

AMERICAN UNIVERSITY OF BEIRUT

EXPERIENCING WELLBEING IN STREETS: THE CASE OF
BADARO AND ITS RESTORATIVE LANDSCAPE FEATURES

by
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ABSTRACT OF THE THESIS OF

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In rapidly urbanizing cities, where limited green space is available, streetscapes are considered valuable outdoor environments. Given the emergent evidence on restorative benefits of outdoor spaces and small urban green areas such as pocket parks and residential gardens, and the fact that the streets are the only green spaces left in Beirut, the question of whether these urban typologies can promote wellbeing is a relatable one. To our knowledge, no published work has looked closely to the restorative aspects of streetscapes. This thesis looks to identify specific landscape features, focusing particularly on social, built and nature-related features, that promote restoration and wellbeing in streets.

This qualitative study is the first to examine Badaro as a case study and investigate peoples' experience through conducting go-along interviews to identify the restorative streetscape features. The go-along findings are analyzed thematically and compared with literature to highlight the most significant features within the local context of Beirut.

From a landscape perspective, the results emphasize that presence of other people and informal gathering spots in the streets are considered restorative. The visual characteristics of Badaro's architecture in terms of simple and maintained landmarks, presence of both modern and old buildings next to each other as well as presence of landmarks of protected heritage and even walkability in internal streets are also important for restoration. The results similarly indicate that vegetation plays a role in the promotion of wellbeing yet to a certain extent as there are specific aspects that are only recognized such as presence of general street greenery, presence of street trees of certain qualities in terms of specific species, symmetric arrangement, high amounts, maintained shape, big size and even presence of bird sounds are vital for wellbeing. Finally, this thesis proposes a set of design recommendations to assist the design and planning for optimal restorative streetscapes for health and wellbeing of people.

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ABBREVIATIONS

AUB American University of Beirut

ART Attention Restoration Theory

IRB Institutional Review Board

SRT Stress Reduction Theory

CHAPTER I

INTRODUCTION

A. Background and Motivation

Over the last decades, the world population has grown exponentially and cities have expanded rapidly without any consideration to land use planning strategy thus leading to human pressure on damaging green areas (Tyrväinen et al., 2014; Wey & Wei, 2015). Although urbanization has led to advancement in industrialization and improvement in the economic conditions, this swift increase in short periods has created new environmental, economic, and social demands on cities and led to negative impacts on social, economic, and psychological characteristics of urban dwellers. As a consequence, the quality of urban environments has progressively admitted affecting negatively citizens' health and wellbeing in terms of diminishing opportunities for physical activity and mental restoration (Srivastava, 2009; Stigsdotter et al., 2010; Stigsdotter & Grahn, 2011; Turan & Besirli, 2008). Obesity, reduced social support, stress-related diseases such as burn-out and depression, and even mental fatigue are some of the public health issues correlated with this unplanned expansion of dense cities (Srivastava, 2009; Stigsdotter et al., 2010).

In seeking novel approaches to address these urban health problems, there is a resurgence of interest in the role of urban green spaces for improving quality of life in cities. However, in rapidly urbanized areas, and when the citizens' outdoor life and recreation has taken place to a larger extent than ever before, these spaces are under constant threat of being transformed into new infrastructure and housing areas (Stigsdotter et al., 2010). This threat, in the context of Lebanon, has challenged the

adequate provision of existing green spaces especially when their availability is limited and notion of protecting open spaces is absent.

Therefore, streetscapes are considered valuable outdoor landscapes since they are one of the few green public places remaining in Beirut where people can have access to vegetation. The reliance on informal green spaces and underutilized open spaces found in these typologies becomes also important for the creation of landscapes for the health and wellbeing of residents.

B. Statement of the Problem

Lately, there has been a growing interest for the potential of unconventional and small alternative urban green spaces as restorative landscapes. A body of theory shows that experiences of nature can promote restoration; even in small urban green spaces (Kaplan, 1995; Nordh, Hartig, Hagerhall, & Fry, 2009; Nordh & Østby, 2013). Recent studies have looked at the potential of business parks (Colley, Brown, & Montarzano, 2016), residential gardens (Stigsdotter & Grahn, 2004), small urban open spaces (Thwaites, Helleur, & Simkins, 2005) and small pocket parks (Nordh et al., 2009) for restoration, yet to my knowledge, there is no available research on the potential of streetscapes as restorative landscapes. While most of evidences and studies addressing the restorative potential of urban green spaces have mainly emerged from developed countries like Europe and North America, almost no one has looked at the value of streetscapes from a restorative point of view in more arid climates of the Mediterranean such as in Lebanon. Hence, there is no published work, to my knowledge, investigating the restorative landscape features of streetscape in order to design a street for wellbeing in a vibrant city like Beirut.

C. Study Aims and Objectives

The aim of this qualitative work is to examine Badaro's streets in terms of restoration and restorative landscape features. This is done by investigating Badaro as a case study and conducting go-along interviews to identify the restorative landscape features in order to develop design recommendations for restorative streets. Therefore, the study objectives can be summarized in the following main points:

- Identify from the literature review the landscape features (social, build & nature- related features) that may promote wellbeing.
- Introduce Badaro as a case study then investigate people's experience of Badaro's streets in terms of wellbeing through go-along interviews.
- Compare the go-along interviews with literature to highlight the actual restorative landscapes features in Badaro.
- Propose set of design recommendations in order to enhance the restorative aspects of streets based on the research findings.

Briefly, this thesis will be approached by presenting the literature review where the necessary background and synthesis about the topic will be explained. This is followed by examining Badaro as a case study and studying people's experience through the go-along interviews. Finally, go-along findings will be discussed to develop design recommendations that will serve the purpose of this study.

CHAPTER II

LITERATURE REVIEW

A. Landscape and Human Wellbeing

With rapid global urbanization, the prominence of understanding relationships between landscapes and human health is being progressively recognized in research. Specifically, environmental psychology has documented the restorative benefits of exposure to natural environments on human wellbeing (Kaplan, 1995; Stigsdotter & Grahn, 2002; Ulrich et al., 1991). Research findings suggest that environments perceived as natural tend to be more restorative than environments perceived as urban or artificial (Hartig, Evans, Jamner, Davis, & Gärling, 2003). Nevertheless looking beyond the nature v/s urban dichotomy, appealing urban landscapes have proven to provide strong restorative potential (Karmanov & Hamel, 2008).

This general statement about landscape induces a number of questions on the type of links and associations that exist between outdoor environments and human's health. In fact, recent literature has conceptualized the potential of landscape as a health resource that promotes general wellbeing. Explicitly, landscape's function has been studied as a spatial framework for health-promoting activities in mental, physical, and social realms. Abraham's heuristic framework of landscape has identified a set of meaningful pathways linking landscape and three dimensions of health – physical, social and mental wellbeing (Figure 1). Through designed, constructional, and aesthetic aspects of landscape, mental wellbeing can be promoted through attention restoration, stress reduction, and the elicitation of positive emotions. Physical wellbeing can be endorsed through walkable environments, physical activity in daily life, and leisure

time. Finally, social wellbeing can be supported through social integration, social engagement and participation, and through social support and security (Abraham, Sommerhalder, & Abel, 2010).

Although there are many challenges to create supportive environment for everyone, studies have empathized that landscape can foster people's health in daily life by providing access to health-promoting landscapes at home, at work, and during leisure time. To promote wellbeing in its three different dimensions, landscapes need to possess certain characteristics to influence human wellbeing. Abraham has emphasized on the easy access to natural landscapes and the availability of nearby (green) public open spaces are among the most important characteristics. People's perception of landscapes as pleasant and attractive also affects whether they feel safe from crime and traffic dangers; well-lit streets and presence of other people on sidewalks can help them achieve this feeling. Moreover, walkability can be promoted when a neighborhood provides a general functionality such as street connectivity, pedestrian zones and many more. Abraham has continued to show the importance of walking-friendly design in ensuring easy access and healthy physical behavior away from vehicles. As for promotion of emotional wellbeing, landscape has to offer the opportunity for social engagement with other people in public open spaces (Abraham et al., 2010).

