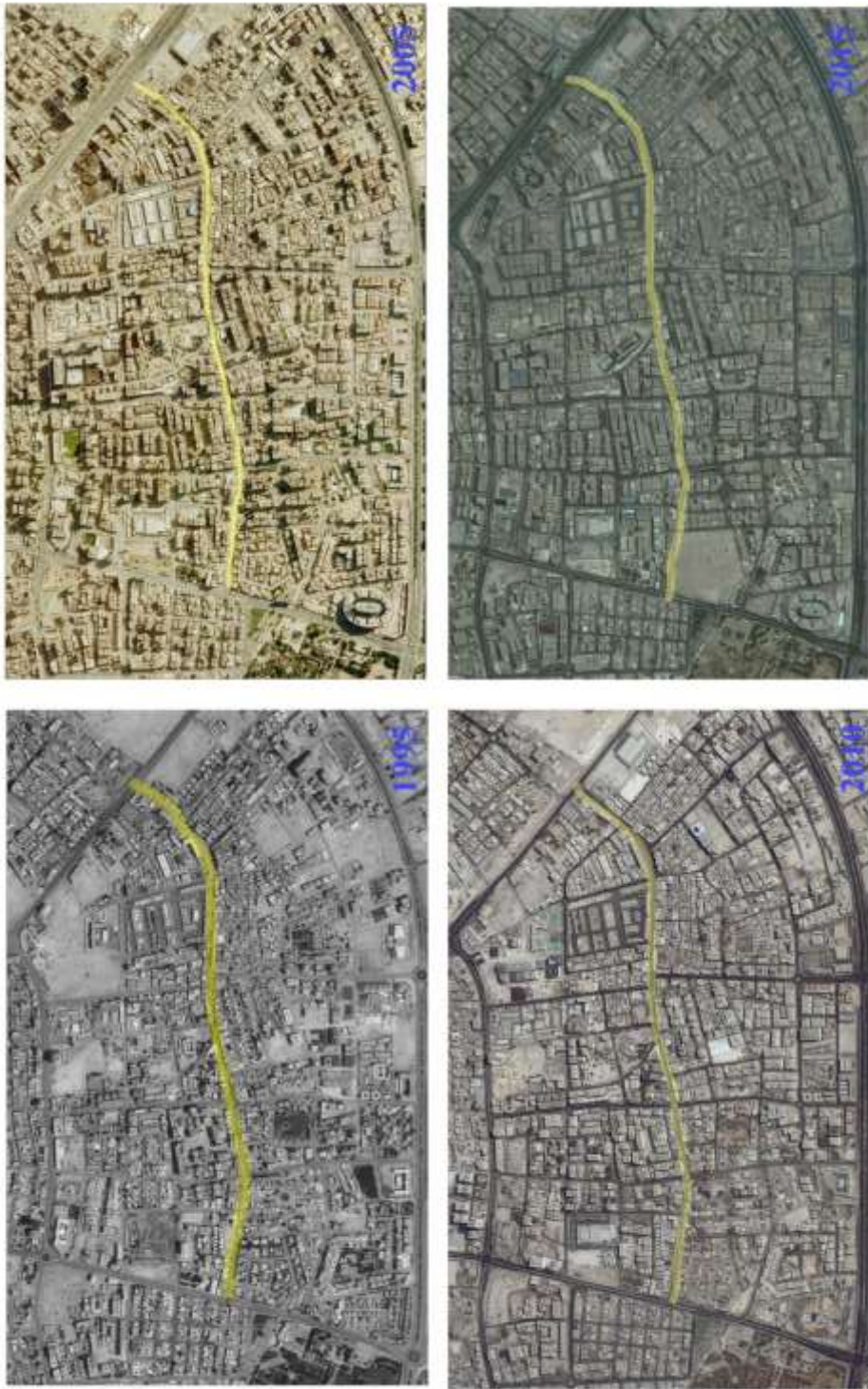


Figure 70 Aerial views, Al-Najma area 1995, 2005, 2010 and 2015, (GIS-Qatar, 2015)



In order to support the above' morphological analysis, an accurate composite CAD map of the entire area was assembled from a variety of sources: Doha Municipality and Google Earth cross-referenced with surveys of the existing conditions. Three-dimensional drawings of the areas of the three streets were prepared to enable the analysis of the morphology within the context. See figures 71 and 72.

The existing urban structure of the studied areas is defined by the formal grid of the hierarchical street system, which, in turn, defines the super blocks on which the individual plots and buildings sit. A further refinement of the urban grain is achieved by an informal lattice of the narrow pedestrian streets and spaces.

The superstructure of the study areas shown in figures 73-75 are defined by individual buildings and plots which form the smallest individual entities on-site.

The most easily distinguishable difference between the studied streets' morphologies and those of the rest of Doha, is the density of the buildings. These streets have very high building floor area to plot area ratio, which leads to a high potential for creating interface conditions between the users entering and exiting buildings and users of the streets. That creates a possibility for social interaction between the retail users, residents, corporate occupants, and all pedestrians. The other key aspect of the social exchanges is the distribution of land use.

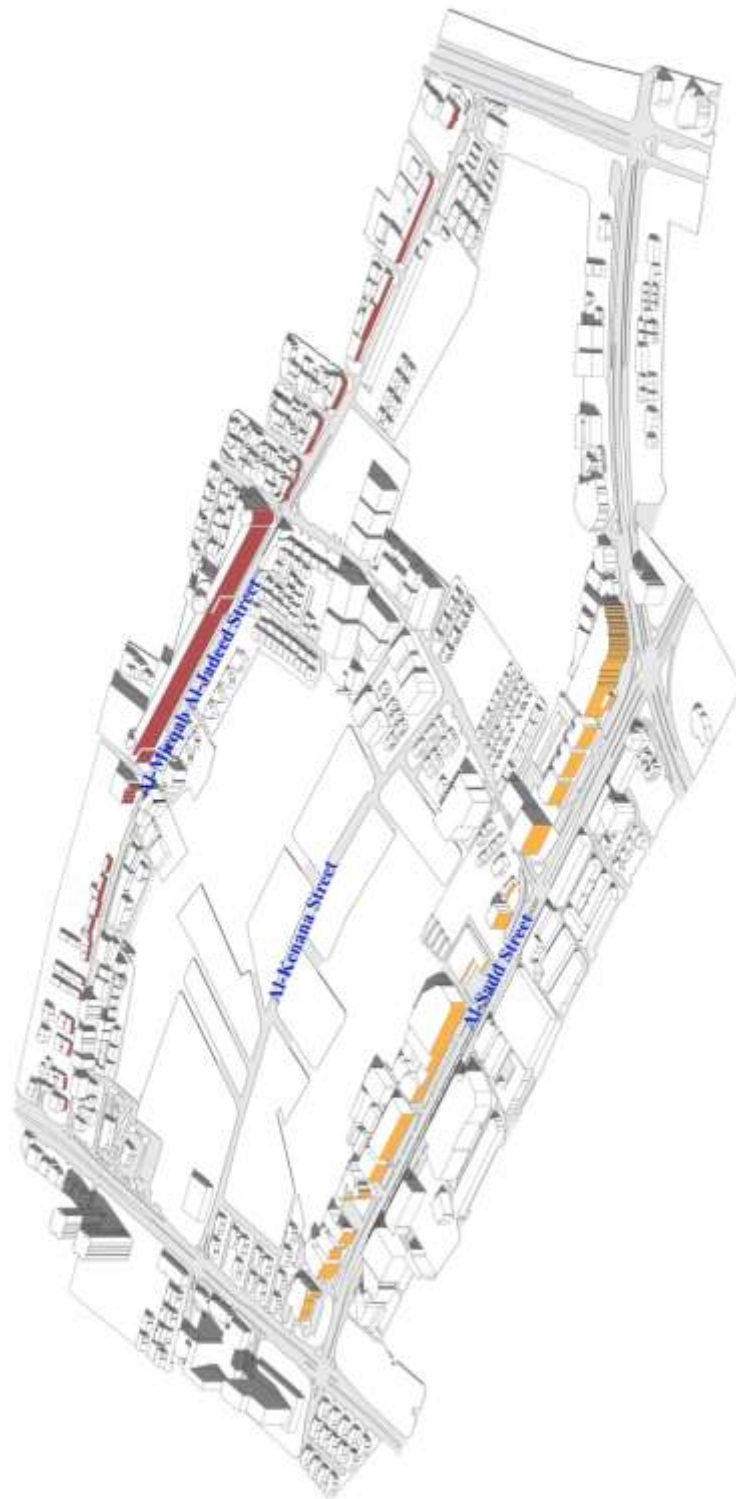


Figure 71 North-west three-dimensional view of the Al-Sadd area includes Al-Sadd Street and Al-Mirqab Street.



Figure 72 North-west three-dimensional view of Al-Mansoura Street, source the author

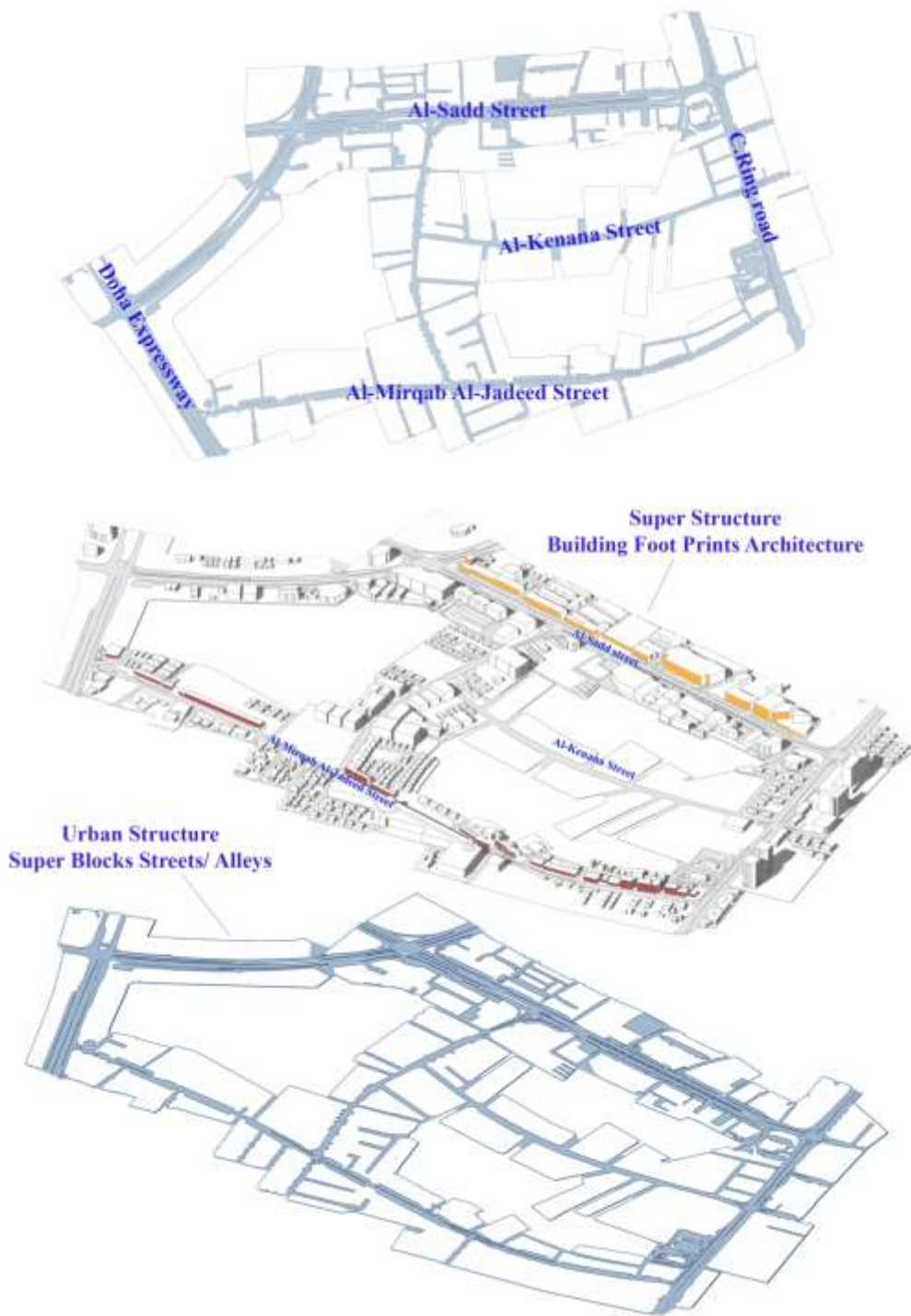


Figure 73 The urban structure sketch and the urban form of Al-Sadd Area from the south east.

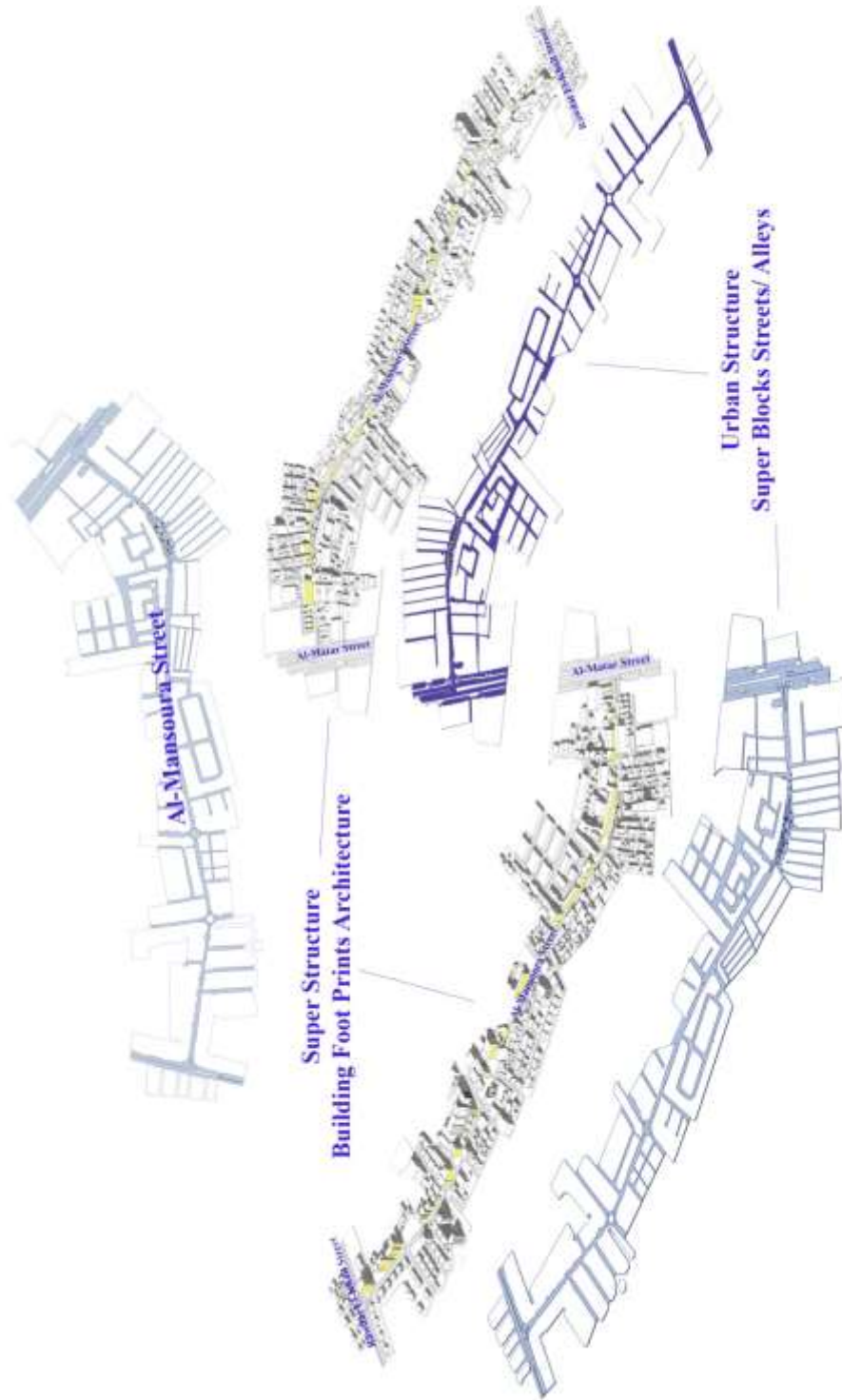


Figure 74 The urban structure sketch and the urban form of Al-Mansoura Area

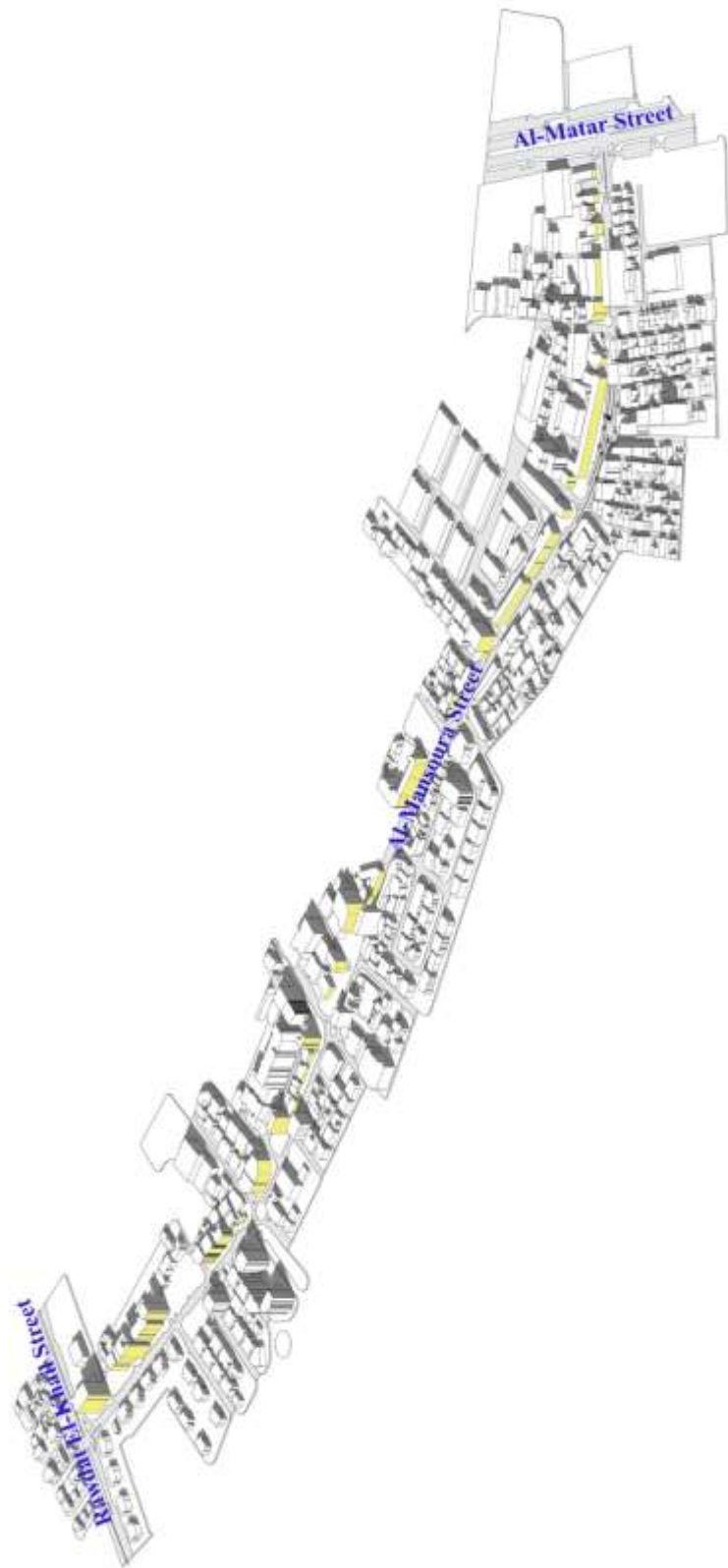


Figure 75 South-East 3d view of Al-Mansoura Street

The height of the buildings was limited to two or three stories until the 1980s. However, unstable transformation and the demolition of many buildings to replace them with new developments created a disproportion between the blocks. For instance, in Al-Sadd Street, a one-story retail building called the Al-Salam Complex was one of the most famous retail anchors in the area, as it was a destination for people to enjoy a meal in one of its restaurants after shopping. It was well-connected to the street and was easy to access with an inner courtyard providing much natural light. This commercial complex was located facing the Al-Muftah store, its location creating interaction between the two sides of the street. However, it was demolished in 2001 and replaced by Royal Plaza, which is out-of-human scale in that area, with the owner intent on obtaining more rentable spaces.