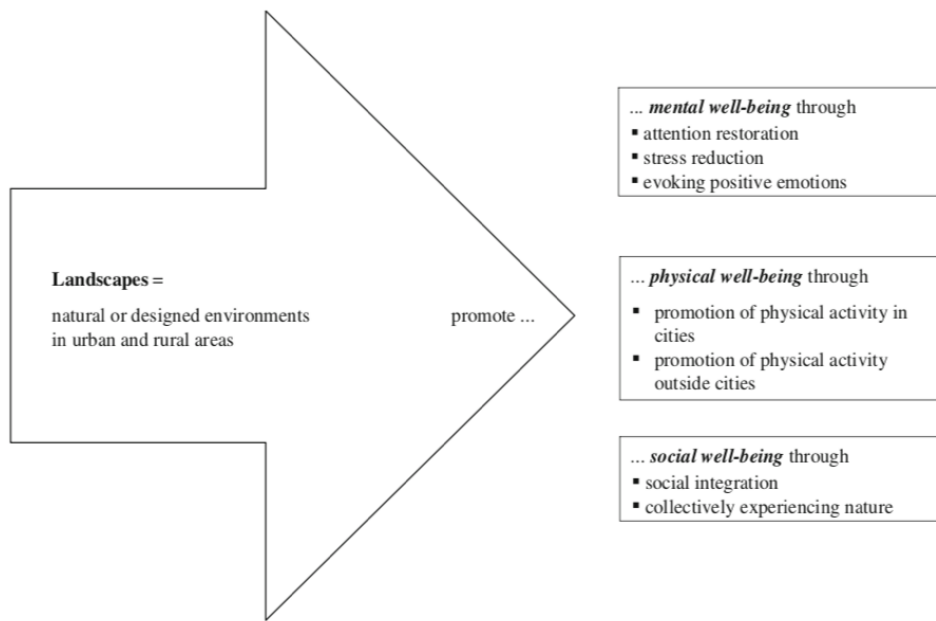


Figure 1 Abraham's heuristic framework on the health-promoting impact of landscape

Adding to that, many have highlighted the relationship between physical settings, and impact on restoration (Marcus & Sachs, 2013) and thus the role of aesthetics and design in positively impacting human health (Schweitzer, Gilpin, & Frampton, 2004). However most design guidelines have been focused on therapeutic or restorative landscape design in healthcare facilities or large green spaces such as parks, forests and campuses (Marcus & Sachs, 2013; Stigsdotter et al., 2010). As I mentioned before, there has been a growing interest for the potential of unconventional and small alternative urban green spaces as restorative landscapes. While many studies focused on the restorative potential of nature in small urban green spaces (Kaplan, 1995; Nordh & Østby, 2013), others have looked at the potential of business parks (Colley et al., 2016), residential gardens (Stigsdotter & Grahn, 2004), small urban open spaces (Thwaites et al., 2005) and small pocket parks (Nordh et al., 2009) for restoration. However, yet to

our knowledge, there is no available research on the potential of streetscapes as restorative landscapes. In a vibrant city like Beirut, which is often perceived as chaotic and stressful, and where green spaces are scarce, the potential of streetscapes as restorative landscapes seems to be a valuable priority.

B. Streetscapes as Public Landscapes

Therefore, as part of the creation of landscapes for public, streetscapes in particular are considered important urban typologies that have been thoroughly examined by many pioneers in urban planning and design disciplines.

The qualities of these typologies have been investigated in attempts to understand their ability to define the identity, success, and sustainability of the city (Ewing & Handy, 2009; Gehl, Svarre, & Risom, 2011; Lynch, 1960; Lynch & Hack, 1984). Streetscapes' notions related to individual reactions such as safety, comfort, harmony, continuity and even more complex urban design ideas such as imageability, enclosure, human scale, transparency and complexity have been recognized as positive qualities in shaping the overall urban experience (Ewing & Handy, 2009). Standard detailed physical features such as street width, building heights, façade continuity and sky exposure have also been considered as part of the streetscape experience (Porta & Renne, 2005). Although, these qualities and notions are highly noticeable in defining streetscapes' experience, it is also essential to look at streetscapes to their natural features as they have been neglected relative to their built characteristics.

Since streetscapes are proved to be important typologies for people, identifying landscape features in streets that support human wellbeing and encourage healthy behaviors is a critical need. Hence, literature examines the landscape features that are

highly noticeable, and many of these features could be useful in the defining streetscapes' experience. Thus, the below section expands thoroughly on these landscape features. They are divided based on the three layers of streets: socially through social- related features, physically through build or physical-related features and naturally through nature-related features to investigate streets for human wellbeing.

C. Streetscapes for Human Wellbeing

1. Landscape Features That May Apply to Streetscapes

a. Social- Related Features of Streetscapes

Streets are places for public life and social interaction (Mehta, 2007). Since they constitute a significant part of the open spaces in the city, streetscapes are symbols of the public realm where people depend on streets for functional, social, and leisure activities such as travel, shopping, play, meeting, and interaction with other people; and even for relaxation (Jacobs, 1993; Mehta, 2007).

Due to the increase in customer culture, privatization of public space, shopping malls and plazas have replaced traditional public spaces such as streets (Banerjee & Loukaitou-Sideris, 1988). However, streets can support the concept of public life in coffee shops and bookstore where it can combine customer's culture and the need for active and passive engagement and interaction (Banerjee & Loukaitou-Sideris, 1988). That's why scholars have emphasized on the role of the street as an ordinary outdoor space in creating affordances for everyday social contacts that are crucial to personal wellbeing and social cohesion (Mehta, 2019).

Studies have also proved that macroscale physical features such as socioeconomics, location, accessibility, major destinations, density and major natural

features can impact the level of pedestrian activity in the streets. These features may vary depending on the use of streets even though they are analogous within a same neighborhood. For this reason, people's uses and social behaviors in the streets have been understood through the microscale features of streetscape as they can impact and shape those patterns and activities.

To understand how street acts as a behavior setting for everyday activities and social interaction, social aspects of the street have to be identified and extracted. Consequently, it is important to examine how the characteristics of livable, vibrant and social streets are affected by microscale physical features and how they can promote wellbeing.

- Characteristics of lively and vibrant streets

In lively and vibrant streets, people can experience the sense of liveliness, sense of familiarity and even sense of belonging to the community. For instance, presence of a number of people engaged in various social activities can contribute to sense of liveliness within a street. Standing, sitting, lying, talking, eating and drinking, reading, using a laptop, window-shopping, smoking, and so on are some activities that can offer opportunities for short-term, low-intensity contacts. Such activities can promote social wellbeing through their ability to support and facilitate public life by easy, relaxing and simple interaction with others (Jacobs, 1961; Mehta, 2007). People also tend to develop some kind of trust with strangers just from a casual contact at a local level (Jacobs, 1961).

As for experiencing sense of familiarity and belonging to the community, people's daily functions can be satisfied through heightening feelings of social value and meaning in a lively street. Moreover, small local businesses or informal community

gathering places in the neighborhood can create a specific identity, increase relations and value to the people.

Additionally, presence of stationary, lingering and social activities can impact the level of street's liveliness. Such activities are usually supported by several streets' aspects. For example, presence of variety of businesses and independently owned stores, personalization of the street fronts of the businesses by means of decoration, signs, plants, as well as the ability of a store to be permeable to the street can support such activities and enhance the sense of liveliness in a street. Characteristics related to the street itself such as sidewalk width, public seating, street furniture, shade on the sidewalk resulting from canopies or retractable umbrellas and even architecture of the building such as façade articulation can also play an important role in making the streets more desirable and places of different types of activities (Mehta, 2007).

- Characteristics of social streets

The social life in streets is examined as a measure of urban vitality and an indicator for people's satisfaction with their physical settings. Therefore, the characteristics of a social street and how it can be a desired component of any good mixed-used neighborhood has been investigated. Experiencing diversity and creative disorder is enhanced by the presence of various possibilities for social contact. This allows a social street to be publicly open in a variety of active or passive social behaviors where people's needs are satisfied and maintained (Mehta, 2019).

Another aspect of a social street is presence of high level of diversity in terms of people and high density of use with a wide range of activities. The coexistence between distinct people of numerous age groups and class interacting together is considered an important social feature that affect wellbeing. Feeling of comfortably and at easiness

allow people to experience social wellbeing especially when they engage in ordinary activities of daily life. Such diverse interactions and engagements allow them also to experience sense of being in it and enclosure as well as sense of safety (Mehta, 2019).

The range of different social relationships and behaviors in public streets present another essential feature of streets' social life. Mehta's taxonomy of sociability in terms of passive, fleeting and enduring sociability, allow streets' outdoor behaviors to be examined by the type and nature of social activities (Mehta, 2019). For example, passive sociability is one type of social behavior where it shows the need for people to be alone and relax in public; it can familiarize people with their social surrounding. Some street signs that can trigger passive sociability include public solitude such as reading, working, dining alone and only engaging in minimal and essential conversation. Spectating and displaying sights, sounds and smells of bodies moving through space, experiencing sensory stimulation due to the presence of signage, decorations or street furniture and even seeing new and familiar faces and activities present other signs of passive sociability. Whereas the second type of sociability is fleeting sociability that provides chances for neighbors to cross paths as a part of the daily round like having a small chitchat or conversation that result from stationary activities. Some signs of fleeting sociability include act of waving to a known neighbor, an acquaintance or a familiar face, a momentary stop for a chat, a simple reciprocation through a nod or a smile; all these signs are influenced by the design of the street. For instance, width of sidewalk can play a role in helping people communicate across the street and even managing traffic speed through different traffic calming measures that can help people cross easily and exchange greetings. The third type of sociability is enduring sociability where it involves intimate relationships and

affiliations. To create the convenient contexts for such sociability, emotional and time investment is needed to support these common and repeated interactions. People can actively connect with their companions, friends and the community where they can build intimate relationships. They usually meet regularly in shore or businesses facilities. This type of sociability can create the ambience for safety and amenity that foster suitable social gathering.

b. Build- Related Features of Streetscapes

While most research has focused on streets' qualities that may hinder wellbeing, few studies have addressed the positive associations existing between the build characteristics and promotion of human's health and wellbeing (Hidalgo, 2006). Based on this, build-related features in streetscapes that can promote wellbeing include presence of certain physical elements related to spatial design qualities as well as the specific architectural features.

- Spatial design of a street

A well-designed and attractive urban environment may have a stress-reducing and mood-enhancing power equal to that of an attractive natural environment (Karmanov & Hamel, 2008). What is meant by an attractive urban setting, it is usually perceived creatively designed, internationally acclaimed, well-maintained, and fashionable. Despite the presence of water and green spaces, identifying the physical characteristics that contribute to the enhancement of the restorative effect of urban environments have seemed to be an important issue. According to Karmanov and his colleague, what influences the judgment of whether an urban setting is highly attractive and interesting is the design of the urban setting itself. The intricate spatial layout of the

area can evoke a sense of mystery as well as the presence of landmarks of two high-rise apartment buildings can provide a sense of ease and rest.

Furthermore, a growing evidence has suggested that specific physical components and spatial qualities can provide restoration in small urban settings (Thwaites et al., 2005). The contemporary urban regeneration for public open space provision has to be reconceptualized in terms of networks of small linked spaces of various kinds. They should be like a web or mesh-like structure to connect a system of smaller spaces in a holistic way. Such restorative capacity of spatial arrangement is enhanced by the facilitation of social interaction; thus, it can promote social and physical wellbeing by making the cities more sustainable and livable. Emphasizing on proximity or location; direction or continuity; or transition as a fundamental part of a complex geometry can enhance the spatial sensations through the promotion of social and psychological health (Thwaites et al., 2005).

In attempts to encourage physical activity and promote sustainability, physical urban design and formal indicators of social urban sustainability are linked. For example, designing narrow streets is important to support pedestrian movements and walkability behaviors. This can be done by linking buildings and building fronts to be continuous as possible along the street. As for retails, they can be designed at the ground floor and numerous buildings can be present instead of few large ones. Parking lots can be avoided as well as blank walls such large billboards and traffic lights. Also, street furniture is essential for encouraging sustainable streets (Porta & Renne, 2005).

- Physical attributes and Architectural features

To understand how architectural features of the build environments can affect human's wellbeing, physical attributes of streetscape such as building height, presence

of turns in the skyline silhouette and the façade ornamentation are examined. These selected physical attributes can influence judgments regarding likelihoods for restoration as they are related to environmental preferences. They also have immediate practical relevance for a contemporary urban design challenge as they can increase the residential densities while sustaining livability (Lindal & Hartig, 2013).

The higher levels of architectural disparity in the urban residential setting are regarded to promote wellbeing by promoting sense of being away and fascination (Lindal & Hartig, 2013). The perceived surface complexity in terms of presence of turns in skyline silhouettes and presence of points that construct a geometric shape as well as facades' details such as windows, doors trims, and ornaments can enhance the sense of being away. As for the effect of building height, restoration likelihood is mediated by sense of being away; this can be justified by the preference of moderate levels of enclosure. Such attributes can promote mental wellbeing and offer direction for the design of more psychologically sustainable urban residential environments (Lindal & Hartig, 2013).

Adding to that, Ewing and his colleagues have been able to prove three significant streetscape features that can contribute to physical wellbeing through walkability. Providing urban furniture and particularly urban seating is one of the street features that activate public spaces. This goes along with presence of active uses such as shops, restaurants, public parks and other uses that generate meaningful pedestrian traffic. The third streetscape feature, related to transparency, is the proportion of windows on the street due to presence of retail activities. Consequently, the high interaction with adjacent buildings and high level of transparency can affect street vitality (Ewing, Hajrasouliha, Neckerman, Purciel-Hill, & Greene, 2015).

- Urban design qualities of a street

Urban design qualities in terms of physical characteristics of streets have been studied to understand their associations with wellbeing. Imageability is a quality of a physical environment where landmarks specifically distinctive buildings, complex shapes, large sizes, and high use can evoke a strong image in an observer. However, the major feature that contribute to imageability is the number of people and outdoor dining; they can promote a pleasant feeling by impacting physical and psychological wellbeing. This leads to the importance of human activity in creating imageable places especially when it is related to sense of place. As for creating a perception of enclosure for increasing walkability, the presence of continuous ‘street wall’ of building facades, on each side of the street can help in defining and shaping the outdoor spaces. Human scale can be defined by height and width of buildings, human speed and even paving patterns and many more. But the most significant street features that can enhance the sense of human scale is the presence of first floor windows, small planters and street furniture. Another urban quality that contributes to physical wellbeing is the sense of transparency; it can be promoted through seeing into buildings and detecting human activity along the street. Complexity, related to the number of noticeable differences, is the last urban quality that shapes walkability in streets. Taking into consideration that people are comfortable when they receive information at usable rates, the most significant physical feature that enhances the perception of complexity is the presence of people and outdoor dining (Ewing & Handy, 2009). All these physical characteristics of the streetscape provide insights on how they can contribute to physical wellbeing as more than just abstract urban design qualities.