The maps in figures 73-75 represents an overlay of two different urban forms of the studied areas.

A formal and efficient rectilinear planning grid has been overlaid with an informal lattice form (typical of more incidental growth). This overlay clarifies the urban form character of the three streets. “The more formal grid provides the structure and sense of urban fabric importance..., The informal lattice pattern provides the element of surprise, individual spaces of delight and human scale” (Msheireb properties, 2010)<sup>22</sup>, see figures 76 and 77.

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<sup>22</sup> This analytical method is adapted from the morphological research prepared for the Msheireb development

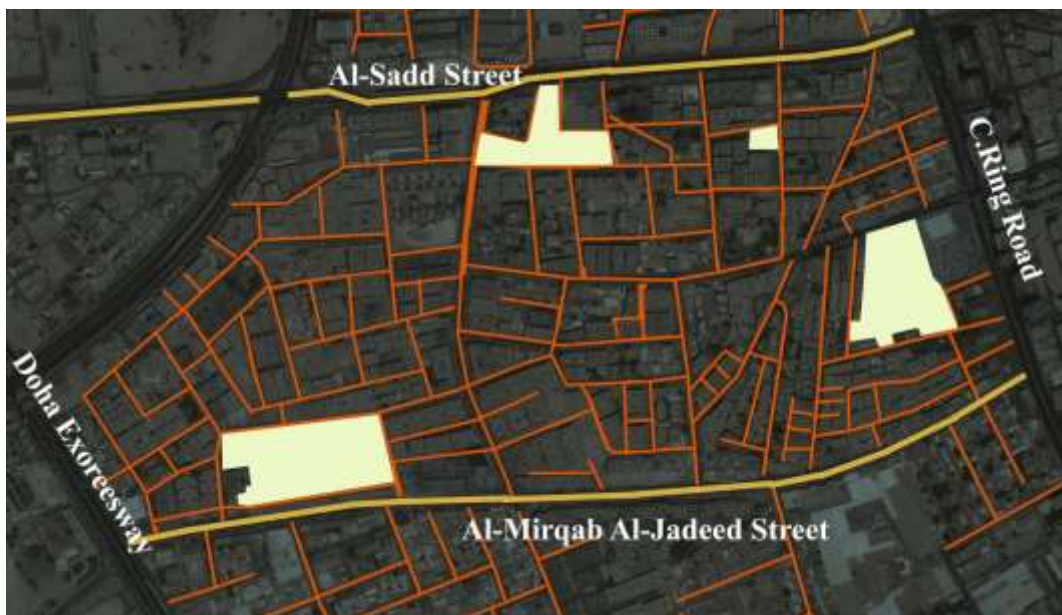
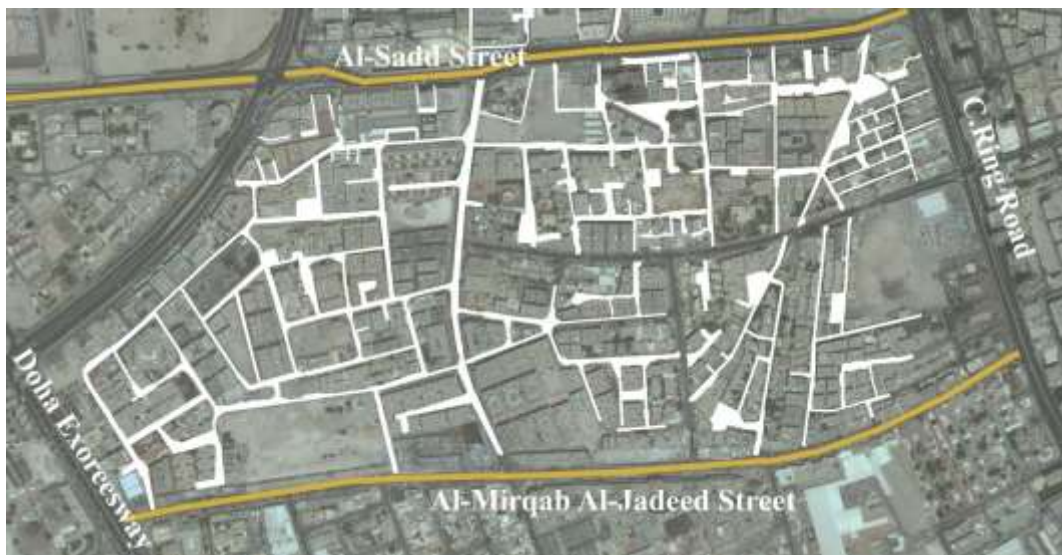


Figure 76 Informal lattice pattern and efficient planning grid maps, with indicating the vacant lands depicting the Al-Sadd area. (Source the author)

The hierarchy and overlay in the Al-Sadd and Al-Najma areas seem to be an attempt at crafting the formal grid in order to respect the local urban fabric and streets' alignments, which include the radial streets and the parallel streets to the



ring roads, which were created to follow the Doha Masterplan 1970. As discussed, these streets were built during Doha's first transformation, when the city was exposed to rapid and unplanned growth. Accordingly, it may be natural that absolute harmony between the traditional urban structure and the new spatial structure of these streets was not yet achieved.



Figure 77 Efficient planning grid map, with indicating the vacant lands depicting the Al-Najma area.

One of the major aspects noticed in these areas is the absence of a plaza, square or any open area at the end of the street which would allow for foot traffic, which generally applies to the urban structure of the whole city. In other words, there are no nodes: a point at which lines or pathways intersect or branch, a central or connecting point, or other small structure to differentiate the urban fabric. These absent public spaces are desirable as they create a pedestrian gathering area with

social activities, and they could be location for required amenities. All three streets end with motorway intersections, which were roundabouts until the last decade, a road design that is not a public space for the pedestrians of Doha. Roundabouts are created to primarily serve vehicular movement, and traffic is routed around them. The pedestrian is unable to reach the roundabout without crossing the street and no pedestrian crossing signage is visible from any angle. The plaza is an important public space and it is missing from most of the existing streets in Doha. In Middle Eastern cities, as well as in western cities, plazas constitute an integral part of the community's social life. The best examples for such concepts are successful streets such as Taksim Street in Istanbul, Turkey; Champs-Élysées avenue in Paris, France; Grafton Street in Dublin, Ireland; and La Rambla in Barcelona, Spain.

When exploring the area at a semi-micro and micro level scale, although the three streets reveal a high degree of spatial hierarchy and permeability, the quality of the streets does not work compatibly with the micro level scale of the area. For instance, the streets' width especially that of Al-Sadd Street is designed for vehicle movement and the sidewalk is not well-connected. Moreover, there is no street furniture, shade, or greenery. There are also no colonnades providing shade in many areas. However, the presence of service roads in some areas provides a sense of inner urban scale, which results in the relatively dense mass and interconnecting buildings combined with a network of spontaneous open spaces. Thus a human scale in some areas 'is somehow' unintentionally created, providing a perception of safety and comfort. A sense of identity is also nurtured, even on a

low-scale level, as the streets started to accommodate a variety of functions and activities within their commercial uses, specifically in Al-Mansoura Street.

The three streets' widths vary from 79.7 meters for Al-Sadd, with two service roads on the side, and 34 meters for Al-Mirqab. In Al-Mansoura Street, the enclosure varies considerably, possibly due to the verity of the lanes' width, the presence of service roads in some parts only, or the location of front buildings, as it is noticed that some of the street-lining buildings are at the edge of the plot, while others leave a setback, that reduces the 'unity' feature in the street, and accordingly the visual comfort.

The height of a street's buildings is the most important feature that, in coordination with the street's width, influences the street's character and spatial enclosure, and its sense of scale. The three studied streets have buildings at heights of between two and seven stories. This can provide distinctive differences in the shade cast along the streets, especially as the street wall<sup>23</sup> has gaps between buildings that are of different sizes, which add a rhythm of daylight to the inner area.

## ***5.2 Type and Organization of Commercial Activities in the Streets***

Existing land use in Al-Mansoura Street can be divided into three main categories: commercial, residential and offices. Some light industrial activities are also present such as carpentry and the joinery trade. Commercial use mainly includes

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<sup>23</sup> 'Street wall' is a term used by planners, meaning the facades of the buildings which line the street. The term used by (Moughtin, 1992)

furniture trading, tailors and cross-stitchers, and food and beverage outlets. Al-Mansoura is famous for the presence of ‘Souq Al-Haraj’, which provides goods at a price that is affordable for medium- and low-income families.

Al-Sadd Street had served as the main commercial center of the city until the millennium. The street housed the most important branches of banks, money exchange bureaus, gold and jewelry stores, retail business and fine restaurants. Blue Salon, Al Salam and Al Muftah were the main anchor shops and the most luxurious in the country. Today this street has lost its central commercial position, as new commercial centers were established elsewhere to serve emerging neighborhoods.

At the beginning of this century, most banks relocated to the new banking district at Hamad Al Kabeer Street, as a part of the evolution of the Doha central business district. The Al Salam anchor shop moved to West Bay, the new center of Doha. By that time polarization permeated most urban spheres, and today it can be seen in access to social and commercial services as the most important retail centers and modern shopping malls have sprung into existence in the area. Now Al-Sadd Street has two shopping malls located on the north side. Royal Plaza offers 105 boutiques on three retail levels, additional to family cinemas, and a food court, on the fourth level. It has a two basement floors that meet car parking requirements. This building location is part of the studied blocks in this research. The construction of the second shopping mall is complete; however, it is not yet open to the public. The street retains various types of shops, from small in size to anchor shops; the famous, ‘Al Muftah’ still occupies the same area. It is one of the few stores established at the time the street was created, which still remains today.

In recent research conducted in the area, Al-Sadd was identified by 39 percent of the respondents as a commercial center. That survey, which measured diversity in the perception of key urban nodes, found that Souq Waqif appears to be the most important urban space representing the center of Doha, receiving 57 percent of the responses, and the Aspire Zone/Villaggio tied in second position with Al-Sadd Street (Salama & Wiedmann, 2013). The study also identified the most visited areas, with Al-Sadd receiving a mere 16 percent. This result confirms what was previously discussed: that despite the positive responses of the visitors and, in spite of its perception as a city center, Al-Sadd Street has lost much of its prominence.

Al-Mirqab Al-Jadeed Street, also known unofficially as Al-Nasr Street, has, for many years, been home to an eclectic mix of small stores. The street covers an array of commercial functions, from doctors and tailors, to mobile phone shops and bakeries. It is also home to a branch of one of Doha's oldest grocery stores, Family Food Centre, and has many small and takeaway restaurants which are famous for serving 'Shawarma'. The multicultural food theme continues all along the street. Because of this, many people agree that it is their favorite place if it is compared with the unplanned developments, and it has the potential to be a hub of social life.

### **5.3 The Streets' Walk Scores**

As walkability is considered as one of the parameters with which to measure and promote the vibrancy of the streets, a website for awarding the walkability score for international public spaces was created in Chicago, United States of America,

by an advisory board which includes urban planning, environmental and technical experts from renowned institutions (Walk Score, 2012).



Figure 78 Walkability Scores in Al-Mansoura Street based on land-use categories (Walk Score, 2012)

The purpose of adapting these scores is to have preliminary indication of the walkability of the concerned areas and compare it with global examples.

The scores were measured by analyzing the routes to nearby amenities, with points being awarded based on the distance to amenities in each category. Amenities within a 5-minute walk (400 meters) are given maximum points. A decay function is used to give points to more distant amenities, with no points given after a 30-minute walking distance.

Al-Mansoura Street has a “Walk Score” of 64 out of 100 (Walk Score, 2012). This location is somewhat walkable as some errands can be accomplished on foot, figures 78-80. Nearby parks include Al-Muntazah Park, Public Nurseries Park and Airport Park.



Figure 79 Foot and bike travel time maps of Al-Mansoura Street (Walk Score, 2012)



Figure 80 Car travel time maps of Al-Mansoura Street during rush hour and without traffic (Walk Score, 2012)

Al-Sadd Street has a “Walk Score” of 65 out of 100 (Walk Score, 2012). This location is somewhat walkable as some errands can be accomplished on foot, figures 81-83. The closest park is New Al-Salata Park.



Figure 81 Walkability Scores in Al-Sadd Street based on land-use categories (Walk Score, 2012)



Figure 82 Foot and bike travel time map of Al-Sadd Street



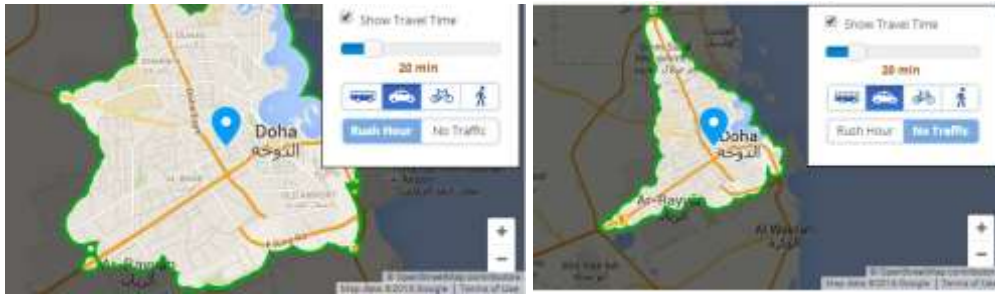


Figure 83 Car travel time map of Al-Sadd Street during rush hour and without traffic (Walk Score, 2012)

Al-Mirqab Al-Jadeed Street has a “Walk Score” of 62 out of 100. This location is somewhat walkable as some errands can be accomplished on foot, figures 84-86. Nearby parks include New Al-Salata Park, Al-Khlaifat Park and Al-Maamora Garden.



Figure 84 Walkability Scores in Al-Mirqab Street based on land-use categories (Walk Score, 2012)



Figure 85 Foot and bike travel time map of Al-Mirqab Street (Walk Score, 2012)



Figure 86 Car travel time map of Al-Mirqab Street during rush hour and without traffic (Walk Score, 2012)

It is evident from the scores that the three streets require many enhancements. However, on low scale level the land-use categories seem to have a base to build upon.

#### **5.4 Collected Data from the Survey and Analysis**

As discussed in the chapter on methodology, analysis of users' behavior and the social character of the streets can be conducted after collecting data from direct observations and user behavior mapping. This is able to provide answers to questions such as: 'How many people visiting the space?'; 'What are they doing there?'; and 'How do they use the space?'. Questions such as 'Why they are doing that?' cannot be answered by a walk-by, field observation and/or behavior mapping. Accordingly, personal interviews are conducted with the street users, be they workers, owners, residents or visitors<sup>24</sup>. Additionally, interviews with professionals are conducted in order to cross-check against other opinions and observations.

In the survey results, collected data is illustrated separately for each street, in the following tables; also the data is demonstrated as result for one case in the charts in Figures 99-103, also behavioral maps in figures 87 and 88.

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<sup>24</sup> The interviews are conducted with all street users, regardless of the selected blocks. However, they are conducted while observing the blocks by another volunteer's group.