c. Nature- Related Features of Streetscapes

Commonly, literature has shown that natural aspect of streets depends on the type of natural environment and where it is presented. In natural environment, views that are pleasant or visually attractive play a major role in promoting wellbeing. One characteristic of these landscapes is presence of idyllic places such as seaside, mountains, lakes and so on (Kaplan, 1995). Being people's most preferred destinations and easily accessible, these places are influenced by frequency of visiting, the length of stay as well as frequency of physical exercise and activity. They can simply enhance mental wellbeing through forgetting worries, clearing away random thoughts, recovering attentional focus, facing matters on one's mind, providing relaxation, and regulating emotions (Korpela, Ylen, Tyrvaainen, & Silvennoinen, 2008). Pleasant landscapes include well-endowed view with fascinating objects such as clouds, sunsets, snow patterns, the motion of the leaves in the breeze; people find these objects engrossing and effortless resulting in opportunity for thinking about other things (Kaplan, 1995). Presence of historic artifacts in a relatively small area can promote sense of being connected to past eras and presence of high amount of vegetation can generate feelings of pleasantness and calmness (Gidlöf-Gunnarsson & Öhrström, 2007; Kaplan, 1995). Another characteristic of an attractive natural environment that promote wellbeing is presence of high amount of open spaces that can lower crime rates and enhance feelings of safety in cities; these open spaces create the best balance between tranquility and danger concerns through well-tended natural elements that do not hinder visual access (Herzog & Chernick, 2000). Feelings of safety in cities is also supported by the presence of relatively permeable hedges that allow people to see others approaching (Herzog & Chernick, 2000).

In addition to visuals of natural environments, the presence of positive soundscapes such as natural sounds such as birdsong, wind in trees or even sound of water and even sounds of children playing in green areas can provide opportunities to escape heavily trafficked and noisy surrounding. Since they are positively judged and preferred than mechanical sounds, natural soundscapes can perceive a more positive and tranquil sound environment by reducing noise- induced stress and other serious impacts of traffic noise exposure (Gidlöf-Gunnarsson & Öhrström, 2007).

On the other hand, when examining urban settings, the nature-related features of streets that can promote wellbeing usually depends on the elements of urban vegetation such as flower beds, grass, trees, water element, and even vegetation within human build interventions and types of urban green spaces such as wild spaces, vertical green spaces, green roofs, informal green spaces, parks and gardens.

- Types of urban green elements

The availability of flower beds can positively affect judgments of restoration likelihood; accordingly, people's perceptions of being away and fascination are boosted (Lindal & Hartig, 2015). Various colors of flowers especially bright ones for street beds, compact and tidy compositions and long plot type of flower beds are mostly appreciated for pedestrian convenience as they contribute to the aesthetic quality of a street and provide positive influence on psychological wellbeing (Todorova, Asakawa, & T., 2004).

Adding to that, settings with grass can influence affective reactions, promote social integration and physical activities (Huang, Yang, Jane, Li, & Bauer, 2020). Hence, availability of grass in streets especially well-maintained grass can impact

positively judgments of restoration likelihood and serve as a cue for improving sense of safety in cities (Kuo, Bacaicoa, & Sullivan, 1998; Lindal & Hartig, 2015).

Another important element that affect level of wellbeing in urban settings is presence of high amount of trees; residents have responded positively to large number of trees in streetscape as they have strong effects on preference and sense of safety in inner-city neighborhoods (Kuo et al., 1998). More recent studies have supported the previous one by stressing on the importance of street trees in the contribution to a positive living environment by increasing restoration and vitality. This has improved psychological restoration by lowering antidepressant prescription rates, boosting physical activity and supporting stronger neighborhood's social ties (Elsadek, Liu, Lian, & Xie, 2019; Taylor, Wheeler, White, Economou, & Osborne, 2015). Streetscape with trees arranged symmetrically along both sides has been correlated with positively with both rated restoration likelihood and preference (Lindal & Hartig, 2015). Furthermore, increasing tree canopy cover in urban residential roads has been a useful feature in helping relieve stress levels and bring about multiple positive health impacts for city dweller; literature has stressed on the importance on this method as a therapeutic strategy to provide cities with the appropriate tree species where people can relax by walking along urban roads (Elsadek, Liu, Lian, et al., 2019).

Vegetation within human build interventions includes spontaneous vegetation found within pavements, on visible signs of human actions or managements or even presence of nearby vegetation visible from apartment buildings (Bonthoux, Chollet, Balat, Legay, & Voisin, 2019; Weber, Kowarik, & Säumel, 2014). The presence of spontaneous vegetation in public spaces and how it is promoted relates to people's attitudes and affect their wellbeing. For example, lowly managed pavements with

spontaneous vegetation are highly valued than highly managed pavements without vegetation as they are perceived more beautiful and less boring (Bonthoux et al., 2019). High appreciation for vegetated pavement, spontaneous or integrated in designs are explained by people's frequent connection with nature in terms of spending more time in public or private green spaces or their childhood experiences or education (Bonthoux et al., 2019).

- Types of urban green spaces

Generally, urban green spaces are essential for improving quality of life in cities. In fact, research has closely looked at the environmental, ecological, social, economic and psychological benefits of these spaces on human health; it was proven that viewing or having accessing to green spaces promoted health by restoring mental fatigue (Kaplan, 2001), reducing stress (Ulrich et al., 1991), aiding as a resource for physical activities (Bjork et al., 2008), serving as a source for social engagement and interaction (Abraham et al., 2010), as well as reducing all-cause and cause-specific mortality (Mitchell & Popham, 2008). They were also seen as an important economic resource as they increased the market value of properties (Lindsey, 2004; Saphores & Li, 2012).

Specifically, the integration of vegetation in façade and roofs of buildings can enhance human physiological and psychological relaxation and promote environmental benefits compared to the building-wall (Elsadek, Liu, & Lian, 2019)(Hunter et al., 2019). Literature has also showed the weight of provision of informal urban green spaces such as green vacant lots in increasing urban biodiversity, providing economic benefits to urban residents through ecosystem services, increasing in property values and even providing feelings of safety in cities (Anderson & Minor, 2017; Hunter et al., 2019). The availability and provision of nearby green areas in urban settings

specifically, visible trees and grass from apartment buildings and green areas directly available or within a few minutes' walk from the apartments, are highly acknowledged as a potential substitute for restoration outside home; residents have reported that they are able to face major life issues more effectively and they can feel sense of community and safety between themselves (Korpela et al., 2008; Kuo, 2001). This is due to the close proximity to green areas that buffer the effects of chronic-noise exposure on health and wellbeing and encourage the use of outdoor spaces as well as the boost motives for visiting and desires to rest and relax (Gidlöf-Gunnarsson & Öhrström, 2007).

Adding to the provision of urban green spaces, the presence or even provision of small green spaces such as pocket parks are likely to become more important as settings for restoration (Nordh et al., 2009). Studies have proved that a glance of a small park on the way to work or even close to home is often considered a highly valued green area resulting in positive influence on mood, feelings of safety as well as motive for more frequent visits (Grahn & Stigsdotter, 2010; Stigsdotter & Grahn, 2004). Such urban park scenes are influenced by level of familiarity, individual's environmental preference and even local landscapes characteristics such as needs and lifestyles where they affect the sense of place attachment, place identity and restorative perceptions (Liu et al., 2020). Having scenic parkway design and presence of specific components in pocket parks can have a positive influence on mood and frustration tolerance (Cackowski & Nasar, 2003). For instance, the possibility for restoration increases not only with park size but with presence of rich vegetation and presence of fewer lanes and wide, green median rather than the concrete barrier in a scenic parkway design; this shows how design can help people experience the park as larger in area than it actually is

(Cackowski & Nasar, 2003; Nordh et al., 2009). The restorative experience in pocket parks are related to the presence of natural components; water element, bushes and trees and even ground surface covered with grass and high density of green walls are important components for the creation sense of being away in pocket parks (Nordh et al., 2009).

Literature has proved that optimal gardens for restoration are usually accessible for everybody, visually appealing, have informal design elements and high level of naturalness looking (Stigsdotter & Grahn, 2002; Twedt, Rainey, & Proffitt, 2016). Whether informal, private/ residential or even community, gardens in urban contexts are often considered to be highly restorative spaces when they contain an abundance of natural elements. Specifically, informal gardens are perceived to have greater restorative potential than formal gardens since they are more visually fascinating and more natural-looking (Twedt et al., 2016). Nonetheless, the relationship between informality and perceived restorative potential varies between individuals where older adults or people with lower income preferred these gardens more than younger adults or people with higher income; this can be explained by the difference in individuals' sense of place attachment and sense of identity as well as the degree to which they currently seek a restorative experience (Twedt et al., 2016). As for private or residential gardens, they can reduce stress and offer a restorative environment when they are in close proximity to one's place and presence of high amount of verdure; this can affect the importance and frequency of garden visits (Stigsdotter & Grahn, 2004). Furthermore, community gardens have proven to ease social networks and organizational capacity in the communities as well as increase aesthetic maintenance of neighborhood when certain health-promotion characteristics are present; they include social support, an

emphasis on informal networks, and community organizing through multiple change tactics (Armstrong, 2000).

2. Synthesis of Street Features that Impact Wellbeing

After conducting an extensive literature to identify the social, build and nature-related features in attempts to investigate streets for human wellbeing, there is a need to create a synthesis table to further define and understand these street features may promote wellbeing based on literature. The synthesis process is explained below:

The first step looked into each article from my literature and searched whether it had any of the three general categories of street features: social-related features, build-related features and natural-related features (column A). The second step was classifying each general category into narrower specific category (column B) to end up with a particular feature that would act as a parameter (column C). Generally, the table's row followed a pattern of presenting the street feature from general to specific and identifying their characteristics (column D) in terms of general aspect (column D1), specific entity or type (column D2), details about the specific quality (column D3) and factors or habits related to the feature (column D4). The last step was identifying the type of wellbeing promoted by this specific feature whether it was mental, social or physical wellbeing (column E). These features were selected from a variety of landscape literature used as a reference (column F). Table 1 shows basic components of how street features were identified and extracted (*Please find Appendix 1 for the synthesized tables (2&3&4) showing social, build and nature-related features respectively that were identified from literature in English*).

Table 1 Basic components of the expanded table for landscape features that may promote wellbeing

A	B	C	D				E	F
			D1	D2	D3	D4		
General category of street features	Classification of general category of street features	Street feature or element	Characteristic/ qualities / notions of street feature				Type of wellbeing promoted	Articles
			General aspect	Specific entity/ type	Details about the specific quality	Factors/ Habits related to features		
Social- related features								
Physical-related features								
Natural- related features								

D. Streets as Restorative Landscape

Based on the above synthesis process, the streetscapes aspects are commonly classified into social, build and nature-related features. These identified landscape features, however, have been extracted from Europe and North American and they remain untested in more arid climates of the Mediterranean such as in Lebanon. There is none existing research on what are the actual landscape features that may promote wellbeing in Beirut’s streets. This thesis therefore addresses the gap in our understanding of identifying these restorative landscape features and their role in promoting people’s wellbeing especially in a local context and culture like Beirut. Based on what may work in streets of Beirut, the extracted landscape features from above literature are presented below:

- From the social-related features:

Examining the general characteristics of livable streets in terms of sense of liveliness, sense of familiarity, sense of belonging to community, and even presence of

different types of activities and features of social streets in terms of various possibilities for social contact, level of diversity and the social behavior of people in streets.

- From the build-related features:

Physical attributes related to pedestrian activity such as the presence of street furniture and windows on the street, the presence of active street frontage as well as some urban design qualities related to the build features of the streets and their edges such as imageability and complexity in terms of presence of people and outdoor dining, enclosure in terms of continuous building facade, human scale in terms of presence of first floor windows and small planters and even street furniture, transparency in terms of visuals of buildings and level of activity along the street, may be principal factors to promote human wellbeing. The design of urban settings and spatial dimension of streets and architectural features of build such as building height and façade details may play an important role in defining wellbeing in Beirut's streets.

- From the nature-related features:

Urban green elements such as the characteristics of flower beds in terms of their availability, color or arrangements, street trees in terms of the level of density, arrangements and level of canopy cover, and even grass present in streets in terms of their availability and maintenance, seem important natural factors to consider when trying to understand what green elements affect wellbeing. Characteristics related to design of green spaces, green build interventions, informal green spaces or even just nearby green areas in the neighborhood such as parks or gardens may contribute to the level of experiencing wellbeing in the streets.

The below chart summarizes the synthesis of three different aspects of streetscape and specifies what are the extracted landscape features of each aspect that potentially promote wellbeing (Figure 2).

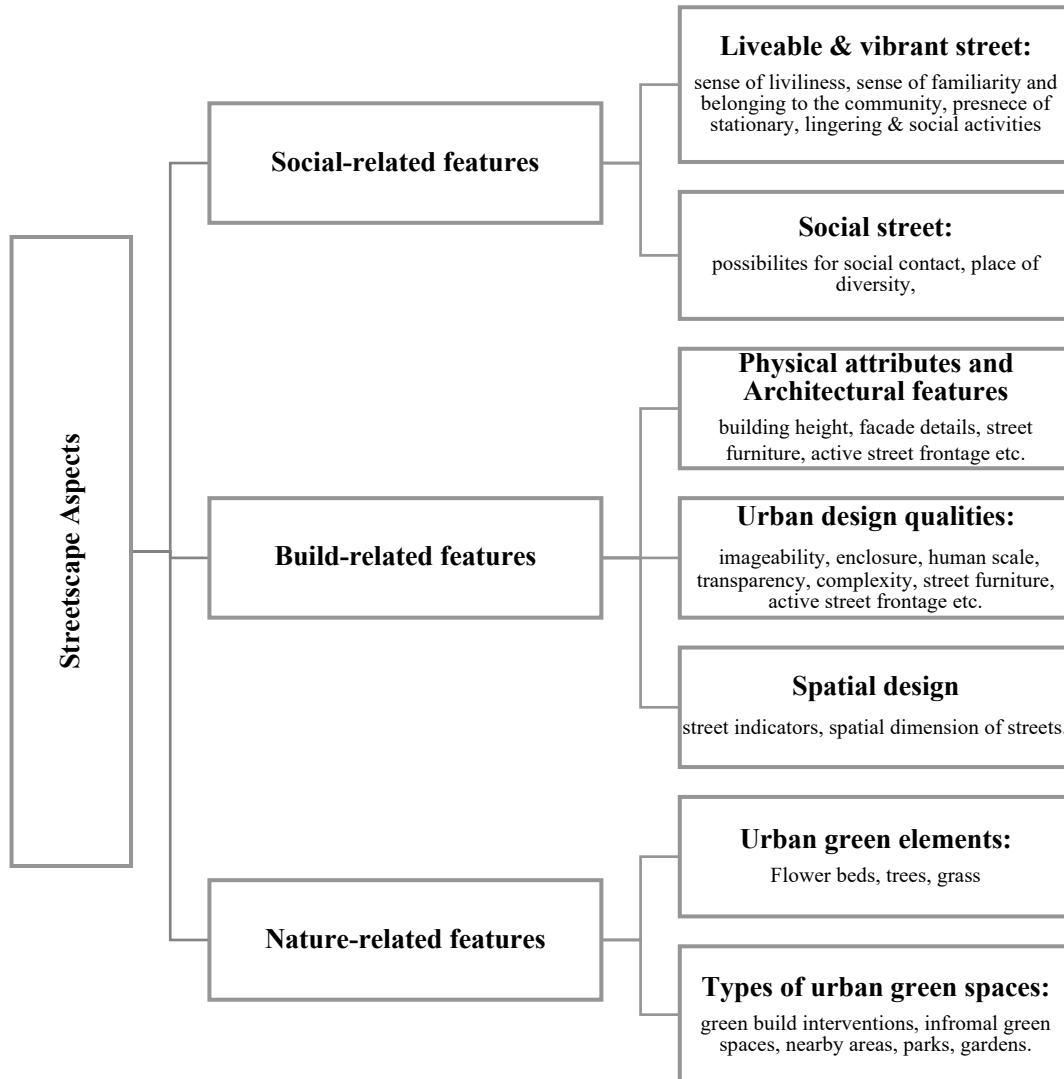


Figure 2 Summary chart of main street features that promote wellbeing

CHAPTER III

RESEARCH METHODS

To explore the potential of Beirut's streetscapes in promoting wellbeing and understand what their restorative landscape features are, this qualitative thesis' applied methodology is divided into several parts each complementing the other to provide enough knowledge about the topic and serve my thesis purpose. They include the following:

- Identify from the literature review the landscape features that may promote wellbeing.
- Examine Badaro as my case study in attempts to introduce and describe its available features and streets.
- Conduct go-along interviews in order to examine people's experience of Badaro's streets in terms of wellbeing.
- Discuss the go-along findings with the literature to further develop the understanding of the restorative features in the case of Badaro.
- Propose design recommendations in order to enhance the restorative aspects of streets based on the research findings.

A. Conceptual Synthesis from Literature Review

The thesis launched its field study by relying on academic writings from which a synthesis was presented. My research question provided a structure how to approach and shape my literature review. Sources consulted in the review included books,

relevant original studies and literature reviews from peer reviewed journals; they were identified from AUB electronic databases. Key search terms for the literature exploration were selected from two broad areas: streetscapes or street-landscape and wellbeing or health.

- For streetscape, keywords such as landscape, urban environment/ setting, healthy urban place, city, urban nature, streets, streetscape, street-landscape, street vegetation were used as search terms.
- For wellbeing, keywords based on Abraham's framework such as wellbeing, health, quality of life, feel good, function well, restoration, stress recovery, mental health, physical health: physical activity, social health: social support, social integration, social cohesion were used as search terms.

All possible two-word combinations of single terms from both areas were employed. Based on the above, some articles were allocated, selected and examined thoroughly to select the layers of streetscape that promoted wellbeing. These streets' layers were divided into three aspects as shown in my literature review. This also has created a base to describe my case study tackling social-related features through characteristics of livable and social street; physical-related features of street through architectural features, build attributes of street, urban design qualities of streets; natural-related features through urban elements and urban green spaces. Key features from the examined literature review were used as references to create the synthesized tables *(Please find Appendix 1 for the synthesized tables in English)*.

B. Case Study Description

The second way to collect data was by examining and describing Badaro as my case study. The selected landscape features from literature review created a guide to follow when approaching the study site. This was supported by taking observational notes as natural way to familiarize myself with the selected neighborhood. I had also spent some time walking and touring in the streets; I had come up with additional criteria to support my literature selected street features when generally describing the neighborhood and its streets. They included the following:

- The location: where the selected neighborhood was situated.
- The general context of the selected site: this included the surrounding of the neighborhood and boundaries. Human and cultural context were also considered such as activities and patterns in the site.
- Build- related features or landmarks: such as existing buildings, walls, types of streets and utilities present along them such as schools, coffee shops, restaurants etc.
- Circulation: vehicle and pedestrian movements within the neighborhood, timing and duration of these movements, level of traffic etc.
- Natural-related features or landmarks: such as street vegetation or topography, focusing on types, distinctive qualities, quantity, quality etc.
- Sensory: this included engaging all my senses in the process of taking notes. visual, audible and olfactory senses were all considered.

After the observation process of the site was done, Badaro's streets and their features that promote wellbeing were identified and described accordingly in relation to Badaro's existing social, physical and natural layers.

C. Go-along Interviews

Most qualitative studies in landscape discipline included mobile-based methods combined with walking and talking in attempts to elicit a sense of connection with places (Costa, 2019). In attempts to study people's relationships with streets and identify what were their restorative street features, go- along method was adapted as my third source of data collection to elicit richer and more specific place-based stories, memories, and perceptions (Evans, 2011). This novel qualitative method allowed for a better understanding how place and space matter for people by improving the research dynamic where participants were more comfortable outside the confined of formal research settings (Carpiano, 2009; Hoven, 2010).

The study site was determined in advance as it had advantage of focusing the interview on specific places that were relevant to the goals of this study; however, the routes or streets were determined by the interviewee. The participants were accompanied in their familiar street where the on-site interview was conducted on foot (walk-along). The participants led the walk and served as "tour guides" and as such their lived experiences were better comprehended. The generated information was subjective in nature and showed people's personal and direct involvement where they were able to express and contextualize their thoughts more freely and naturally allowing me a deeper insight into their experience and the street features affecting it.

1. Study Site

Badaro was selected site based on several factors that were important in the creation of a positive environment for wellbeing:

- Relatively high level of vegetation and a diverse vegetation typology in Beirut.

- Pedestrian friendly environment within a mixed-use neighborhood, allowing for a safe and accessible space with a lively environment.
- Presence of a heritage buildings and other physical assets along the street that make streetscapes attractive.

2. Targeted population

The participants were users of active neighborhood generally near green streets in the selected area. They included residents, shop owners, shop employees, citizens walking or using facilities along the street. The sample was balanced in terms of gender and included participants ranging in age from early- twenties to early sixties, regardless of race, religion and socio-economic status. Participants below 18 years old were not included in this study. The selected number of participants was determined precisely during the study where an understanding of the cut off number was developed. This took place based on saturation of data that I got when I was in the field. A sample size of eight users in Badaro were reached.

3. Sampling strategy

Purposive or purposeful sampling was used to gain as much knowledge as possible about the people and local context as a way to direct the generation of data gathered during the go-along interviews. Purposive sampling had provided the study with data for analyses. The initial generated data for every go-along interview -whether collected by recording audios or writing reflexive notes- were transcribed, coded directly and analyzed in parallel manners before proceeding with the next go-along interview. The codes and categories or themes were developed from the first data set where they had allowed me to identify and follow clues from the analysis.

4. Recruitment

Recruitment started as soon as the official approvals had been secured from (1) International Review Board (IRB) for ethical study revision and (2) Dean's Office of Student Affairs for my off-AUB campus involvement, between February 2020 and March 2020.

The potential participants from purposive sampling were approached individually using an invitation script. Those who were willing to participate in the study were recruited. An oral consent was obtained prior to their participation where participants were debriefed about the study and asked them whether they were interested in participating. They were asked if the interview could be audio recorded for better demonstration of the exact local urban overall experience feeding our objectives. They were also asked if I could take a short video recording during our walk. If the participants refused to be audio or video recorded, handwritten notes were taken instead. These notes were a combination of on-spot written hand notes during the go-along and field reflexive observation/ notes after the go-along was being conducted. Moreover, participants were consented if I could take photographs along the way for places of their interest that might include any sites/landscape features that had identified as promoting wellbeing. All whole recruitment process and go-along interview was done using my native language, Arabic. The participants were given a copy of the written script of the oral consent to keep and refer to as information about the study and their rights, and to provide them with the contact information of the research team and IRB (*Please find Appendix 3 for the oral consent script both in Arabic and English*).

The recruited participants were asked to choose a street that made them feel the most comfortable, happy and relaxed in their neighborhood. They chose the day and

time based on their availability. They were informed about the procedures of the activity. All were met individually and provided with the interview guidance.