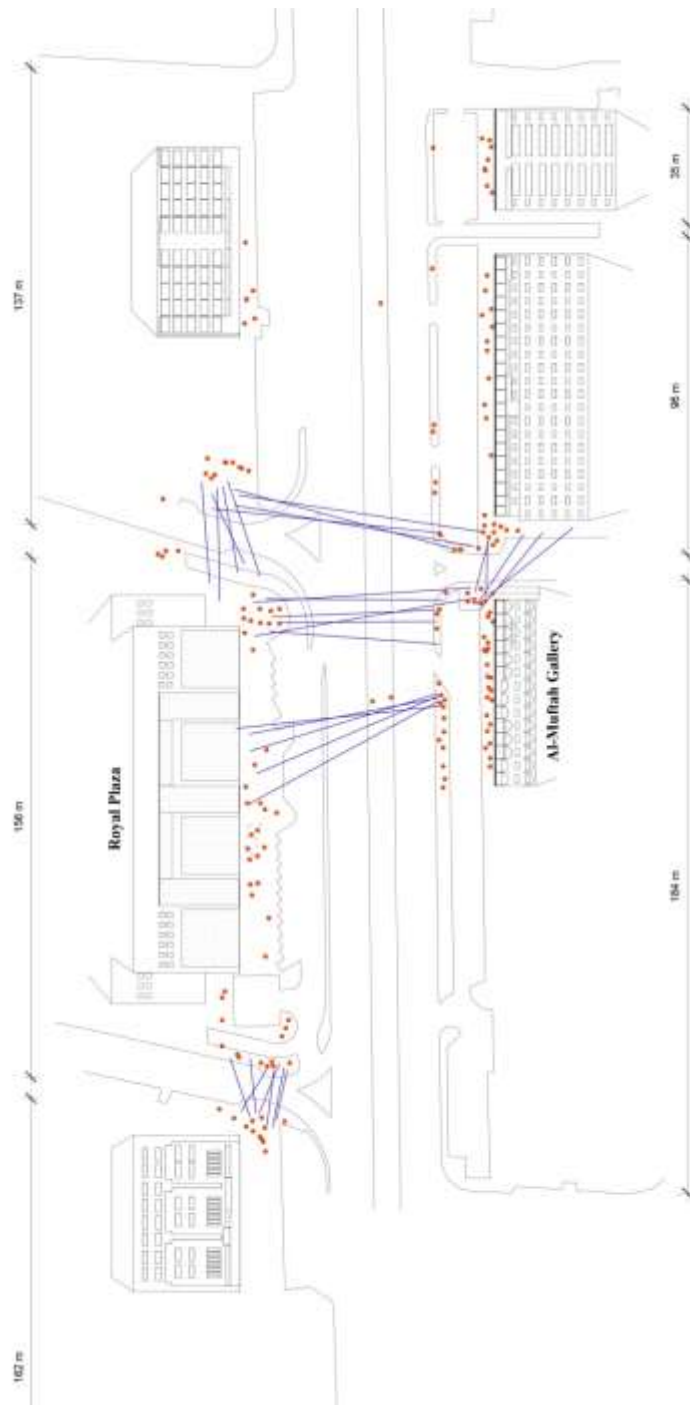


Figure 87 Behavioral map of street user's, either waiting, walking or crossing on five blocks on Al-Sadd Street. Data collected from the survey conducted on the street

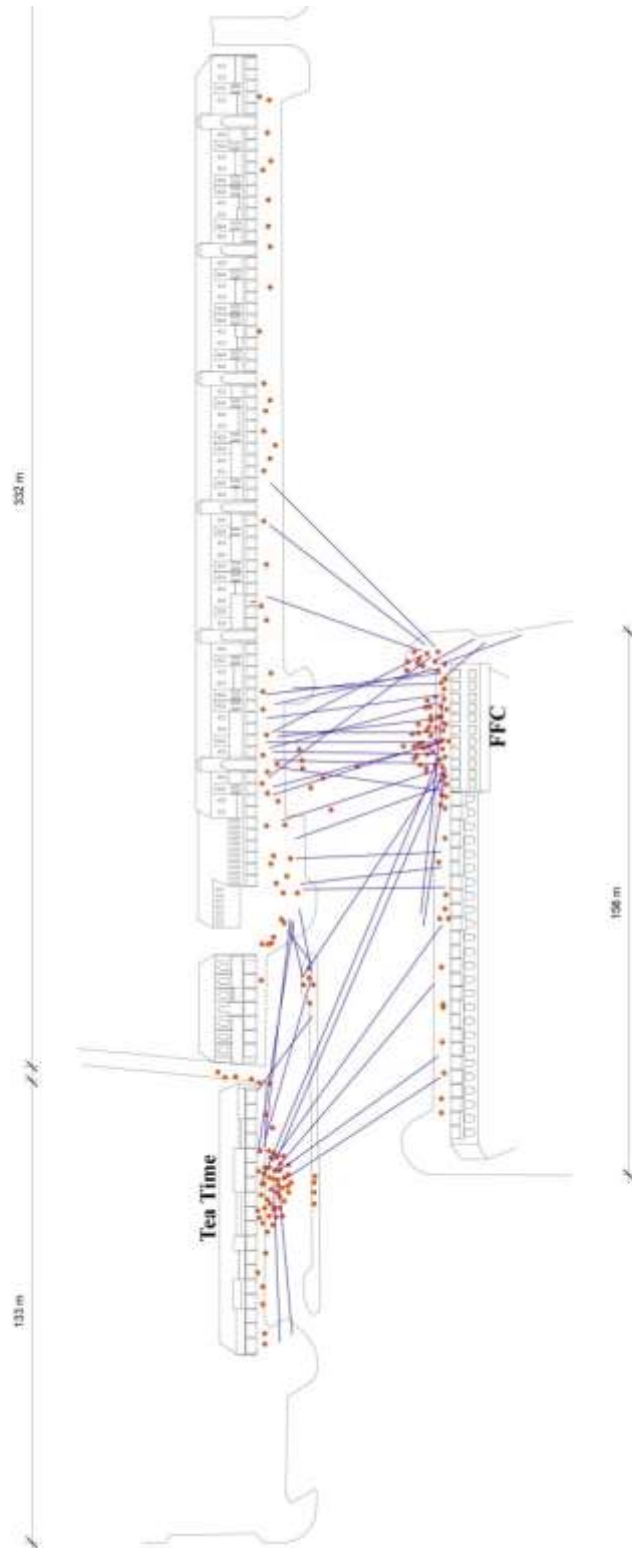


Figure 88 Behavioral map of street user's, 'walking, waiting or crossing' on four blocks on Al-Mirqab Street. Data collected from the survey conducted on the street

Table 12 Demographics of study participants

General Information	Al-Mansoura Street	Al-Sadd Street	Al-Mirqab Street
Age group			
16-20			1
20-35	5	6	12
36-55	3	3	3
56-75			1
>75 years			
Gender			
Female	1	2	1
Male	7	6	16
Marital status			
Married	7	6	10
Single		2	7
Nationality			
Qatari		2	
Non Qatari	8	6	17

With reference to the study participants' demographics, it is evident that the participants were mainly non-Qatari, married, young men. It was rare to meet females in the street. Participants attributed their absence in the streets, along with that of children and elderly people, to the poor urban quality of the walkways, suggesting that these people avoided walking in the street, even though they considered the streets to be safe.

Nearly half of the participants were visitors and they chose the area because they perceive it to be convenient and accessible; the same percentage of the users enjoy the space due to the retail mix and variety of products available.

Table 13 Street design and management, data collected from the survey conducted of the three streets

<b>Street Design and Management: Name 3 of following that you would like to keep, and 3 that you'd prefer to be changed:</b>						
	Al-Mansoura Street		Al-Sadd Street		Al-Mirqab Street	
	Change	Keep	Change	Keep	Change	Keep
Diversity of uses: (such as shopping stores, coffee shops, malls, restaurants)	1	1	2	6	1	13
The up keep of the stores		1	3	4		2
Stores that support street activities/ people interactions		3	2	5	1	5
Visual interest: displays, shop- windows, store signs, etc.		4	1	4	5	1
Landscape features: trees, flowers, etc.	1	2	2	4	9	2
Street furniture: bench, garbage, street light, public art, etc.	4	2	3	2	11	1
Lighting and Shading	4	2	1	5	1	3
Architecture quality and building features	1	1	1	2	5	1
Amenities & services	4		3	1	2	2
Impact of traffic, speed of the car, noise, air pollution, etc.	4		3	4	5	
Proximity to public transit and accessible from many directions	2	2	1	2		2
Pedestrian- Friendly Street with wide sidewalks, seating, shade & shelter	1	3	1	3	7	3
Bicycle- Friendly Street: bike lanes and bike stands	1	2	2	2	1	
Maintenance & cleanness of the street and buildings	2	3	1	5	1	9
Safety on the area/street		3		6		7

Table 14 The functionality and efficiency of the three streets as indicated by the questionnaire

<b>Street Function and Efficiency / Verifying the retail mix</b>			
	Al-Mansoura Street	Al-Sadd Street	Al-Mirqab Street
<b>For what purposes do you visit this area/Street today?</b>			
I live here	4		2
I work here	6	2	5
I am a visitor	1	4	10
Shopping		1	1
Leisure's exercises such as relaxing, walking, jogging...etc.			
Entertainment and social contact			
Eat/ drink			
Others			
<b>For how long have you lived here?</b>			
Less than 2 years	2	2	4
3 to 5 years	1		5
6 to 10 years	2	4	1
More than 10 years	2	2	2
Cannot choose / Decline to state	1		
<b>How often do you come to this street?</b>			
more than 3 times a week	7	3	8
2-3 times a week		1	3
once a week	1		4
once a month		2	
Occasionally		2	1
This is my first visit			
<b>For how long do you stay in this area?</b>			
= < 1 hour	1		5
= 1-2 hours		4	3
= 3-5 hours	1	1	3
= > 5 hours	6	3	4
<b>Why did you choose this area/street and not another one?</b>			
I feel comfortable and enjoy being here due to the street environment	1		4
It provides a lot of opportunities to make new friends and it makes social interactions easier	2	1	2
It is convenient for me to be here because of its location, accessibility, etc.	2	1	4
Stores in this area offer the best products or services		2	7
Stores in this area offer the best prices			
Stores in this area offer the most varied products or services			
others	5	4	

In the terms of evaluating and studying street design and management, thirty-four participants across the three streets were engaged in the survey via questionnaire.



60% of participants were convinced of the “maintenance and cleanliness” of all three streets. The same percentage requested that “diversity of the uses” and the “retail mix” be preserved. At the opposite end of the spectrum, 50% of the participants were dissatisfied with regards to “street furniture”; and 35% did not provide their opinion on the topic.

In conclusion, the top five rated street characteristics to preserve include “diversity of uses”, “maintenance and cleanliness”, “safety”, “store support street activities”, and “lighting and shading”. The top four characteristics identified as needing to be improved include “street furniture”, “impact of traffic/ landscape features”, “amenities and services” and “architecture quality”. The one criterion that no participant complained about is “safety”. Everybody agreed that public places in Doha are generally safe, an aspect that does not have a negative impact on the vibrancy of the streets. However, the enhancement of its contribution to the public spaces will positively influence street vibrancy.

Respondents’ most requested change was for more street furniture, which doesn’t exist in 90% of the studied area; this would include several urban physical design elements such as street benches, plantings, lamps, garbage cans, street cafés, street art, interesting design, and activities. These physical design elements can be used for any commercial street improvements.

Table 15 Accessibility and walkability parameters, data collected from the survey conducted on the three streets.

<b>Accessibility and Walkability</b>	Al-Mansoura Street	Al-Sadd Street	Al-Mirqab Street
<b>What's your means of transportation to get to this area? And within this area?</b>			
Private Car	2	3	10
Motorbike			
Bicycle			
Work Car Or Van		1	
Bus		2	
Taxi		1	2
Walk	5	1	4
<b>How much time do you usually spend on your trip to this street?</b>			
= < 15 minutes	6	1	4
= 15-30 minutes	2	1	7
= 30-60 minutes			2
= > 60 minutes		4	1
<b>How Satisfied or Dissatisfied are you with the followings?</b>			
<b>Walking in the street</b>			
Very Satisfied	2	2	6
Somewhat Satisfied	3	2	5
Neither Satisfied/dissatisfied		1	
Somewhat dissatisfied	2	1	1
Very Dissatisfied			1
<b>Condition of Sidewalks/Footpath</b>			
Very Satisfied	3	2	7
Somewhat Satisfied	2	1	7
Neither Satisfied/dissatisfied		1	1
Somewhat dissatisfied	2	1	
Very Dissatisfied			
<b>Width of Sidewalks/footpaths</b>			
Very Satisfied	3	1	2
Somewhat Satisfied	2	2	6
Neither Satisfied/dissatisfied		2	
Somewhat dissatisfied	2		5
Very Dissatisfied			1
<b>Availability of Suitable crossing points</b>			
Very Satisfied	3		3
Somewhat Satisfied	3		3
Neither Satisfied/dissatisfied		2	2
Somewhat dissatisfied	1	1	3
Very Dissatisfied		3	4
<b>Availability of suitable pedestrian routes</b>			
Very Satisfied	2		2
Somewhat Satisfied			3
Neither Satisfied/dissatisfied		2	1
Somewhat dissatisfied	4	1	3
Very Dissatisfied		3	

<b>Accessibility and Walkability</b>	Al-Mansoura Street	Al-Sadd Street	Al-Mirqab Street
<b>How Satisfied or Dissatisfied are you with the followings?</b>			
<b>Street Lighting</b>			
Very Satisfied	3		8
Somewhat Satisfied		2	4
Neither Satisfied/dissatisfied		3	
Somewhat dissatisfied	4		4
Very Dissatisfied			
<b>Shading/cooling</b>			
Very Satisfied			
Somewhat Satisfied	2		2
Neither Satisfied/dissatisfied		4	3
Somewhat dissatisfied	5		8
Very Dissatisfied		2	2
<b>Information and signage on routes</b>			
Very Satisfied	2		1
Somewhat Satisfied	3		1
Neither Satisfied/dissatisfied		3	6
Somewhat dissatisfied	2	2	6
Very Dissatisfied		1	
<b>Accessibility (e.g. dropped curbs)</b>			
Very Satisfied			
Somewhat Satisfied			2
Neither Satisfied/dissatisfied		4	7
Somewhat dissatisfied	4		3
Very Dissatisfied		1	
<b>Rest areas/break areas</b>			
Very Satisfied			
Somewhat Satisfied	2		2
Neither Satisfied/dissatisfied		1	1
Somewhat dissatisfied	3	1	6
Very Dissatisfied	1	3	5
<b>Would you walk more if better pedestrian facilities are provided?</b>			
yes	7	5	11
No		2	1

Table 16 Imageability and legibility, as per the collected data from the survey conducted on the three streets.

<b>Imageability and legibility</b>	Al-Mansoura Street	Al-Sadd Street	Al-Mirqab Street
<b>What is your feeling about the overall experience in this area/street?</b>			
Very satisfied (I'd like to spend more time here and revisit here in the future)	1		4
Satisfied (I may like to visit this area/street again in the future)	3	4	13
Neither satisfied nor dissatisfied ( I feel no differences in here compared to other area/street that I've visited)	2	3	
dissatisfied			
Very dissatisfied			
Cannot choose/ decline to specify			
<b>Is there any activity, culture event or celebration, you like to have it in this street?</b>			
Yes	2	6	4
No	4	1	10
<b>What is your best place to go in the week end, click the more close to your opinion and mention the reason (accessibility, design quality, shopping diversity &amp; pricing, entertainment...)</b>			
Souq waqif	4	2	8
Mall	4		4
Street	2		2
Corniche	4		7
Restaurant	5	3	3
Katara	3	2	4
Pearl Qatar	1	4	4
Coffee-shop		1	6
Cinema	3		2
Villagio & Aspire	4	1	2
Sports facilities/health club			
Theatre	2		
Desert			2
Resort, hotel			1
Virtual space			1
Others			

The results from the survey indicate that the top five choices as preferred places are “Souq Waqif”, “Corniche/Restaurants”, “Pearl Qatar/Katara”, “Mall”, all of which are outdoor places. The mall is the preferred place for almost 44% of the participants, including Villaggio Mall. The street as a preferred destination to visit obtained only 11%.

Table 17 Collected data from the survey of managers and salesmen in the three streets.

<b>For Managers/salesmen or workers only:</b>	Al-Mansoura Street	Al-Sadd Street	Al-Mirqab Street
<b>Do you operate shops at any other market?</b>			
Yes	2	1	3
No	2		
<b>Roughly how many customers do you expect to serve today?</b>			
less than 10	2		1
10-20	2	1	1
More than 20	1		1
<b>On average, how many customers do you serve per week?</b>			
Less than 50	2		2
50-100	2	1	
More than 100	1		1
<b>Do you have more customers in the colder months of the year?</b>			
Yes	2		1
No	1	1	1
<b>Do you find the street and public services are enough in this Street? In terms of Safety, effectiveness, accessibility, beauty and design?</b>			
Yes	2	1	2
No	3		1

The outcome of the interviews with the managers and salesmen cannot be comparable as the number of the interviewees is relatively small; however, the information collected from their responses is helpful to understand some users' attitudes.

### ***5.5 Respondents' Feedback on Shopping Malls***

“More commercial streets, less shopping malls is the need of the hour in the city. Street-facing shopping should be encouraged up to the footpath line in residential and commercial buildings for energy and space-efficient use, economic vibrancy and safety-enhancing design” (Hiranandani, 2015).

In order to understand the spiritual, emotional and physical effects of the enclosed shopping mall on the Qatari public, several questions on the topic were included

in the questionnaire and in the direct interviews with professionals, to gauge the reaction of the users to malls. Although, the trend in urban development is directing planners to promote outdoor areas, enclosed shopping areas provide the desired physical comfort required by visitors.

With regards to the participants' reactions to shopping malls, 41% consider them a destination, which, during the hot months, they visit as a family, often for as long as most of the day. Malls provide not only shopping opportunities, but allow children a comfortable space to play, and offer recreational facilities for parents, such as cinemas. The Pearl-Qatar, however, has reintroduced the concept of the cinema as a public entertainment amenity within the street, as is seen in the cinema complex built within the City Central area of The Pearl.

In contrast to the percentage of respondents who feel positively towards shopping malls, more than 50% felt that malls cause personal anxiety as they soon miss the fresh air of the outdoors and are annoyed by the noise levels resulting from poor insulation. Nonetheless, in modern-day Doha, malls are destination places, taking on added and perhaps unanticipated functions related to the climate and the society, and creating public spaces with amenities that were not previously available, such as ice-skating. The diagram in figure 89 indicates the increase of mall visitors during the day based on the time.



Figure 89 Retail mall visitors daily demographic curves (Msheireb properties, 2010)

## **5.6 Assessment of Vibrancy of the Streets and Resulting Vibrancy Index**

“Wherever people are moving, there are social and aesthetic effects to be considered” (Lynch & Hack, 1984, p. 202). Accordingly, in order to collect data on the users' reaction to the street, observation, user counts as individual and groups, and verification of their activity types, are recorded in a semi-structured format. This is a systematic method for describing what users of the streets do during a thirty-minute period of observation, throughout the hours of study from the 9:00 am to 10:00 pm. While noting that the sizes of the blocks vary between 70 meters and 300 meters, the sizes of the blocks will be not considered.

As a result, a Vibrancy Index is calculated for each of the 14 blocks by using the data collected during observation and users' duration of stay at each block. The

table 18 below features the outcome of inserting the data into the formula of the Vibrancy Index<sup>25</sup>:

Table 18 Vibrancy index for the three streets.

The Block #	The Street	Vibrancy Index	No of people in 30 minutes`	% of VI	People	Notes
1	Al-Mansoura	133	65	48%		
2	Al-Mansoura	94.5	89	49%		
3	Al-Mansoura	406	120	29%		

**Mean average of the Vibrancy Index for Al-Mansoura Street = 211.16**

1	Al-Sadd	34.5	15	43%		
2	Al-Sadd	144	46	31%		Due to the presence of Royal Plaza main entrance in this block, the people are moving in and out
3	Al-Sadd	38	18	47%		
4	Al-Sadd	141	67	47%		In front of Al-Muftah anchor shop
5	Al-Sadd	90	59	56%		

**Mean average of the Vibrancy Index for Al-Sadd Street = 89.5**

1	Al-Mirqab	611	148	24%		The area is vibrant due to the existence of Doha Clinic in two separate buildings
2	Al-Mirqab	293	73	24%		
3	Al-Mirqab	456	162	35%		At Tea-Time
4	Al-Mirqab	412	89	21%		
5	Al-Mirqab	850	244	38%		In Front of 'Family Food Center'
6	Al-Mirqab	194	61	31%		

**Mean average of the Vibrancy Index for Al-Mirqab Street = 469.33**

Observation results indicate that land uses that support outdoor activities, such as restaurants, street cafés and anchor shopping stores, greatly impact a street's Vibrancy Index. This is evident in the behavior mapping of Al-Mirqab Street, where three main places promote the vibrancy of this street: 'Family Food Center'

<sup>25</sup> The formula of the Vibrancy Index, clarified in Chapter three.



achieves the highest number of people with 244 people around this anchor shop in half an hour. The Vibrancy Index was also the highest at 850, indicating that the area around this store gains vibrancy from its presence, and that it has the potential to invest in the area and gain further vibrancy with minor enhancements. The second area awarded with a high number of users is the block housing the 'Doha Clinic' building. Counting indicated 148 people in the area within half an hour. Facing the clinic is the under-construction project 'Al-Mirqab Mall,' which is still closed to the public. 'Tea Time' is the third place in Al-Mirqab Street that obtained a score of 456 in the Vibrancy Index. Although counting indicates 162 people in the area within half an hour, which is more than 'Doha Clinic', but is scored less on the Vibrancy Index as the visitors are predominantly young men and not families. As previously discussed, higher scores are given to groups, such as families that include ladies and children, indicating that the urban quality of the area is safer, cleaner and more social. Another reason that the 'Tea Time' block did not obtain a higher Vibrancy Index score in spite of the large number of customers, is the absence of a sitting area and benches around the store. Field notes show that many customers were consuming 'Tea Time' products in their cars or taking it away, hence thus reducing their duration time in the area.

In Al-Sadd Street, the observations noted that although 'Royal Plaza' occupies a large-size block, and in spite of the disproportional mass of the building itself, the area containing the 'Al-Muftah Center' scored highest on the Vibrancy Index and in the number of people. The reason for the result is not discernible via observation, and may instead be related to the legacy of the place, as it maintains the historic sense of the area, when the Al-Salam complex existed there.

## **5.7 Discussion and Analysis of the Street's Physical and The Social Character**

This section is dedicated to providing a brief description, notes and analysis of the character, condition, situation and social reaction for each of the three streets in question; Al-Mansoura, Al-Sadd and Al-Mirqab Al-Jadeed Streets. These notes are collected during the initial site visits, from direct field observations<sup>26</sup>, behavioral mapping, questionnaires and interviews, and from secondary data. The purpose of this discussion is to comprehend the intangible factors of the street and to determine why people like one place more than another.

In this discussion, the notes are arranged under main themes which form the parameters of the examination of the street vibrancy.

### **5.7.1 The Urban Form and the Physical Attribute**

#### **5.7.1.1 Street Spatial Enclosure**

Spatial Enclosure is "the ratio of the average height of the buildings lining the street, to the width of the street" (Cherry & Nagle, 2009, p. 137)

Al-Mansoura Street is a typical one-lane street, surrounded by residential buildings with shops and businesses at ground level. The buildings in the background are of medium height and all follow the same architectural typology. They are residential blocks. In the street itself, the blocks are not very tall. They

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<sup>26</sup>The observation notes are recorded by the researcher and cross-checked with the notes of the volunteers, for the purpose of determining the reliability of the observational data.

range from 5 to 7 stories, and the street level is filled with shops and other businesses.

The first impression of Al-Sadd Street is its large scale. There are three wide traffic lanes for each side of the road (six in total), carrying traffic in two different directions, with one additional service lane and a parking lane on each side. Except for the wide central auto roadway, this could be a wonderful street, lined with trees. The six traffic lanes divide the street into three separate environments and it is difficult to experience one side from the other: wholeness is lost. Additionally, the sidewalks and blocks are wide, and buildings are tall, giving an overall feeling of openness. The street thus seems overwhelming to pedestrian users because of the large scale of its elements.

Al-Mirqab Street is perhaps one of the most vibrant streets in Qatar, thanks to the wide variety of services it offers, low product prices and the comfortable feeling of the street itself. The street is not too wide. In most areas, it is approximately 34 meters from the storefront on one side of the street to a storefront on the opposite side of the street, and the buildings and shops are not very high, presenting a varying roofs-cape. Additionally, the blocks are rather small. These elements make for a pedestrian-friendly environment.

#### **5.7.1.2 Landmarks**

The landmark in the studied area of Al-Mansoura Street is the mosque.

Al-Sadd Street presents two main landmarks: Kentucky Fried Chicken (KFC) and Opera bakery. They are both on street corners and opposite each other, separated

by the street. The Al-Muftah Center is also one of the landmarks on Al-Sadd Street.

Al-Mirqab Street presents three main landmarks: Family Food Centre, the mosque and Doha Clinic. Additionally, the mall that is being built will also become one of the street's landmarks.

#### ***5.7.1.3 Prominent Corner***

The most prominent corner on Al-Mansoura Street is the intersection with Abu Muslim Street where Al Ahli Bank and Asian's Chef Restaurant, next to the Sigma Paints roundabout, are situated.

The KFC and Opera, which are opposite each other and separated by Al-Sadd Street, are identified by many as important angles. Both are food-related and have the advantage of being situated on corners which makes them stand out.

On Al-Nasr Street, the Family Food Centre seems to be at the busiest corner, especially during the evening. It is surrounded by a variety of restaurants and cafes (such as Tea Time, Mashawi Al-Arabi and Turkey Central, among the most popular) and accommodates a large number of visitors and customers.

#### ***5.7.1.4 End Terminating View***

The east end terminating view of Al-Mansoura Street, which is where visitor arrives at Al Matar Street is the Jarir Bookstore building and Regus Doha next to it. On this side, the transition is quite overwhelming as the buildings are incomparable to the style and size of the buildings on Al-Mansoura Street. The

evolution between the two areas, which evoke two very different states of mind, is extremely abrupt. As it is limited from both sides, Al-Mansoura Street finds an opening in its depth through small perpendicular streets.

On the west end of the street, the end terminating view is Al-Muntazah Park on Rawdat Al-Khalil Street. The transition in this area is less overwhelming than that on the eastern end, but the high-traffic road creates a sharp separation with the rest of Al-Mansoura Street.

The east end terminating view of Al-Sadd Street, which is where the visitor arrives at C-Ring Road, is the tall QNB-Shoumoukh building and the La Cigale Hotel next to it. On this side the transition is not very surprising as the buildings on Al-Sadd are already comparable in size, and the commercial feel that is experienced on the street continues onto C-Ring Road. On the west end of the street, where it meets with Jawaan Street, which runs perpendicular to Al-Sadd Street, the street opens up to a large space with the local police department and fire station, which is less of a landmark than the towers on the east side when arriving at C-Ring Road. The transition here is also not overwhelming although there isn't the same continuation of businesses and buildings that can be seen on the C-Ring Road-side.

On the western end of Al-Mirqab Street one can simply see the Doha Expressway which does not give much continuity with the street on that side.

On the eastern end of the street, the end terminating view is C-Ring Road with Bayt Al-Shami restaurant on the opposite side. This end offers much more

connectivity and continuity with the street than does the western end, as it offers a wide variety of restaurants and businesses, although at a larger-scale.

#### **5.7.1.5 Diversity and Mixed-Use**

The parameters associated with each area show locally distinctive patterns of potential areas for better development. For instance, the land-use of the street helped to define the character of Al-Mansoura Street.

In Al-Sadd Street, entertainment-related uses are encouraged, such as restaurants, cafes, hotels, museums and live theatre, to create a cohesive entertainment district that is anchored at both ends by the shopping centers, Center Point and Royal Plaza.

However, as the questionnaires show, visitors find a balance of shopping and leisure between Al-Sadd and Al-Mirqab. The latter, parallel and accessible by foot from the former, offers an array of more popular eating venues and shopping stores. Even when it comes to offices, these two streets seem to enjoy a balance of minimal overlapping and a desired complementarity.

#### **5.7.1.6 Façades and Rhythm**

Good shopping streets establish a desirable rhythm among their tree plantings, arcade columns, and façade treatments that subscribe to human scale and amenity.

Although that there is no façade that stands out over the others on Al-Mansoura Street, and all elevations are being built according to one theme, the street's distinctive architectural urban form has an opportunity to be maintained. The existing architecture theme creates an effect of repetition of motifs composed of

equally large shops and windows, balanced by highly irregular heights of facades. The requirements and impact of pedestrians, cycles and vehicles should be reconciled with local context to create streets with distinctive character. Opportunities are there and should be taken to respond to, and to derive value from, relevant elements of the historic/traditional environment in creating places of distinctive character.

Given that most of the buildings on Al-Sadd Street are large, it is difficult to determine which façade stands out over the other. To users looking at the architecture of the shops and buildings, the main impression would be of 'big block buildings with reflective glass façades'. Although most of the buildings on this street follow this theme, there is no real harmony between them in terms of their state and aesthetics. Architectural and landscape detailing that would be attractive to pedestrians can help improve the appeal and identity of Al-Sadd Street. This would include storefront ornamentation, a reduction of blank walls, and the appropriate variation of scale, color and texture. Guidelines and standards based upon this principle address wall surfaces, awnings, signage, architectural treatments, and the provision of consistent setbacks and the ground floor transparency of street buildings.

The prominent façades on Al-Mirqab Street are Family Food Center and Doha Clinic, as well as the Mirqab Mall that is currently under construction, mainly due to the large size of its façades and the presence of the colonnade in its design. In terms of architecture, there isn't a distinct theme that can be observed, as the street is mainly composed of medium-sized commercial/residential buildings and shops,

with the exception of a shopping center (Family Food Center), a mall under construction (which actually presents an Oriental architectural design) and the Doha Clinic (modern reflective-glass design). In summation, the shops at street-level are in harmony with each other due to their small size and the general design of the storefronts, but there is no common architectural theme on the street.

## **5.7.2 The Imageability, Legibility and Street Scape Quality**

### **5.7.2.1 Canopies, Galleria and Colonnade**

Canopies and colonnades are essential to emphasize sidewalk activity by providing shade, defining spaces, accentuating architecture, creating inviting spaces, screening unattractive areas, unifying the streetscape and providing a positive visual experience. The absences of these features were noticed in the three studied streets.

With the exception of the entrances to certain businesses and buildings, no canopies or shading exist on any of the three streets. This lack of shade-providing structure seems to be of concern to the visitors of the three streets. Many of the surveys were conducted in broad daylight with visitors who happened to be waiting for a taxi or a bus, or simply enjoying their take-away meal or hot beverage. The lack of shade significantly reduces comfort during summer days, and encourages excessive car use. The lack of canopies and gallerias may also discourage residents from visiting their streets.

### **5.7.2.2 Accessibility**

Accessibility standards in Al-Mansoura Street are poor as there are no observable sidewalk ramps for wheelchairs or baby strollers, and the sidewalks aren't wide



enough to allow for such users to make use of them. Even though a number of cyclists were observed on this street, there are no bicycle lanes or accommodation for bicycle users.

Sidewalks are quite wide in Al-Sadd Street, but they do not accommodate any ramps. It is also difficult to cross from one side of Al-Sadd Street to the other or even to cross the perpendicular streets because of the amount and speed of vehicle traffic that travels through the area. There is not much connectivity and continuity between the different blocks on this street. An employee at a sweets store located on the corner of an intersection of Al-Sadd and a perpendicular street, complained about frequent, yet non-severe, car accidents due to poor pedestrian accessibility. Another regular visitor, a resident of the street, noted that many cyclists have difficulties crossing the street because of the high sidewalks.

Accessibility standards in Al-Mirqab Street are also poor, as there is not much accessibility for wheelchairs and strollers, which are unable to move from block to block without much difficulty. Additionally, sidewalks are not wide enough in certain areas of the street, while elsewhere they may be too wide for passersby. Blocks are not too long and the road is only two lanes (both ways included) which make it easy to cross the road even though there are no actual crosswalks.

### **5.7.2.3 Walkability/Sidewalks**

The sidewalks' width in the streets ranges from 1 meter as a minimum, to 9 meters as a maximum. A minimum sidewalk width of 4 meters is necessary for comfortable pedestrian flow on a commercial street; however, a somewhat wider

dimension is recommended to accommodate streetscape amenities such as trees and benches.

In terms of walkability, Al-Mansoura is usually crowded with pedestrians and the sidewalks are mostly well-sized, although they narrow down in certain areas to less than a meter wide which is probably due to a lack of planning and design. This appears to not been too much of a problem for users in navigating the street. None of those surveyed expressed any discontent with this issue. Overall, sidewalks are in a good state as most respondents pointed out, with a few neglected spaces that create discontinuity. Regular users of the street indicated areas where sidewalks are large enough and well equipped to accommodate benches for a group of friends on a break from work. However, in other places, walking fluidity is disturbed by car signage or merchandise temporarily stored in front of a shop.

In terms of walkability in Al-Sadd Street, it has wide sidewalks which are by no means detrimental to street vibrancy in the sense that more people have space to walk and wander in the street. Unfortunately, because of the combination of the wide sidewalks and lanes of the street, the large buildings and the lack of continuity, the impression of the street is hostile and less comfortable than would be a smaller-scale street that has a sense of connectivity between blocks and buildings/shops. People seem to be in a constant hurry on this street, and it was difficult finding individuals willing to take the survey. As the number of visitors have recently decreased, the street seems to be emptier. Of the few who are not simply crossing or walking down the street, many are waiting for a taxi or the bus.

The walkability on Al-Nasr is quite good, and a lot of people enjoy the walk on this street. However, several construction sites on the strip are detrimental to the walking experience and the vibrancy in those particular areas, and act as obstacles separating the street into two separate sections.

#### **5.7.2.4 Lighting/Street Furniture/Greenery/Shading**

The lighting on Al-Mansoura Street is quite dim and certain areas were not well-lit. This could pose problems in terms of safety and comfort on the street at night. On the other hand, certain areas which presented a high concentration of shops and businesses, were well-lit. As a popular area, the street lacked street furniture and presented no greenery; people could be observed sitting on the side of the street and on shop ledges. No areas of shading are available on Al-Mansoura Street.

In Al-Sadd Street, many areas are vibrant and crowded during the day, but deserted in the evening. However, the lighting on the street is convenient and appropriate for a commercial street. On the other hand, there is a significant lack of street furniture especially given the size of the sidewalks and the amount of available space. There are no places for people to sit and rest, meet and interact, people watch, or simply wait for the taxi. A vastly disproportionate amount of space is allocated to parking cars than to public seating spaces. The street also lacks greenery on the sidewalks where people walk, which would provide shade during hot days and make the street more aesthetically pleasing. The biggest element of greenery is the strip of trees separating the two roadways, but this seems to be for the big scale of the street as it gives it more enclosure. Indeed,

given the difficult access from one side of the street to the other, the trees may become more of a visual obstacle to speeding cars.

Al-Mirqab Street is well-lit at night and presents a variety of lighting styles and colors coming from the different shops, businesses and restaurants. This high variety of mostly fluorescent or flashy lights adds vitality to the street, according to one of the survey respondents. Another respondent considered that the lighting lacks uniformity and is hostile to the eyes. The main concern of visitors here, however, is that there is not much street furniture or greenery across the whole street, and the lack of available space on the sidewalks in most parts does not allow for such elements. There is not much shading on the street either

#### **5.7.2.5 Signage**

The purpose of signage is to provide identification for businesses and to assist pedestrians and vehicular traffic in locating their destination without dominating the visual appearance of the area. Because the goal of this research is to create a more pedestrian-friendly environment that contributes to the vibrancy, the signs should be sized and oriented to persons on foot.

The signage on Al-Mansoura and Al-Sadd Streets is somewhat adequate as they are mostly clear at intersections with other streets. Indications to particular places such as mosques or squares, which could ease direction for pedestrians, is however generally lacking.

The signage on Al-Mirqab Street is not very apparent which would make it somewhat difficult for a newcomer to navigate. Nevertheless, it is easy to find

yourself on this street thanks to the landmarks (Family Food Center, Doha Clinic) and its location between C-Ring Road and the Doha Expressway.

#### **5.7.2.6 Bus stops and Public Transportation**

There is no public transportation provided on Al-Mansoura Street. It is also noted that there is not much room for taxis to collect or deliver passengers, the street being far too narrow and lacking parking space.

It is noted that public transportation is available on Al-Sadd Street, specifically buses. Adequate bus stops are also available, although the lack of street furniture and shading for people to sit while waiting for the bus makes it less appealing to customers, especially when they have to wait standing in the heat. It is also noted that there is no appropriate space for taxis to stop, which is a necessity on a street that has a large number of lanes.

There are no bus stops or elements of public transportation on Al-Mirqab Street, probably for the simple reason that there is not much space available to accommodate their implementation.

There are, however, peak times for bus flow. One user noted that after 5pm, it is difficult to find a taxi or bus as this is after peak-time for pedestrians, and a crucial hour for car users entering from the C-Ring Road.

#### **5.7.2.7 Street Traffic and Parking**

Parallel parking stalls are approximately 2.75 meters to 3 meters. Parking is not an issue in cities such as Barcelona or Singapore, when private cars are not the main form of transportation. However, in Doha, the private car, especially a large one,

is the favorite, if only, means of transportation. Accordingly, solving traffic jams is the most important problematic issue in the city's commercial streets.

One of the main issues the users of Al-Mansoura Street face is its vehicle traffic and lack of available parking. Vehicles can be seen stopping in traffic lanes (double-parked) because of this. Connections to a wider network of street patterns should be fully integrated with surrounding networks to provide flexibility and accommodate changes in built and social environments, including that of integrating parking. Parking in front of stores should be accommodated by a variety of means to provide flexibility and lessen visual impact, while streets layouts should accommodate emergency and service vehicles without compromising a positive sense of place.

Traffic in Al-Sadd Street is controlled by traffic signals which are helpful for people trying to cross the road, although there is still a lack of crosswalks throughout the street. Additionally, the amount and size of lanes on the road make for high-speed vehicle traffic commuting through Al-Sadd, and this does not contribute to a pedestrian-friendly environment. Conversely, there is plenty of parking available for people traveling by car.

Probably the biggest issue of Al-Mirqab Street is its vehicle traffic and lack of available parking. In addition to the many pedestrians that visit this street, there are also a number of people that travel here with their cars and even relax in their cars while enjoying a tea or a sandwich in the evening.

### **5.7.3 Compatibility with Social Paradigm**

#### **5.7.3.1 Territoriality and the Transition between public, semi-public, semi-private and private spaces**

The transition between the public and the private on Al-Mansoura Street is subtle, and it could even be said that the whole street is semi-public and semi-private. The shops and restaurants/cafes at ground level have an open design and allow for people to shop/eat/drink without compromising their ability to interact with other people on the street.

When observing the transition between private and public on Al-Sadd Street, it can be said that the distinction is very clear and rather abrupt. In other words, there is not much semi-public and semi-private space which would make for a smoother transition between the private and public.