During the walk, unstructured questions supported by probing questions were asked. These questions were derived from literature investigating what features contributed to general qualities of wellbeing in an urban setting; this assisted me in analyzing the collected data (*Please find Appendix 4 for the study guidance and unstructured questions the both in Arabic and English*).

The period of time to complete the walk was at the participant discretion taking between 20 and 60 mins. and were impacted by several factors including length of the chosen street walked during the go-along (distance covered), environmental/ weather conditions (sun, wind, rain) and other personal variables (time and availability of the participant, comfortability, willingness to walk etc....).

All of them were audio-recorded expect for one go-along interview; written notes were taken during and at the end of interview. A total of eight go-along interviews were conducted during February 2020 and March 2020 during considerably altering weather conditions. Most of them were at noon or afternoon when participants were usually available.

5. Interview Guide

Unstructured questions were developed in the interview guide to direct the discussion. The questions were derived from literature and formulated based on the Abraham's framework discussed above in attempts to the questions focused on general wellbeing qualities in the local urban setting. The unstructured questions were piloted first in order to ensure clarity, comprehensiveness and logic and revised accordingly. (*Please find Appendix 4 for the interview guide both in Arabic and English*).

When the respondents shared what they think about their urban experience and decided that they have nothing else to add on what they already verbalized, then the interview was considered complete. The data collection and data analysis were done concurrently. Hence, the questions were adjusted based on the yield of the analysis, a process often used in qualitative go-along research to ensure that the constructs of the emerging theory were grounded in participants' views and perceptions. Following each interview, I listened to the audio, if any, transcribed it, and started the thematic analysis phase.

After each interview, self-written reflexive notes related to the street and the interview dynamics were written up as soon as possible and I recorded memos to strengthen the data quality. Both procedures were useful as they allowed me to ensure that adequate information was obtained that facilitates analysis of the interview.

6. *Data analysis*

Every go-along interview was analyzed by means of thematic analysis, a relatively straightforward and flexible method used in qualitative analyses (Braun & Clarke, 2006). Interview audios were transcribed verbatim. The field observational notes or memo notes and pictures were maintained to support the analysis.

First, I immersed the generated data by transcribing audio and reading through the initial notes taken and generally looking through the data to get familiar with it. I then created an initial thematic framework based on the main research question and the ideas that emerged from the reading. Second, I started generating initial codes in a systematic fashion. Third, I searched for and identified themes rather than codes. I even created a thematic map to help sort the different codes into themes. This was done by

the tabulation and synthesizes of data to create a local knowledge that can be used for further analyses and interpretation. Fourth, I reviewed the themes by checking if the themes worked in relation to the coded extracts and if the themes worked in relation to the entire data set. Fifth, I defined and name the themes by identifying the essence of what each them meant. This was done by creating a story for each theme. Sub-themes were also identified for structuring the complex themes. Finally, I wrote up the analysis to refine it (*Please find Appendix 5 for the Phases of Thematic Analysis in English*).

The data analysis process always took place in a private area away from any interference to make sure that privacy and confidentiality of the participants were maintained. I continued the series of interviews-analysis-interviews until I reached saturation (i.e. no more new themes were emerging). Extracted quotes from were used later in this thesis to support aspects of the analyses. (*Please find Appendix 6 for the Checklist of Good Thematic Analysis respectively in English*).

7. Ethical Considerations

Approval from the IRB and Dean's Office of Student Affairs had to be obtained prior to conducting any go-along interview. Participants who were approached by myself and approved to participate in the study, were handed a copy of the written script of the oral consent form explaining the purpose of the study, the process of data collection, the risks and benefits as a result of their participation, and that they can withdraw from the study at any time without any consequences affecting their relationship with AUB. They were asked to keep and refer to it as reference information about the study and their rights, and to provide them with the contact information of the research team and IRB (*Please find Appendix 3 for the oral consent form both in Arabic and English*).

After introducing myself and re-iterating the purpose of the study, I made it clear that they had the right to refuse to answer any question, with no penalty to them. I made sure that they understood all the risk and benefits and for that to happen, the form was explained in detail. Since the study will take place in public streets, at any point during the study, participants knew that they can change their mind, even after consenting, and withdraw without accruing negative consequences.

They knew that written observations would be written down along the walk and were also assured that data was used for research purposes only. They were consented for audiotaping and taking a short video and pictures of street features only. Also, consent for publication was also obtained. They understood that all study recordings were recorded via a password protected phone, and that the recordings were immediately deleted once transcribed to ensure confidentiality of the information and anonymity of the participants. They also knew that all study data (audio/visual recordings or pictures) were kept on a password protected laptop in a protected folder with only access granted to the principle investigators. All study data were no shared with anyone. All study data were to be destroyed after 3 years (i.e. deleted/shredded).

I ensured that the participants' identity wasn't be disclosed; pseudonyms were used with any quotes attributed to them. All data were represented as aggregate data and had no identifiers that could be linked to the personal responses of the participants. Opinions shared during the discussions were kept confidential and used only as collective information. Discussions and data analysis always took place in a private area. Questions asked were short and concise and didn't cause any harm or discomfort to participant.

D. Comparative Analysis and Discussion

The discussion critically compared the go-along findings with literature to highlight major aspects and insightful findings that stood out. This was followed by the explaining the scope and limitations of the go-along method and overall study as well as offering a set of future implications to assist the design and planning for optimal restorative streetscapes.

E. Design Recommendations for Restorative Streetscapes

A set of street design recommendations was proposed based interpreting and analyzing the information acquired from the go-along interviews. They served as conclusions of discussion that would be beneficial for the creation of healthy and restorative streetscapes.

CHAPTER IV

CASE STUDY: BADARO

A. General Introduction to Badaro

The following chapter explores Beirut as a general location narrowing it down to focus on Badaro as my case study. Due to the rapid urbanization and limited availability of green spaces, Badaro is one of the vegetated and attractive cities in Beirut that has potential to play a major role in promoting human's wellbeing. For this reason, Badaro's profile is examined as a neighborhood where its principal layers and elements are identified and described comprehensively to have a better understanding of their nature.

1. Geographic context

a. Beirut

Capital of Lebanon, Beirut is located on a peninsula encompassing westward into the Mediterranean shores. It preserves an abundant and various historical, cultural, and ecological inheritance. Although no recent population register has been conducted, most of the Lebanese populations are situated along the Beirut's coast. The coastal location of Beirut allows for a dry-summer subtropical climatic condition characterized by mild days and nights. This Lebanese Mediterranean climate has four seasons of relatively balmy autumn, rainy winter, amiable spring, and very warm rainless summer.

Although Lebanon is a hotspot for biodiversity and reservoir of plant variety, the availability of green spaces in Beirut are limited due to high levels of urbanization.

However, Badaro is one of the remaining vegetated neighborhoods preserved in Beirut (Figure 3).



Figure 3 Aerial Map of Beirut, Lebanon

Source: Google Earth (2020)

b. Badaro: Beirut's Village

Badaro, a famous residential neighborhood and business hub, is my selected site. One of the most appealing vegetated cities in the middle of Beirut, Badaro is a charming place with leafy streets to wander during daylight and lately an entertainment destination during the night.

Based on Badaro's aerial map from Google Earth, it is roughly restricted by the Pierre Gemayel avenue on the north, the Hippodrome on the west, Sami el Solh avenue

on the east, Beirut's pine forest on the south east and the Tayyouné roundabout on the south (Figure 4).