The transition between the public and the private on Al-Mirqab Street is subtle, and it could even be said that the whole street is semi-public and semi-private. The shops and restaurants/cafes at ground level have an open design and allow for people to shop/eat/drink without compromising their ability to interact with other people on the street. Certain food and beverage businesses, such as Tea Time and Mashawi Al-Arabi, do not have much of a seating area, either inside or outside, but people still remain in front of the shops and enjoy their tea or sandwiches with good company.

#### **5.7.3.2 Users setting and the active social behavior**

In some areas, particularly in Al-Mansoura Street and Al-Mirqab Street, shop owners encroach on the walkway under the pretext of making adjustments to their

shops, claiming an extra sitting area for themselves or their clients by extending the shop to gain more space, thus changing the street's profile without conforming to building rules. This results in temporary or permanent structures that later may transform into shops, or add new decorative elements, leading to inconsistencies in the spatial characteristics and form of the streetscape.



Figure 90 Sitting on the steps, corner at Al-Mansoura Street



Figure 91 Sitting on the pavement, Al-Sadd Street.



Others may use the public sidewalk in front of their properties for car parking and without municipal control; these cars not only block pedestrians' passage and obstruct the view and pedestrian route, but also affect the street uniformity, see figures 90-95.

Al-Mirqab Al-Jadeed or Al-Nassr Street, also known by some as 'the sunset strip', is a street with its own special atmosphere and mix of Arabic and Asian influences, a vivid place where simply watching people pass by becomes a joy. This encourages the youth to visit the area frequently, and it should be recorded that even the volunteer researchers enjoyed questioning people in that street and stayed there for longer time.

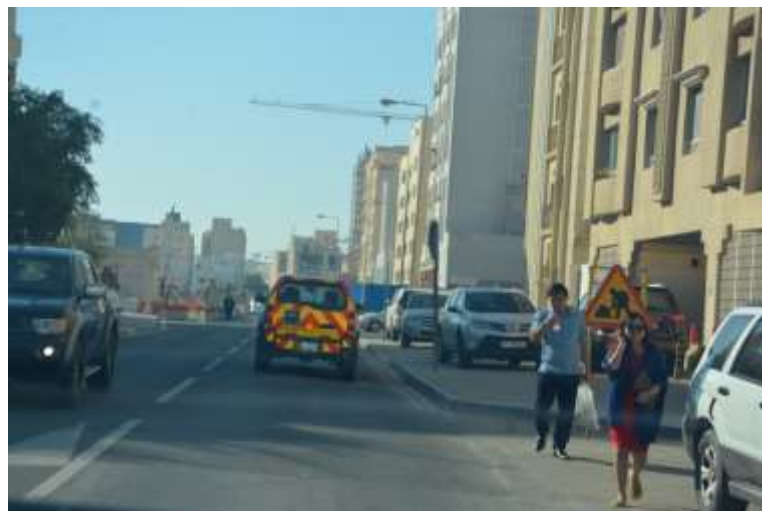


Figure 92 The discontinuous walkway in Al-Mansoura Street



Figure 93 Using the sidewalk to expand the territory of the shop, Al-Mansoura Street



Figure 94 Using the sidewalk for private seating, Al-Mansoura Street



Figure 95 Using the side walk, Al-Mansoura Street.

## **5.8 Comparative Analysis of Vibrancy of streets, Across the Streets Studied**

The advantage of having multiple case studies is that they allow one to identify commonalities and similarities among them. This was essential to satisfy the inductive purpose of the study. In order to investigate differences in the usage pattern of the streets, the analysis focused on the physical attribute of nine areas; three of which were selected from successful global examples. The investigation into the usage patterns of the streets reveals that many physical attributes can be implemented in the local areas. The outcome of examining the City Central of Pearl Qatar development added new concepts for understanding public spaces. The street does not have any background or urban connectivity with the Doha context; however, it appears that it has succeeded. With references to the studied

areas, it was clear that the street management and design is an important element for street success. Pearl Qatar and Souq Waqif developments, together with Doha's shopping malls, reveal that privatizing the projects can include many essential parameters that contribute to street success, including the retail mix, walkability, street maintenance, walkways design and unity.

The width of the Champs-Élysées Avenue is comparable with the street width of Al-Sadd Street; also, both of them have the high brand names formulating their retail mix. However, some physical elements are part of the main character of the Parisian avenue, such as the terraced cafes and street furniture are missing in Al-Sadd street. Enhancing Al-Sadd-Street with these physical elements can have a great impact on the street. Many features of international successful streets can be implemented in the local streets with considering the local social character. On the other hand, it is important to implement the 'pedestrianization' concept in some areas in the studied streets of Doha. Streets' pedestrianization can guarantee safety for users, and also solve the car parking problem. That will encourage the users to establish more social activities in the street as the area will be dedicated to them. However overall the Doha streets field study, it was noticed that the 'drop off' concept is the key feature for the users' movement, particularly the local people. Although, the research is aiming for increasing the pedestrian flow, developing the shopping streets should prioritize complying with the users' needs. Having this issue compared with the Ramblas De Catalonia Street, the best walkable street in the world which can generate a suitable solution. Providing an access for the people to reach the shop by car can be from small cart-way, without separating the visual communication between pedestrian in the center area and the shops front,

also, the drop off can be provided from the back or side street without disturbing the pedestrian. As a result, the parallel streets can be upgraded accordingly to receive more traffic and also to provide car parking buildings.

### ***5.9 Summary of the results***

- The morphological examination of the three streets reveals a pattern of gradual change and transformation that is in tandem with the new developments in Doha
- On an urban scale, Al-Sadd Street acts as through street for the city, while Al-Mirqab and Al-Mansoura Streets remain generally “local”. This continuity and discontinuity with a larger network of streets and neighborhoods is essential to understanding how the hierarchy between Al-Sadd and Al-Mirqab Streets are able to transition importance to the streets such as Al-Kenana Street, which is important due to its location between Al-Sadd and Al-Mirqab, adding value for both streets.
- The observations revealed that people interacted with several characteristics of the streets, and certain qualities supported their activities and behaviors on the streets
- The distinctive character of these streets, rooted in their history and topography, traces of which are extant as structuring elements in the urban fabric, should be reinterpreted and reinforced within the city of Doha.

## **6. CHAPTER SIX: FINDINGS AND CONCLUSION**

“A few generalizations about the interaction of man and place can be made. But most findings are partial or refer to specific situations.” (Lynch & Hack, 1984, p. 67)

In understanding the importance of the concept of a given space to a wider process, a number of factors must be taken into account. The social factor and the cultural background are among the most prominent factors which have an impact on the revitalization of the space. The findings of this research generate suggestions and recommendations, which can be implemented in the commercial streets of Doha, with specific adaptation to each individual case. However, the objective of this research has been achieved by examining the vibrancy of the commercial streets in Doha, examining the problem and suggesting suitable tools for measuring that vibrancy. Consequently, the suggestions and recommendations for promoting street vibrancy have been established and must be developed over the time and place.

### **6.1 *Findings Analysis***

The visual survey and observation, together with the questionnaire, reveal how the case study streets have opportunities to be successful vibrant streets. The survey demonstrates the streets as a destination. As was clear in the result of the survey, the top five rated street characteristics to preserve include “diversity of uses”, “maintenance and cleanliness”, “safety”, “store support street activities”, and

“lighting and shading”. The top four characteristics identified as needing to be improved include “street furniture”, “impact of traffic/ landscape features”, “amenities and services” and “architecture quality”. The one criterion that no participant complained about is “safety”.

Accordingly, this shows that people tend to choose settings that are meaningful to them as places of community: sites that offer a sense of belonging, comfort and pleasure through macro-scale principles, various amenities and micro-scale physical features. The elements of morphology quality, physical quality, management and land-use quality and social quality are extremely significant to the users of the environment.

The findings of this study indicate that the following factors are instrumental in creating a livable, desirable and meaningful space for the users of a commercial street: places that have special meanings for the individuals; elements of the interactive environment, such as land-use and street management; the physical form and setting, such as the morphology and integration with the urban fabric; and the urban quality of the street and its design. Accordingly, these elements promote vibrancy in the streets.

Moreover, these findings have implications for the planning of urban design, streets and public spaces, and for economic development policies.

## 6.2 Conclusion

Vibrant commercial streets are vital economic and social components of a city, as they provide the community with a space for public interaction and recreation, and shops that offer a diverse set of retail experiences and services.

Today, urban commercial streets in Qatar face many challenges due to increased urbanization and vehicular traffic, as well as a lack of adequate planning and design. Many have not undergone renovation works in some time. These streets are, nevertheless, still successful, mainly due to their integration with the urban fabric and its social activities. These old vibrant streets compete with newer commercial places that offer comfort and quality public spaces, but are usually disconnected from the city's main body. This results in a decrease in the positive urban vibrancy of these public and commercial spaces.

Vibrant urban space is defined as a viable place for the community in which its members find a sense of authenticity, of connection with other members, and where they can seek involvement with multiple activities (Findlay & Sparks, 2009). It is an integrated set of activities that seeks to reverse economic, social, environmental and physical decline to achieve lasting improvement (Welsh Government, 2013, March).

The research examined the notion of vibrancy of a commercial street from this point of view. Urban vibrancy is the result of physical and socio-economic factors. It is measured through three main aspects: the integration of the street with its environment; its physical attributes, which include the street design and management; and its socio-economic dimension.





Figure 96 Theoretical basis of the study. Source the author

Thus, by analyzing and examining the vibrancy of Doha’s commercial streets, the research identified the parameters that have an impact on the vibrancy of a street, and then proposed suggestions and recommendations to revitalize the important economic and social spaces of Doha, to build on their already-established reputation. These recommendations incorporated international and regional best practices, which can be implemented and applied to Qatar by adapting them to the local context and culture.

Furthermore, the research identified the vibrant commercial streets as the areas that attract people. These streets are characterized by many features, such as the mixed urban life, diversity in the retail and land-use, terraced cafés and restaurants, pleasant and shaded sidewalks, plazas, etcetera. They are shopping and walkable streets, and are the public places where people stroll, stop, sit or gather. They are the places where people feel comfortable because they are not confronted with excessive traffic volumes, noise and pollution. Vibrant streets

also possess a “critical mass” of people – and this mix of people, retail and land-use mean that the streets are active throughout the day. More activity on the street improves security by increasing “eyes on the street,” meaning that more people are out on the streets deterring crime or danger.

The research creates measurement tools and an urban vibrancy index based on scholarly studies and theoretical analysis, which can be used for contributing urban vibrancy in the public spaces.

The research concludes that the studied streets are vibrant and vital due to the following:

- The morphological examination of the three streets reveals a pattern of gradual change and transformation that is in tandem with the new developments in Doha.
- The social paradigm shows that the users are satisfied with the streets in general, and that the existing streets are still considered meaningful urban places for the individuals. However, the users’ perception of the commercial streets is affected by overall quality of urban planning and design elements. Analysis of the data from street observations and surveys suggests that elements which contribute to making a vibrant commercial street in the three studied streets could be controlled by street management. These can be categorized into two main aspects: land-use characteristics, and urban physical design.

1. Land-use characteristics: stores such as street cafés, restaurants and shopping stores that support outdoor activities play a significant role in

making vibrant commercial streets in the three streets, particularly in Al-Mirqab Street.

2. Commercial streets vibrancy is influenced by micro-level and macro-level urban physical design elements. Therefore, enhancement of the urban quality in both micro- and macro-scales will promote the street vibrancy.

## **7. CHAPTER SEVEN: RECOMMENDATIONS FOR ACTION**

### **7.1 Recommendations**

For years, Doha's design and approval process has chosen traffic-oriented space. The emphasis on favoring air-conditioning in buildings has directed the city design to focus on indoor spaces. Now to facilitate a change to a livable urban city, which has become the standard for building cities across the developed world, all government agencies, developers and users should partner to build a foundation for this city. Planners and urban designers, coordinating with architects and engineers, have an important role to play in creating this dynamism. They design the public realms and arrange the streets, blocks and landscape areas. They design the open spaces, and determine the quality of the streets and pavements, and the intensity and mix of land-uses. A successful city provides high quality amenities through the design of its infrastructure, and creates vital urban spaces which coordinate with other disciplines.

Starting with the streets, the implementation of positive street concepts and design generates new patterns of evidence and hypotheses for further research, providing an integral link with other disciplines such as architecture, landscape science, and economic and social studies. This encourages transdisciplinary collaborations to build robust knowledge and problem-solving capacity. For instance, the design approach of the urban planner and architect are important, as the architect coordinates with the urban planner and the landscaper, and starts designing from the street, not from the building. The architect must also design pleasant terraces,

entrances and ground floors that integrate with the outdoor area, to make attractive streets with unique character.

On the other hand, the private sector must become more aware of developing the urban places. The planners have to provide them with an expanding body of information that will educate them about key aspects of this type of development, such as the mixture and concentration of uses, appropriate block size in the urban core, street dimensions, and the size and the form of public space. The expected result is more cohesive urban spaces that reflect a unique collaboration and create places that are culturally distinct from one another. In other words, places in which people love to live.

All these elements must work together to build a 'Street Design Manual'. This manual should include policies and design standards to be used by all parties, such as the city planning authorities, municipalities, design and construction firms, environmental protection organizations, economic development corporations, developers, communities, private alliances and individual users.

The Street Design Manual should ensure that work on city streets prioritizes safety and livability, and reflects a context-sensitive and complete-streets approach. It should address both street geometry and street materials, and should enhance the public, multi-dimensional character of the local streetscape (Gehl Architects, 2007). Its guidelines should also promote greener streets with more trees and shrubbery, which will not only beautify and cool the city, but will also help to improve quality of life and enhance social interaction. In order to create this manual, the examining tools and the vibrancy index should be adapted and used to examining the vibrancy of the city's streets.

The greatest hurdle that this work has to overcome in Doha and similar cities is the largely private nature of the cities. Rapid and unstable transformation of these cities is critical, particularly in the light of its impact on the social factor (including culture). It is important to educate the authorized professionals in the public and private sectors to work in unison, and complementary to a revived public interest and a vision of what forms that might take. This will, inevitably, be a lengthy process.

An analysis of the territory and morphology quality of Doha sets the city as primarily a private city. Most of its open space, most of its buildings, indeed most of the powers that shape it are private or semi-private. This determines the initiative steps for improving its urban quality. The city's objectives must be to reassert the primacy of public space, public transportation and the public interest, by using the traditional elements of Doha (streets, plazas and promenades), and organizing them in traditional ways along with the data, around the radial axes and within the grid of the city.

The result will be that the streets become a place for people, and the public places shift from being the residue of private development to being the dominant landmarks in the city.

This is not a new urban design direction. It is an integral concept of the existing master-plan of Doha. The idea is to re-establish zoning and land use, taking into consideration the hierarchy of the streets, the streets' classification, the changing in the land use and the distribution of the new public places within the districts. It is not enough to focus on the formal issues only. One must also pay attention to

the process through which those forms might be implemented. Moreover, the urban planning should pay attention to the needs of the people who will eventually live in the spaces created by these plans. Naturally, the main imperative should be to ensure that the new orientation pays close attention to the questions of implementation and livability.

The recommendation is to break the larger blocks into smaller parcels, so that a greater number of small developers can become involved. However, during research interviews, some planners and stakeholders said that “the larger the pieces of property, the greater the departure in urban form”. The smaller parcels may attract a number of smaller development teams, but some could handle projects of even moderate size, and so a few large development companies could have several parcels. Indeed, it should be well controlled by producing a suitable building regulation by urban planners to preserve the desired diversity, requiring that developers use different architects and materials on adjacent sites. This will provide variety and attractive places to visit, and will create places to meet all users’ senses and styles. Additionally, as many scholars such as, J. Jacob recommended, the small blocks can help to create permeability and transparency in the street. This will provide attractive urban public places.

Regarding the traffic problem, Moughtin (1992) advocates changing the “land-use policies which increase, through dispersal, the time and cost of travel” (Moughtin, 1992, p. 70). Accordingly, the travel distance will be shorter, as a result of the change in land-use distribution. This will save cost and time, and will decrease pollution, also contributing to street vibrancy. It is a call for calming traffic and

reducing congestion, simply by reducing the number of cars on the roads, without enforcing change in people's attitude and lifestyle. Today, people in Arabian Gulf cities such as Doha like to have their own private car, and use it as their main mode of transportation. For instance, the initial design in the Pearl-Qatar development was to designate all city central areas as pedestrian. However, that was met with dismay by visitors and the development management was obliged to change the character of the street design to meet their requirement. Nevertheless, this has not affected the street vibrancy, as the area became full of life and the large mass of pedestrian traffic enforced motorists to reduce their speeds. This example provides evidence that it is not always possible to take international best practice and merely replicate it in other places. It is always recommended to adapt these concepts to match the users' needs where they will be implemented.

Consequently, some notes and recommendations for revitalizing, planning and designing the case study streets and Doha's commercial streets in general are mentioned in the followings suggestions. These suggestions can provide a foundation for revitalization or building new commercial streets. However, for implementation, extensive detailed studies, such as traffic impact, environmental assessment, infrastructure assessment, cost/benefit analysis, etcetera of the site would need to be conducted.

Pedestrianization and traffic mode: It will be possible bring back the old viability of commercial streets in Doha but with a different vision. The old commercial streets shall serve as a focal point for the surrounding community, offering a broad range of goods & services, entertainment, arts and cultural uses. In order to



achieve that, the planners are requested to build upon the heritage theme focusing on significant heritage assets, encouraging people to use the public mode of transportation, and fostering a pedestrian-oriented streetscape while not excluding the automobile. For instance, in Al-Mirqab Street, it is recommended to re-design the road to be in one way, as it was noticed that the heavy traffic was from the east to the west side. Consequently, that will have an impact on the hierarchy of the parallel streets. However, the pedestrianization in Al-Sadd and Al-Mansoura streets can be implemented in specific areas, see figure 97, as it was observed in the studied block areas, the crossing was higher than other areas, these areas can re-designed to be for pedestrian only by creating subway<sup>27</sup>, that will help also to arrange underground car-parking.

With this vision in mind, and noting that these commercial corridors are not homogeneous, plans should be proposed to develop specific districts. These districts shall be identified to recognize themselves more to revitalization and recreate an entertainment and recreation flavor, which is blended with the strong sense of culture on the corridor street. The entertainment and recreational functions offered in the districts will play a large role in creating a fun, active and exciting atmosphere on the corridor street. Additionally, by encouraging a mix of retail, services, office uses, entertainment uses and housing, the revitalization should help generate concentrations of pedestrian activity to support both transit and an active street environment.

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<sup>27</sup> It is planned in both streets to build the underground metro station, however, data couldn't be obtained, and the suggestion of the researcher is to re-design the infrastructure by incorporating the connection between the proposed underground car parking and the metro station.

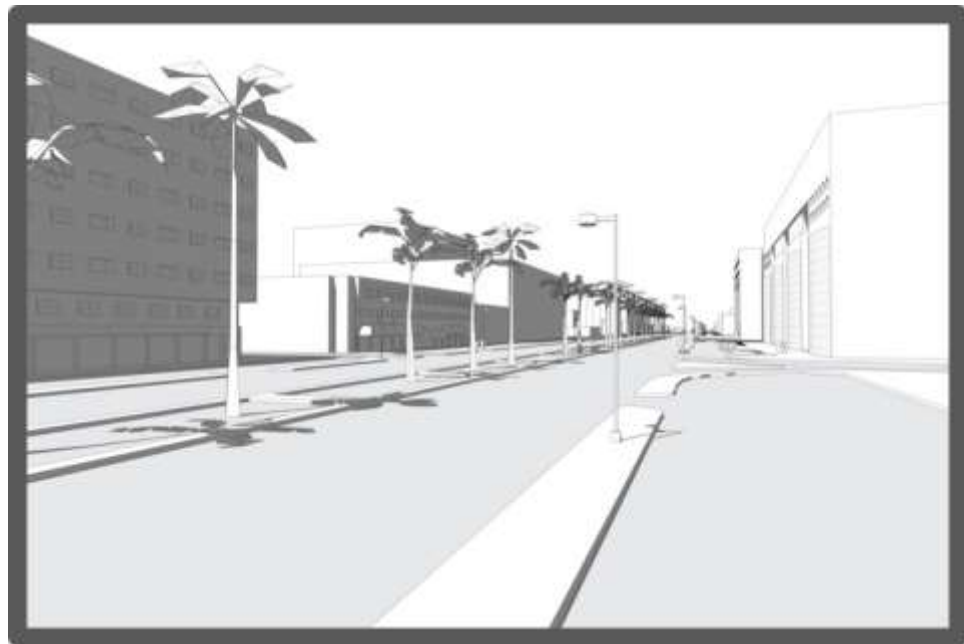


Figure 97 Imagining collage sketch shows Al-Sadd Street with having a pedestrian plaza by having a tunnel for vehicle movement

Architectural Elements and Landscaping: One of the key goals of Al-Mansoura Street revitalization is to preserve architecturally significant buildings by ensuring appropriate rehabilitation of those buildings that contribute to revitalization of commercial street corridor. Provide guidelines for appropriate street scape design that will be complementary to the principles of revitalization and enhance the old commercial street corridor. Also, it is recommended to ensure that any potential infill projects maintain the old urban form of the street, by reinforcing the existing street wall, and maintaining the existing architectural theme, indeed the architectural elements can help to reinforce the sense of place and establishing community identity. The community character can be conveyed by a whole range of urban architectural elements that integrate the buildings with the public spaces: residences of all sizes and scale; commercial, public, and institutional buildings; street-cross sections; street furniture and graphics and informal activities such as street markets and fairs. The preservation guidelines and principles should address the traditional architectural and streetscape features that indicate neighborhood's multiethnic heritage i.e. second-floor balconies, ornate cornice and tile designs, street lamps, wide paved sidewalks, decorative shop windows, colonnades, and contribute to the vibrancy and balance of multicultural heritage with the goals and needs of current residents.

Architectural and landscape details that can be attractive to pedestrians can help to improve the appeal and identity of Al-Sadd Street. These details include storefront ornamentation, reduction of blank walls, and the appropriate variation of scale, color and texture. Guidelines and standards based upon these principles address wall surfaces, awnings, signage, architectural treatments, and the provision of

consistent setbacks and ground floor transparency of street buildings. The visual appearance of the street can be enhanced by the use of quality paving materials, attention to design details, limitations on signs on walk sides (size, location, number) and increased landscaping and maintenance. In Al-Mirqab Street, the use of a variety of vegetation such as trees, shrubs, perennials and annuals, as well as other materials such as rocks, water, sculpture or patterned and textured paving materials, landscaping will unify streetscape and provides a positive visual experience. Landscape features will also emphasize sidewalk activity by providing shade, and street furniture, defining spaces, accentuating architecture, create inviting spaces and accordingly the sense of belonging.

Maintenance: Maintenance of streets of Doha requires improvement on their management. The proper maintenance of existing street structures will contribute to the overall attractiveness and vibrancy of the streets. Building and paved streets materials should be properly cleaned and maintained as a primary means of preserving important building and street features and preventing their deterioration. Proper drainage should be provided to prevent water damaging surfaces. Appropriate methods prescribed in recognized preservation guidelines should be employed.

Street Management: public-private partnerships and other forms of cooperation between the private sector and local and national governments can run the street's open public areas management & operations more efficiently. The partnership allows or encourages businesses, community groups, cooperatives, private

voluntary associations, small enterprises, and other non-governmental organizations to offer social services.

Public dissatisfaction with the quality and coverage of government-provided services and the slowness with which national and local governments extend infrastructure often pressure them to seek more private sector participation. Experience suggests that many goods and services for which people can pay can be delivered more efficiently by involving the private sector which often brings stronger managerial capacity, access to new technology, and specialized skills that governments cannot afford to develop on their own.

Economic globalization is also creating strong pressures on private firms to respond more flexibly to rapidly changing world markets and to gain access to modern technologies and facilitate public activities.

Forming public-private partnerships to assume functions that were formerly public sector responsibilities has potential benefits for both citizens and governments. Partnership can increase competition and efficiency in service provision, expand coverage, and reduce delivery costs. Best examples for privatizing the projects in Doha, can be found in Pearl Qatar and Souq Waqif.

## **7.2 Future Research and Concluding Remarks**

It is recommended to conduct a survey and produce an analysis and perceptual study in the public spaces while establishing the design. Spatial features and behavior are then linked in both time and space. Analyzing and designing the physical layout of a place, while studying the social behavior, can convey both basic and comprehensive information about an environment, enabling the researcher to record changes, suggestions and decisions concurrently. Accordingly, the research endorses developing examining tools, and applying new ones based on the case. However, the new tools can be based on the ones used in this research.

It is important to note that the study did not address environmental issues such as climate and its impact on the public spaces design and its users. All surveys were conducted in good weather. However, the questionnaire and the observations included notes about the architecture features and the vegetation that are needed to mitigate Doha's harsh climate. Hence, the environmental aspect is recommended to be taken into account in future studies.

Moreover, the virtual relationships between the users and places, and between the individual user and the place are not considered in this research. These virtual links should be studied in future research as they impact the urban planning notions.

Furthermore, the study has limitations and could be more accurate if the secondary data and the information which was collected for the three streets were

comparable. It is noted that some information was available on one street but impossible to find on another. Some limitations occurred due to difficulties in interviewing people in some areas. Moreover, no information on future plans for new developments could be obtained from the Ministry of Municipality and Urban Planning as most of these data are confidential.

Finally, the study focused on three major streets in Doha, and aimed to investigate attitudes and experiences in Doha's commercial streets. It dealt with the behavior of the people who used them and their attitudes during the contemporary events and concentrated on the spatial dimensions of the selected streets. The data was collected and analyzed in the three streets, and recommendations as a result of the findings can be adapted and implemented in all commercial streets in the cities of the Middle East. However, despite high levels of similarity in the existing contexts in the territory, these findings cannot be generalized, and the suggestions do not necessarily apply in different areas at any time. Accordingly, this study should not be considered to be complete. It is highly recommended to repeat these studies recurrently and to investigate the implemented design while conducting the study.

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## 9. APPENDICES

### Appendix A: Street Typologies

#### Street Typologies, Characterization of Street Networks and Street

##### Classification Systems

Table 19 AIA Street Classification System, (The American Institute of Architects, 2007)

<b>Classification</b>	<b>Description</b>
<b>Highway</b>	A long-distance, medium-speed vehicular corridor that traverses open country. A highway should be relatively free of intersection, driveways and adjacent buildings; otherwise it becomes a strip, which interferes with traffic flow
<b>Boulevard</b>	A long-distance, medium-speed vehicular corridor that traverses an urbanized area. It is usually lined by parallel parking, wide sidewalks, or side medians planted with trees. Buildings uniformly line the edges.
<b>Avenue</b>	A short-distance, medium-speed connector that traverses an urban area. Unlike a boulevard, its axis is terminated by a civic building or monument. An avenue may be conceived as an extremely elongated square.
<b>Drive</b>	An edge between an urban and natural corridor, usually along a waterfront, park or promontory. One side of the drive has the urban character of a boulevard, with sidewalk and buildings, while the other has the qualities of a parkway, with naturalistic planting and rural detailing.
<b>Street</b>	A small-scale, low-speed connector. Streets provide frontage for higher-density buildings such as offices, shops, apartment buildings, and row-houses. A street is urban in character, with raised curbs, closed drainage, wide sidewalks, parallel parking, trees in individual planting areas, and buildings aligned on short setbacks.
<b>Road</b>	A small-scale, low-speed connector. Roads provide frontage for low-density buildings such as houses. A road tends to be rural in character with open curbs, optional parking, continuous planting, narrow sidewalks, and buildings well set back. The rural road has no curbs and is lined with pathways, irregular tree planting and uncoordinated building setbacks.
<b>Alley</b>	A narrow access route serving the rear of buildings on a street. Alleys have no sidewalks, landscaping, or building setbacks. Alleys are used by trucks and must accommodate dumpsters. Alleys are usually paved to their edges, with center drainage via an inverted crown.
<b>Lane</b>	A narrow access route behind houses on a road. Lanes are rural in character, with a narrow strip of paving at the center or no paving. While lanes may not be necessary with front loading garages, they are still useful for accommodating utility runs, enhancing the privacy of rear yards, and providing play areas for children.
<b>Passage</b>	A very narrow, pedestrian-only connector cutting between buildings. Passages provide shortcuts through long blocks or connect rear parking areas with street frontage. Passages may be roofed over and lined by shops.
<b>Path</b>	A very narrow pedestrian and bicycle connector traversing a park or the open country. Paths should emerge from the sidewalk network. Bicycle paths are necessary along highway but are not required to supplement boulevards, streets, and roads, where slower traffic allows sharing of the vehicular lanes.

Table 20 Illustrates the 24 potential combinations of street types, (Abu Dhabi Urban Planning Council, 2012)

Street Family	Transport Capacity		Land Use Context					
	Vehicle Priority	Travel Lanes	City 7 stories+	Town 3-6 stories	Commercial 1-3 Stories	Residential 1-3 stories	Industrial	No Active Frontage
Boulevard	High	3+3	City Boulevard	Town Boulevard	Commercial Boulevard	Residential Boulevard	Industrial Boulevard	General Boulevard
Avenue	Medium	2+2	City Avenue	Town Avenue	Commercial Avenue	Residential Avenue	Industrial Avenue	General Avenue
Street	Low	1+1	City Street	Town Street	Commercial Street	Residential Street	Industrial Street	General Street
Access Lane	Very Low	1+1 1 Shared	City Access	Town Access	Commercial Access	Residential Access	Industrial Access	General Access

**Appendix B: Vibrancy Parameters matrix**

**Measuring the Streets' Vibrancy' Parameters**

Table 21 Illustrates the Streets' Vibrancy' Parameters, (Street Sense, 2014)

<b>Element</b>	<b>Relevance</b>	<b>Explanation</b>
Year Established		
Average Side Walk Width		
Number of Blocks in Length		
Public Open Space		
Street Scape Design Program		
Located with a Business Improvement District (BID)		
Supported by a Merchant's Association or Non-Profit Organization		
Located within an Historic District		
Underground Electrical and Telephone Lines		
Residential Population Within 1/2 Mile		
Median Household Income Within 1/2 Mile		
Daytime Population Within 1/4 Mile		
Average Retail Rents		
Conditions of Property Ownership		
Retail Vacancy Rate		
Average Daily Traffic Count		
Walk Score		
Estimated Vehicles Per Household Within 1/4 Mile		
Number of Bus Routes		
Subway/Light-Rail/Streetcar stops		
Public Parking Facilities		

## Appendix C: Survey Forms

### The Forms of the Survey and the observations:

Form 01: The first long questionnaire, it is shortened based on the pilot study

#### **EXAMINING THE VIBRANCY OF URBAN COMMERCIAL STREETS IN DOHA CITY**

Department of Architecture and Urban Planning- DAUP, College of Engineering, Qatar University,  
Master of Science in Urban Planning and Design, By Dalal Farhat HARB, Jan.2015

### Visitors/residents/managers/salesmen and Workers survey

Urban vibrancy can be indicated by several factors, including the pedestrian flow in the public spaces at all times, the performance of the commercial developments, the streets' capacity to attract ongoing investment, and future developments, and the number of cultural events and celebrations per year. This survey aims to gather the relevant information required to assist the vibrancy in three commercial streets in Doha city. They are Al-Mansoura Street, Al-Sadd Street and Al-Mirqab Al-Jadeed Street. This Questionnaire is designed to be instrumental in the scientific study of examining the vibrancy of three commercial streets in Doha city. There will be volunteers' groups who have an idea about the project; they will be assigned to help in this interview/ questionnaire by filling it by their selves, basing on their observations, impressions, and people's reply. The questions designed in a way that they are consistent with the ethical rules of the human subject. And to achieve the required goals, there are some questions can be answered from the impressions, no need to be asked, that is to protect the participants. And no picture can be taken for participants and no need to record their names. This questionnaire is for research use, so the information given will be kept confidential and will not be published. The streets will be divided into equal block segments between the volunteers and the researcher to cover all areas. The volunteers are chosen carefully, they are undergraduate students and have been lived in Doha for long time ago; and they are willing to assist. Site visits to collect these data will be organized in several times per day to investigate the employees' behavior when they join their work, and visitors' behavior when they start to come and also at the late hours of the evening. Moreover, an additional investigation should be done during the weekend. The concept is to understand the public perception of walking, shopping and using the commercial streets in order to get the maximum benefit of the viability of the streets. The result of this questionnaire should indicate the people's level of satisfaction and give the idea about their needs in their areas.

Kindly, tick the answer that is closer to his/her opinion, thank you for your cooperation

<b>General Information</b>		
• Gender	<input type="radio"/> Female	<input type="radio"/> Male
• Age group		
<input type="radio"/> 16- 20	<input type="radio"/> 20-35	<input type="radio"/> 36-55
<input type="radio"/> 56-75	<input type="radio"/> > 75 years	<input type="radio"/> cannot choose / Decline to state
• Marital Status		
• Number of Children & age/s		
• Nationality		

<b>Street Capacity</b>		
<ul style="list-style-type: none"> <li>Do you live/work in this area/ Neighborhood?</li> </ul>		
<input type="radio"/> I live here	<input type="radio"/> I work here	<input type="radio"/> I live and work in this area
<input type="radio"/> I am a visitor (I don't live nor work in this area)	<input type="radio"/> cannot choose/ Decline to state	
<ul style="list-style-type: none"> <li>If you live/work in this neighborhood, how long have you lived/worked here?</li> </ul>		
<input type="radio"/> Less than 2 years	<input type="radio"/> 3 to 5 years	<input type="radio"/> 6 to 10 years
<input type="radio"/> More than 10 years	<input type="radio"/> cannot choose / Decline to state	
<ul style="list-style-type: none"> <li>If your answer was no in the previous question, how often do you visit this area/street?</li> </ul>		
<input type="radio"/> more than 3 times a week	<input type="radio"/> 2-3 times a week	<input type="radio"/> once a week
<input type="radio"/> once a month	<input type="radio"/> Occasionally	<input type="radio"/> this is my first visit
<input type="radio"/> cannot choose/ decline to state		
<ul style="list-style-type: none"> <li>How long are you planning to stay in this area/street today (or usually)?</li> </ul>		
<input type="radio"/> = < 1 hour	<input type="radio"/> = 1-2 hours	<input type="radio"/> = 3-5 hours
<input type="radio"/> = > 5 hours	<input type="radio"/> cannot choose/Decline to state	

<b>Street Function and Efficiency / Verifying the retail mix</b>				
<ul style="list-style-type: none"> <li>For what purposes do you visit this area/ Street today?</li> </ul>				
<input type="radio"/> Shopping	<input type="radio"/> Leisure's exercises such as relaxing, walking, jogging.... etc.	<input type="radio"/> Entertainment and social contact		
<input type="radio"/> Eat/ drink	<input type="radio"/> others -----	<input type="radio"/> cannot choose/ Decline to state		
<ul style="list-style-type: none"> <li>Why did you choose this area/ street for the purpose mentioned above?</li> </ul>				
<input type="radio"/> I feel comfortable and enjoy being here due to the street environment	<input type="radio"/> it provides a lot of opportunities to make new friends and it makes social interactions easier	<input type="radio"/> it is convenient for me to be here because of its location, accessibility, etc.		
<input type="radio"/> Stores in this area offer the best deal or service	<input type="radio"/> others -----	<input type="radio"/> cannot choose/ Decline to state		
<ul style="list-style-type: none"> <li>Did you find it easy to access the shops (examples: parking, public transportation... etc.?)</li> </ul>				
<input type="radio"/> Yes, why? -----		<input type="radio"/> No, why? -----		
click the best suitable answer				
<ul style="list-style-type: none"> <li>The product prices in this street are:</li> </ul>	<input type="radio"/> Low	<input type="radio"/> Moderate	<input type="radio"/> High	<input type="radio"/> Cannot specify/Decline to state
<ul style="list-style-type: none"> <li>Do you think</li> </ul>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/> Cannot specify/Decline to state	

that this street has limited or a variation of products?	Limited	Variation	
<ul style="list-style-type: none"> <li>If this shop which you visited wasn't here, would you come to other shops in this area anyway?</li> </ul>			
<input type="radio"/> yes	<input type="radio"/> No	<input type="radio"/> I don't know	
<ul style="list-style-type: none"> <li>Do you have a favorite place (e.g. Anchor, stores, spots, physical design, etc.) on this area/street?</li> </ul>			
<input type="radio"/> yes	<input type="radio"/> No	<input type="radio"/> cannot choose/ decline to state	
<ul style="list-style-type: none"> <li>If yes list them and please explain the reason that makes them your favorite?</li> </ul>			
-----			
-----			

<b>Street Design and Management</b>
<ul style="list-style-type: none"> <li>What are the 3 most important things about this area/street you would want to preserve? indicate the order by numbers</li> </ul>
<input type="radio"/> Diversity of uses (such as shopping stores, coffee shops, malls, restaurants)
<input type="radio"/> The up keep of the stores
<input type="radio"/> Stores that support street activities/ people interactions
<input type="radio"/> Architecture quality and building features
<input type="radio"/> Visual interest: displays, shop- windows, store signs, etc.
<input type="radio"/> landscape features: trees, flowers, etc.
<input type="radio"/> street furniture: bench, garbage, street light, public art, etc.
<input type="radio"/> impact of traffic, speed of the car, noise, air pollution, etc.
<input type="radio"/> proximity to public transit and accessible from many directions
<input type="radio"/> pedestrian- Friendly Street with wide sidewalks, seating, shade & shelter
<input type="radio"/> bicycle- Friendly Street: bike lanes and bike stands
<input type="radio"/> maintenance of the street and buildings
<input type="radio"/> safety on the area/street
<input type="radio"/> others -----
<input type="radio"/> cannot choose/ decline to state
<ul style="list-style-type: none"> <li>What are the 3 most important things you would like to change or add on this block/street? indicate the order by numbers</li> </ul>
<input type="radio"/> Diversity of uses (such as shopping stores, coffee shops, malls, restaurants)
<input type="radio"/> the up keep of the stores
<input type="radio"/> stores that support street activities/ people interactions
<input type="radio"/> Architecture quality and building features
<input type="radio"/> Visual interest: displays, shop- windows, store signs, etc.
<input type="radio"/> landscape features: trees, flowers, etc.
<input type="radio"/> street furniture: bench, garbage, street light, public art, etc.
<input type="radio"/> impact of traffic, speed of the car, noise, air pollution, etc.
<input type="radio"/> proximity to public transit and accessible from many directions
<input type="radio"/> pedestrian- Friendly Street with wide sidewalks, seating, shade & shelter
<input type="radio"/> bicycle- Friendly Street: bike lanes and bike stands
<input type="radio"/> maintenance of the street and buildings

O safety on the area/street	
O others -----	
O cannot choose/ decline to state	
• How do you find the street maintenance?	
• How do you find the street cleaning?	
• How do you find the street services?	
• How do you find the street amenities?	
• How do you find the street lighting?	
• To where you think can you go if you have any problem in the street?	
• What do you believe have been the top three keys to make this street the best? Provide any suggestions for improving this area/street in the future	
-----	
-----	
-----	

<b>Accessibility and Walkability</b>					
• How often do you travel by to come to this area					
	Daily	Weekly	Monthly	Less Frequentl y	Never
Private Car					
Work Car or Van					
Taxi					
Bus					
Motorbike					
Bicycle					
Walk					
Other, specify					
• How long have you spent on this your trip today to the street					
O = < 15 minutes		O = 15-30 minutes		O = 30-60 minutes	
O = > 60 minutes					
• How would you rate your experience of walking in this street in general?					
O Very Satisfied		O Somewhat Satisfied		O Neither Satisfied nor dissatisfied	
O somewhat dissatisfied		O Very Dissatisfied		O cannot choose/ decline to specify	
• How Satisfied or Dissatisfied are you with the followings?					
	Very Satisfie d	Somewha t Satisfie d	Neither Satisfied/dissatisfi ed	Somewha t dissatisfie d	Very Dissatisfie d
Condition of Sidewalks/Footpath					

Width of Sidewalks/footpaths					
Availability of Suitable crossing points					
Availability of suitable pedestrian routes					
Street Lighting					
Shading/cooling					
Information and signage on routes					
Accessibility (e.g. dropped curbs)					
Rest areas/break areas					
<ul style="list-style-type: none"> <li>• Would you walk more if better pedestrian facilities are provided?</li> </ul>					
O Yes		O No		O cannot choose/ decline to specify	
<ul style="list-style-type: none"> <li>• Do you have other comments, questions or concerns?</li> </ul>				-----	

<b>Imageability and legibility</b>		
<ul style="list-style-type: none"> <li>• What is your feeling about the overall experience in this area/street?</li> </ul>		
O Very satisfied (I'd like to spend more time here and revisit here in the future)		
O satisfied (I may like to visit this area/street again in the future)		
O Neither satisfied nor dissatisfied ( I feel no differences in here compared to other area/street that I've visited		
O dissatisfied	O very dissatisfied	O cannot choose/decline to state
<ul style="list-style-type: none"> <li>• What is the first thing comes to your mind when someone asks you to meet at this street?</li> </ul>		
-----		
<ul style="list-style-type: none"> <li>• Is there any activity, culture event or celebration, you like to have it in this street?</li> </ul>		
O yes , what -----		O No, why -----
<ul style="list-style-type: none"> <li>• What three things would you do or suggest differently, developing this street?</li> </ul>		
-----		
--		

<b>Vibrancy and Public Spaces in Doha City</b>	
<ul style="list-style-type: none"> <li>• Why do you think are the public areas so important?</li> </ul>	
-----	
<ul style="list-style-type: none"> <li>• Why do you think you preferred one place rather than other one?</li> </ul>	
-----	
<ul style="list-style-type: none"> <li>• Do you consider the street the third place you can go (beside the house and the</li> </ul>	



work)?		
-----		
<ul style="list-style-type: none"> <li>Do you prefer the controlled environment area to visit, such as the Shopping Malls? Why?</li> </ul>		
-----		
<ul style="list-style-type: none"> <li>What is your best place to go in the week end, click the closer point to your opinion and mention the reason:</li> </ul>		
O Souq waqif -----	O Mall ----- -----	O Street -----
O Corniche -----	O Restaurant ----- -----	O katara -----
O Qatar Pearl -----	O coffee shop ----- -----	O Cinema -----
O Villagio & Aspire	O Sports facilities ----- -----	O Theater ----- ---
O Desert -----	O Resort, hotel ----- -----	O health Club ----- ---
O virtual space -----	O others ----- -	O cannot choose/ decline to state
<ul style="list-style-type: none"> <li>Is the place you choose is close to your house?</li> </ul>	O Yes	O No
<ul style="list-style-type: none"> <li>Which transportation mode usually you use to travel there?</li> </ul>	-----	

**For Managers/salesmen or workers only who are working in the shops in the three streets:**

- Type of Shop:

-----

- Do you operate shops at any other market? If so, where?

O No O Yes, Where -----

- Including you, how many people work in this shop?

O Full-time

O Part-time

- How long have you been operation this shop?

- What three things would help to improve this market profit?

a- -----

b- -----

c- -----

- Roughly how many customers do you expect to serve today?

- less than 10
- 10-20
- More than 20
- On average, how many customers do you serve per week?
- Less than 50
- 50-100
- More than 100
- Do you have more customers in the colder months of the year? If yes, how many more customers would you expect to serve then?
- Less than 50
- 50 -100
- More than 100
- Do you have aspiration for the expansion of your business?
- yes, where is the preferred location -----  No, why? -----
- Do you find the street and public services are enough in this Street? In terms of Safety, effectiveness, accessibility, beauty and design?
- Yes
- I do not know
- No, what is missing? -----

**Form 02A: Physical Observations:**

**Macro Level**

<b>Street</b>	<b>Block</b>	<b>Arch. Theme Score 1-10</b>	<b>Visual Enclosure Score 1-10</b>	<b>Retail mix Score 1-10</b>	<b>Community Services 1-10</b>	<b>Vacant Plots</b>	<b>Connectivity</b>
<b>Al- Mansoura Street</b>	1						
	2						
	3						
<b>Al-Sadd Street</b>	1						
	2						
	3						
	4						
	5						
<b>Al Mirqab Al Jadeed Street</b>	1						
	2						
	3						
	4						
	5						
	6						

**Comments**

**Form 02B: Physical Observations:**

**Semi Macro Level**

<b>Street</b>	<b>Bloc k</b>	<b>Walkabilit y Score 1- 10</b>	<b>Legibilit y Score 1- 10</b>	<b>Accessibilit y 1-10</b>	<b>Street Maintenanc e 1-10</b>	<b>Aesthetic, Cleanlines s 1-10</b>
<b>Al- Mansour a Street</b>	1					
	2					
	3					
<b>Al-Sadd Street</b>	1					
	2					
	3					
	4					
	5					
<b>Al Mirqab Al Jadeed Street</b>	1					
	2					
	3					
	4					
	5					
	6					

Comments

**Form 02C: Physical Observations:**

**Micro Level**

<b>Street</b>	<b>Block</b>	<b>Green &amp;Landscape Score 1-10</b>	<b>Shade, Arcade Score 1- 10</b>	<b>Street Furniture 1-10</b>	<b>Cross Walk Score 1-10</b>	<b>Shop Façade Score 1-10</b>
<b>Al- Mansoura Street</b>	1					
	2					
	3					
<b>Al-Sadd Street</b>	1					
	2					
	3					
	4					
	5					
<b>Al-Mirqab Al-Jadeed Street</b>	1					
	2					
	3					
	4					
	5					
	6					

**Comments:**

Form 03: Adjusted questionnaire form based on the pilot study

**EXAMINING THE VIBRANCY OF URBN COMMERCIAL STREETS IN DOHA CITY**

Department of Architecture and Urban Planning- DAUP, College of Engineering, Qatar University,  
Master of Science in Urban Planning and Design, By Dalal Farhat HARB, Jan.2015

**Visitors/residents/managers/salesmen and Workers survey**

Urban vibrancy can be indicated by several factors, including the pedestrian flow in the public spaces at all times, the performance of the commercial developments, the streets' capacity to attract ongoing investment, and future developments, and the number of cultural events and celebrations per year. This survey aims to gather the relevant information required to assist the vibrancy in three commercial streets in Doha city. They are Al-Mansoura Street, Al-Sadd Street and Al-Mirqab Al-Jadeed Street. This Questionnaire is designed to be instrumental in the scientific study of examining the vibrancy of three commercial streets in Doha city. There will be volunteers' groups who have an idea about the project; they will be assigned to help in this interview/ questionnaire by filling it by their selves, basing on their observations, impressions, and people's reply. The questions designed in a way that they are consistent with the ethical rules of the human subject. And to achieve the required goals, there are some questions can be answered from the impressions, no need to be asked, that is to protect the participants. And no picture can be taken for participants and no need to record their names. This questionnaire is for research use, so the information given will be kept confidential and will not be published. The streets will be divided into equal block segments between the volunteers and the researcher to cover all areas. The volunteers are chosen carefully, they are undergraduate students and have been lived in Doha for long time ago; and they are willing to assist. Site visits to collect these data will be organized in several times per day to investigate the employees' behavior when they join their work, and visitors' behavior when they start to come and also at the late hours of the evening. Moreover, an additional investigation should be done during the weekend. The concept is to understand the public perception of walking, shopping and using the commercial streets in order to get the maximum benefit of the viability of the streets. The result of this questionnaire should indicate the people's level of satisfaction and give the idea about their needs in their areas.

Kindly, tick the answer that is closer to his/her opinion, thank you for your cooperation

<b>General Information</b>		
• <b>Gender</b>	<input type="radio"/> Female	<input type="radio"/> Male
• <b>Age group</b>		
<input type="radio"/> 16- 20	<input type="radio"/> 36-55	<input type="radio"/> 56-75
<input type="radio"/> 20-35	<input type="radio"/> > 75 years	<input type="radio"/> cannot choose / decline to state
• <b>Marital Status</b>		
• <b>Number of Children &amp; age/s</b>		
• <b>Nationality</b>		

<b>Street Function and Efficiency / Verifying the retail mix</b>		
• <b>For what purposes do you visit this area/Street today?</b>		
<input type="radio"/> I live here	<input type="radio"/> I work here	<input type="radio"/> I am a visitor
<input type="radio"/> Shopping	<input type="radio"/> Leisure's exercises such as relaxing,	<input type="radio"/> Entertainment and social contact

	walking, jogging.... etc.	
<input type="radio"/> Eat/ drink	<input type="radio"/> others -----	<input type="radio"/> cannot choose/ Decline to state
<b>• For how long have you lived here?</b>		
<input type="radio"/> Less than 2 years	<input type="radio"/> 3 to 5 years	<input type="radio"/> 6 to 10 years
<input type="radio"/> More than 10 years	<input type="radio"/> cannot choose / Decline to state	
<b>• How often do you come to this street?</b>		
<input type="radio"/> more than 3 times a week	<input type="radio"/> 2-3 times a week	<input type="radio"/> once a week
<input type="radio"/> once a month	<input type="radio"/> Occasionally	<input type="radio"/> this is my first visit
<input type="radio"/> cannot choose/ decline to state		
<b>• For how long do you stay in this area?</b>		
<input type="radio"/> = < 1 hour	<input type="radio"/> = 1-2 hours	<input type="radio"/> = 3-5 hours
<input type="radio"/> = > 5 hours	<input type="radio"/> cannot choose/Decline to state	

<b>• Why did you choose this area/street and not another one?</b>		
<input type="radio"/> I feel comfortable and enjoy being here due to the street environment	<input type="radio"/> it provides a lot of opportunities to make new friends and it makes social interactions easier	<input type="radio"/> it is convenient for me to be here because of its location, accessibility, etc.
<input type="radio"/> Stores in this area offer the best products or services	<input type="radio"/> Stores in this area offer the best prices	<input type="radio"/> Stores in this area offer the most varied products or services
<input type="radio"/> cannot choose/decline to state	<input type="radio"/> others -----	

<b>Street Design and Management</b>		
<b>• Name 3 of following that you would like to keep, and 3 that you'd prefer to be changed.</b>		
	<b>Change (unsatisfied)</b>	<b>Keep (satisfied)</b>
<input type="radio"/> Diversity of uses (such as shopping stores, coffee shops, malls, restaurants)		
<input type="radio"/> The up keep of the stores		
<input type="radio"/> Stores that support street activities/ people interactions		
<input type="radio"/> Visual interest: displays, shop- windows,		

store signs, etc.		
<input type="checkbox"/> Landscape features: trees, flowers, etc.		
<input type="checkbox"/> Street furniture: bench, garbage, street light, public art, etc.		
<input type="checkbox"/> Lighting and Shading		
<input type="checkbox"/> Architecture quality and building features		
<input type="checkbox"/> Amenities & services		
<input type="checkbox"/> Impact of traffic, speed of the car, noise, air pollution, etc.		
<input type="checkbox"/> Proximity to public transit and accessible from many directions		
<input type="checkbox"/> Pedestrian- Friendly Street with wide sidewalks, seating, shade & shelter		
<input type="checkbox"/> Bicycle- Friendly Street: bike lanes and bike stands		
<input type="checkbox"/> Maintenance & cleanness of the street and buildings		
<input type="checkbox"/> Safety on the area/street		
<b>Where would you go in case of any complain?</b>		
<input type="checkbox"/> others -----		
<input type="checkbox"/> cannot choose/ decline to state		

<b>Accessibility and Walkability</b>		
<ul style="list-style-type: none"> <li><b>What's your means of transportation to get to this area? And within this area?</b></li> </ul>		
<input type="checkbox"/> Private Car	<input type="checkbox"/> Motorbike	<input type="checkbox"/> Bicycle
<input type="checkbox"/> Work Car or Van	<input type="checkbox"/> Bus	<input type="checkbox"/> Taxi
<input type="checkbox"/> Walk	<input type="checkbox"/> Other, specify:	
<ul style="list-style-type: none"> <li><b>How much time do you usually spend on your trip to this street?</b></li> </ul>		
<input type="checkbox"/> = < 15 minutes	<input type="checkbox"/> = 15-30 minutes	<input type="checkbox"/> = 30-60 minutes
<input type="checkbox"/> = > 60 minutes		
<ul style="list-style-type: none"> <li><b>How Satisfied or Dissatisfied are you with the followings?</b></li> </ul>		



	Very Satisfied	Somewhat Satisfied	Neither Satisfied/dissatisfied	Somewhat dissatisfied	Very Dissatisfied
Walking in this street					
Condition of Sidewalks/Footpath					
Width of Sidewalks/footpaths					
Availability of Suitable crossing points					
Availability of suitable pedestrian routes					
Street Lighting					
Shading/cooling					
Information and signage on routes					
Accessibility (e.g. dropped curbs)					
Rest areas/break areas					
<ul style="list-style-type: none"> <li>• <b>Would you walk more if better pedestrian facilities are provided?</b></li> </ul>					
O Yes		O No		O cannot choose/ decline to specify	
<ul style="list-style-type: none"> <li>• <b>Do you have other comments, questions or concerns?</b></li> </ul>					
-----					

<b>Imageability and legibility</b>
<ul style="list-style-type: none"> <li>• <b>What is your feeling about the overall experience in this area/street?</b></li> </ul>
O Very satisfied (I'd like to spend more time here and revisit here in the future)
O satisfied (I may like to visit this area/street again in the future)
O Neither satisfied nor dissatisfied (I feel no differences in here compared to another area/street that I've visited)
O dissatisfied
O very dissatisfied
O cannot choose/ decline to specify
<ul style="list-style-type: none"> <li>• <b>What is the first thing comes to your mind when someone asks you to meet at this street?</b></li> </ul>
-----

<ul style="list-style-type: none"> <li>Do you have favorite places on this street? Can you list them:</li> </ul>		
-----		
-----		
<ul style="list-style-type: none"> <li>Is there any activity, culture event or celebration, you like to have it in this street?</li> </ul>		
O yes, what: -----		O No, why: -----
<ul style="list-style-type: none"> <li>What things would you do or suggest doing differently to develop this street?</li> </ul>		
-----		
--		
<ul style="list-style-type: none"> <li>What is your best place to go in the week end, click the closer point to your opinion? and mention the reason (accessibility, design quality, shopping diversity &amp; pricing, entertainment...):</li> </ul>		
O Souq waqif ----- -	O Mall ----- -	O Street -----
O Corniche -----	O Restaurant ----- ----	O katara -----
O Pearl Qatar -----	O coffee shop ----- ----	O Cinema -----
O Villagio & Aspire	O Sports facilities ----- ----	O Theater ----- -
O Desert -----	O Resort, hotel ----- --	O health Club ----- ---
O virtual space -----	O others -----	O cannot choose/ decline to state

<p><b>For Managers/salesmen or workers only:</b></p> <ul style="list-style-type: none"> <li>Type of Shop:</li> </ul>
-----
-----
<ul style="list-style-type: none"> <li>Do you operate shops at any other market? If so, where?</li> </ul>
O No O Yes, Where -----
<ul style="list-style-type: none"> <li>Including you, how many people work in this shop?</li> </ul>
O Full-time
O Part-time
<ul style="list-style-type: none"> <li>How long have you been operation this shop?</li> </ul>
-----
<ul style="list-style-type: none"> <li>What three things would help to improve this market profit?</li> </ul>

d- -----

e- -----

f- -----

- Roughly how many customers do you expect to serve today?

less than 10

10-20

More than 20

- On average, how many customers do you serve per week?

Less than 50

50-100

More than 100

- Do you have more customers in the colder months of the year? If yes, how many more customers would you expect to serve then?

Less than 50

50 -100

More than 100

- Do you have aspiration for the expansion of your business?

yes, where is the preferred location -----  No, why? -----

- Do you find the street and public services are enough in this Street? In terms of Safety, effectiveness, accessibility, beauty and design?

Yes

I do not know

No, what is missing? -----

## Appendix D: QU IRB Approval

### Qatar University Institutional Review Board- Approval



Qatar University Institutional Review Board  
QU-IRB

January 26, 2016

Ms. Dalal Farhat Harb  
(Student Graduate Project)  
Qatar University  
Tel.: 55543106  
Email: [dalalfh@hotmail.com](mailto:dalalfh@hotmail.com)

Dear Ms. Dalal Harb,

**Sub.: Research Ethics Review Exemption (Graduate Student Project)**  
**Ref.: Project titled, "Examining the Vibrancy of Urban Commercial Streets in Doha City "**

We would like to inform you that your application along with the supporting documents provided for the above proposal, is reviewed and having met all the requirements, has been exempted from the full ethics review.

Please note that any changes/modification or additions to the original submitted protocol should be reported to the committee to seek approval prior to continuation.

Your Research Ethics Approval No. is: **QU-IRB 539-E/16**  
Kindly refer to this number in all your future correspondence pertaining to this project.

Best wishes,

Dr. Khalid Al-Ali  
Chairperson, QU-IRB



Consent Form in English Language, as Requested by QU-IRB



**CONSENT FORM**

**Title:** Interview/ Questionnaire for examining the vibrancy of urban commercial streets in Doha City

**Lead Principal Investigator:** Dalal Farhat Harb , +974 55543106

Qatar University, College of Engineering Department of Architecture and Urban Planning

You are invited to participate in an interview for a study for Qatar University graduate project. We need some information about your visit to/work in (Al Sadd street, or Al Mirqab Al Jadid street or Al Mansoura Street). The purpose of this study is to measure your satisfaction on the commercial streets in Doha City, and your opinion/needs on that street and its design. Your help is highly appreciated and important to complete this study. It is entirely your decision whether to participate in this study or not. You may withdraw at any stage you like.

This study will not require names or personal identity and participation in the study is completely anonymous and voluntary, and will not take more than 10 minutes from your time  
You may not benefit from being a part of this study but your participation may help to improve conservation policy in State of Qatar.

Any information from you will remain confidential between you and the University researchers. You will not be identified as a study participant in any reports or publications of this study.

I HAVE READ THE EXPLANTION ABOUT THIS STUDY. I HAVE BEEN GIVEN THE OPPORTUNITY TO DISSCUSS IT AND MY QUESTIONS HAVE BEEN ANSWERD TO MY SATISFACTION. I WILLINGLY GIVE MY CONSENT TO PARTICIPATE IN THIS STUDY.

WE MIGHT NEED YOUR PHOTO TO SHOW YOUR ACTION IN THE STREET.  
HOWEVER, IT WILL BE TAKEN ONLY UPON YOUR APPROVAL

**I have agreed to take photo for me      Yes      No**

Participant Signature

Date

Investigateur Signature

Date

Consent Form in Arabic Language, as Requested by QU-IRB

استمارة الموافقة

مقابلة / استبيان لدراسة حيوية الشوارع التجارية في المناطق الحضرية في مدينة الدوحة  
الباحث الرئيسي: دلال فرحات حرب  
جامعة قطر، كلية الهندسة قسم العمارة والتخطيط العمراني

أنت مدعو للمشاركة في مقابلة/استبيان لدراسة لمشروع التخرج في جامعة قطر. نحن بحاجة الى بعض المعلومات حول زيارتك ل/ العمل في (شارع السد، أو شارع المرقاب الجديد أو شارع المنصورة). والغرض من هذه الدراسة هو قياس رضاك على الشوارع التجارية في مدينة الدوحة، ورايك في هذا الشارع وتصميمه. مساعدتك هو محل تقدير كبير ومعهم لإتمام هذه الدراسة. هو تماما قرارك ما إذا كنت ستشارك في هذه الدراسة أم لا. تستطيع الانسحاب في أي مرحلة تريد.  
لن تتطلب هذه الدراسة أسماء أو الهوية الشخصية والمشاركة في الدراسة هي مجهولة تماما والطوعية، وسوف لا تأخذ أكثر من 10 دقيقة من وقتك.  
هذه الدراسة ليست مفيدة لكم، ولكن مشاركتكم قد تساعد على تحسين سياسة الحفظ في دولة قطر.  
وأي معلومات نحصل عليها منك تبقى سرية بينك وبين الباحثون في الجامعة. لن يتم التعرف عليك كمشارك في الدراسة في أي تقارير أو منشورات لهذه الدراسة.

لقد قرأت ما سبق عن هذه الدراسة. ولقد تم إعطائي الفرصة إلى مناقشة بعض الإستفسارات من قبلي، وتم الرد عليها. أنا عن طيب خاطر أعلن موافقتي على المشاركة في هذه الدراسة.  
قد نحتاج صورتك خلال عملك أو تجوالك في الشارع، ولكن لن يتم ذلك إلا بموافقتك

لقد وافقت على اتخاذ الصور بالنسبة لي نعم لا

توقيع المشارك: التاريخ

توقيع الباحث: التاريخ

Appendix E: Sketches, and Diagrams of Data Collection

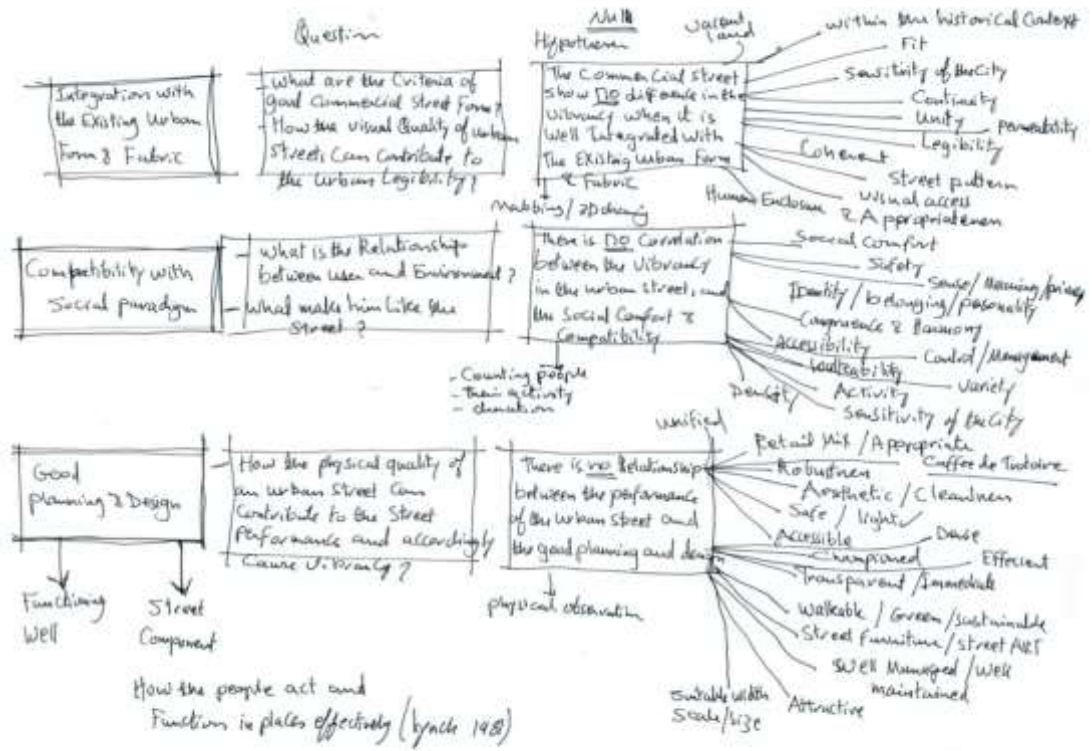


Figure 98 Generating the hypotheses, by the author

**Collected Data**

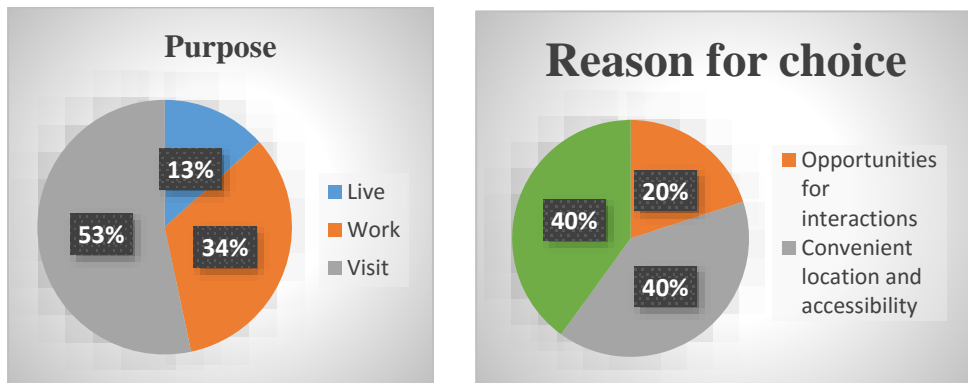


Figure 99 Purpose of the visit and the reason for choosing these streets, from the data collected in the questionnaire

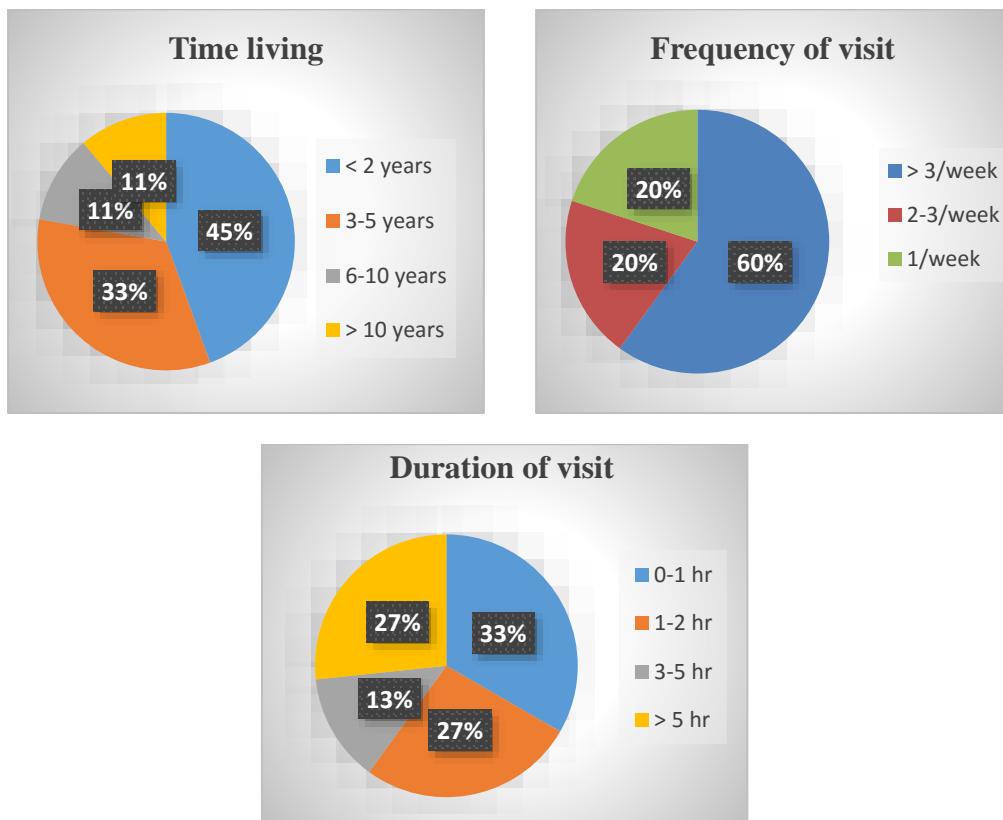


Figure 100 Participant data outlining the amount of time spent living in Doha, and the frequency and duration of their visits to the streets, data collected from the survey conducted during visits to the three streets.



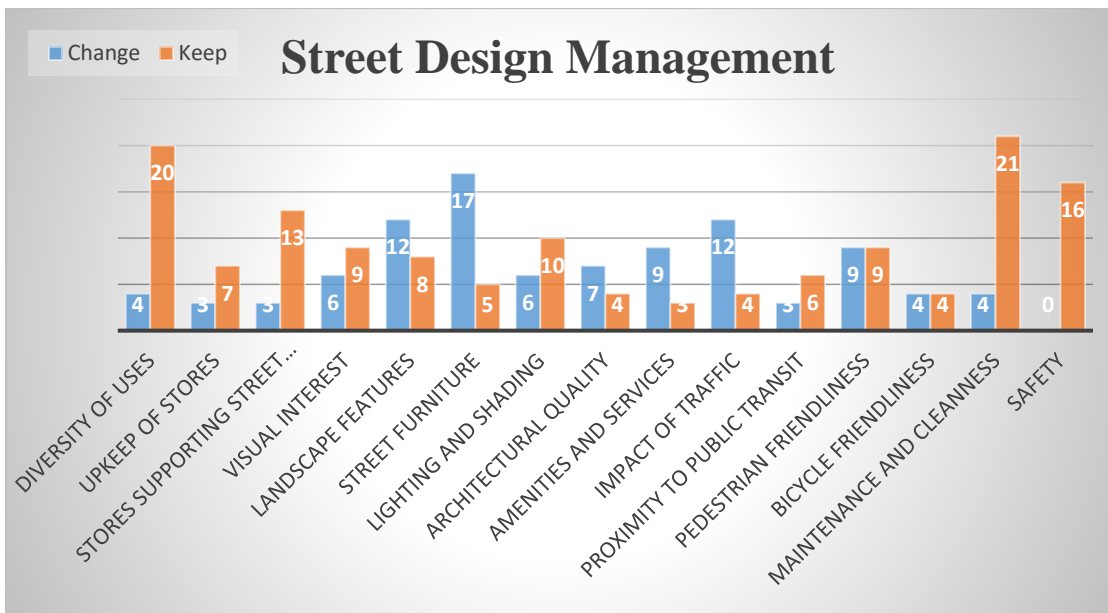


Figure 101 Scores given to the criteria of the street design and management, the data collected from the survey conducted of the three streets.

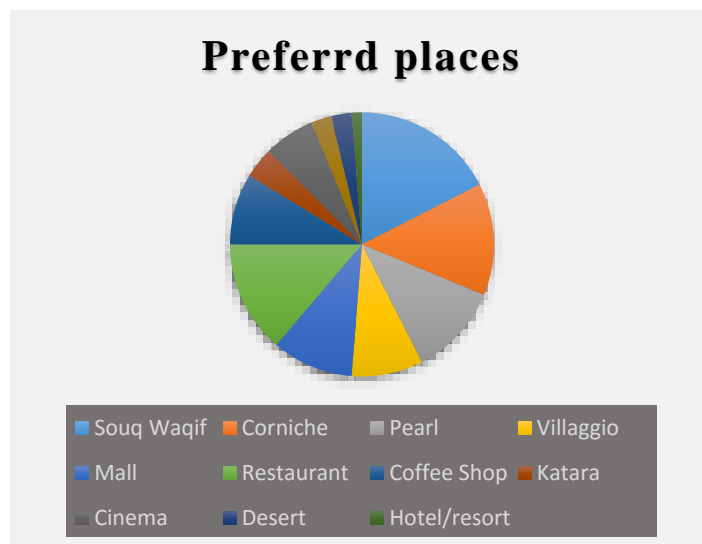


Figure 102 Preferred places, as per the result of the survey

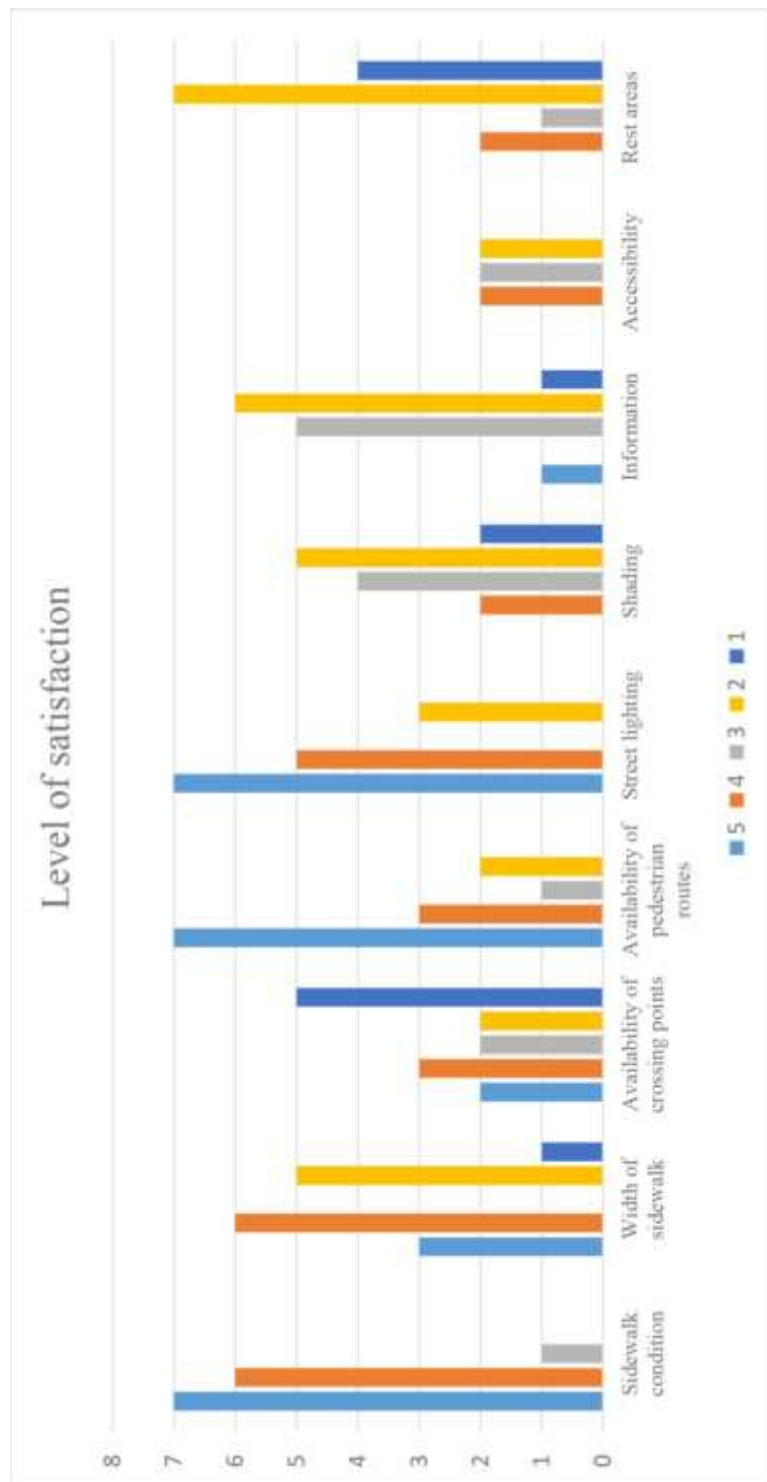


Figure 103 Level of users' satisfaction chart, data collected from the survey conducted of the three streets.