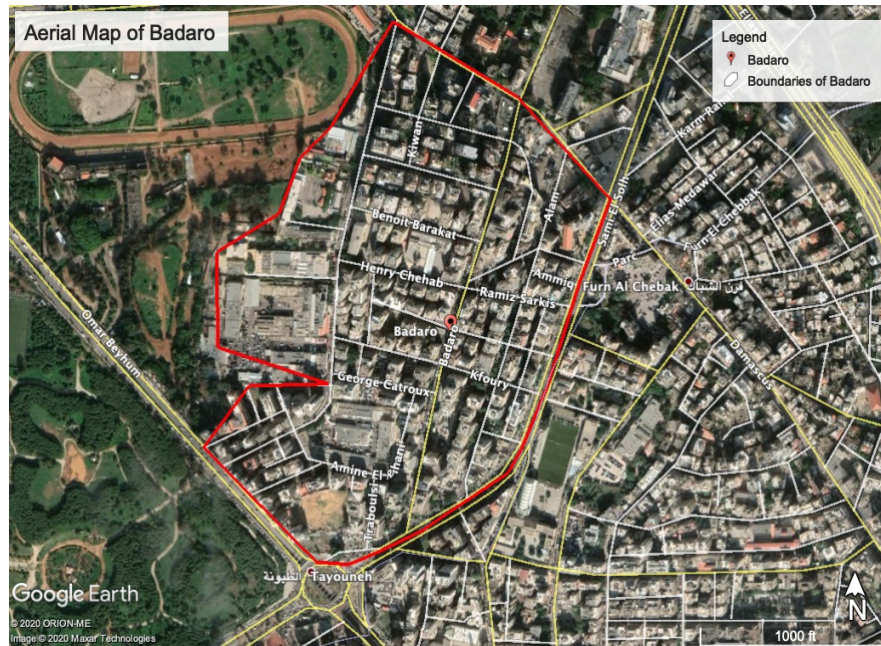


Figure 4 Aerial Map of Badaro showing Badaro’s boundaries with red contour

Source: Google Earth (2020)

2. *Historical Value*

a. Badaro in the Past

According to what was commonly known in old chronicler’s report, Badaro had witnessed numerous historical and cultural transformations in the past decades.

Originally, Badaro was a pine forest extending from the sea to the northern border of the area. In the 17th century, Emir Fakhreddin, the ruler of the Principality of Lebanon, planted Badaro with pine trees as a way to stop the spread of sand to the south of Beirut.

After the end of World War I, Michel Ecochard decided to plan Badaro as a residential neighborhood along the eastern border of Beirut Pine Forest. Badaro's main street was renovated and named after a rich industrialist named Habib Badaro (Figure 5).



Figure 5 An old Postcard: "The Pine Promenade" showing the old Pine Forest
Source: Serof, (1999).

b. Demographic and Economic Context

In the 1960s, Badaro's demographics was fundamentally distorted when prosperous Syrian Christian families from Aleppo and Damascus fled their country dreading laws related to Arabization and nationalization. They decided to settle in Badaro's low rise building of postmodern architectural style. This caused a thrive in the neighborhood's construction and obliteration of its pine trees.

During the long years of the Lebanese Civil War, Badaro was a vanguard Christian neighborhood. Most of its inhabitants hence evacuated to Europe or safer parts of the country. This resulted in a decline with the commercial landscape of Badaro thus affecting the overall economy of the neighborhood. Nevertheless, Badaro has seen a bloom in its economic structure lately; it has been exclusively revamped and repaved where new demand for retail on Badaro street has emerged.

3. General qualities and features of the neighborhood

a. Social aspect of Badaro

In the recent years, Badaro has become a highly- active dynamic mixed-use neighborhood. It has a strong social and cultural identity expressed by the availability of people and their various activities.

Generally, human and cultural scale is very noticeable in this pedestrian area. People from diverse backgrounds, class, nationalities and ages coexist, interact with each other. Yet, the level of human and social scale varies greatly depending on the physical characteristics and type of the streets. When compared to other neighborhoods, Badaro can provide a sufficient level of safety for its users. There are many army checkpoints and security cameras around almost every corner of a street as it is considered a security zone area filled with governmental facilities. Additionally, Badaro is mainly crowded, noisy yet lively during weekdays especially in the morning and noon. However, this stressful period is over during weekends and in the afternoons where Badaro turns into a peaceful village; birdsongs could be evidently heard. At night, this soothing state is somehow disrupted by the nightlife where loud music dominates the area (Figure 6).



Figure 6 Social life in Badaro

Source: <https://www.beirut.com/l/33248>; <https://www.beirut.com/l/78>

b. Physical aspect of Badaro

Badaro is mainly residential neighborhood characterized by smooth well-designed network of heterogeneous streets. They are of diverse characters, but all can promote walkable landscapes. Badaro's streets are either primary, secondary or tertiary. Differentiating the type of streets in Badaro depends on several factors such as the network of vehicular circulation, streets' width, level of access, and level of street activities.

Primary street is usually the main connector of circulation in the middle of Badaro. It is a central street and have the highest level of vehicular flow. Primary street is also a high access point where people depend on it to commute even if they don't live in Badaro. It is relatively wide as there are numerous cars parking along both sides. Most of the neighborhood's activity is present along its sides. Whereas secondary street is often a minor but a significant connector in Badaro. It provides access to properties within this residential area. Compared to the primary street, the secondary street is

moderately less wide with lower vehicular flow and parking on both sides of the street. The level of activity along its sides is less evident than that in primary street. As for tertiary street, it is typically smaller, shorter in length and narrower in width when compared to secondary street. The level of activities is nearly null with minimal vehicular flow and almost no space for cars to park along its sides. Badaro's physical context is thus defined by each street's identity, level of ground activity, general build qualities, traffic volume, and many more.

The below aerial map shows Badaro's main network (Figure 7):

- One primary street is traced in yellow line.
- Three major secondary streets are traced in dark blue line.
- Tertiary streets are traced in orange line.

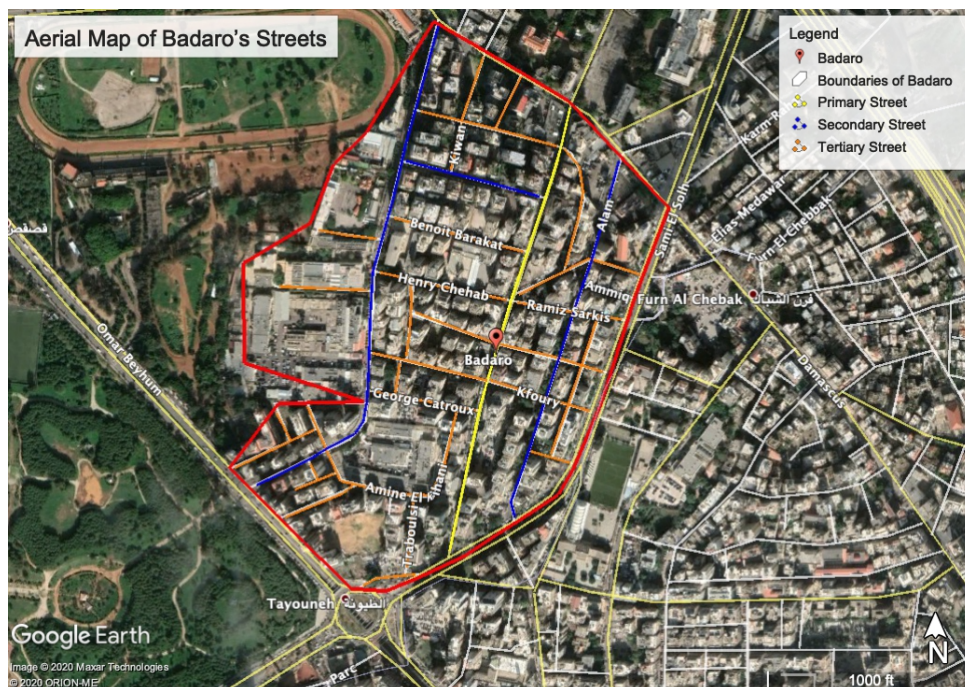


Figure 7 Aerial Map of Badaro's streets

Source: Google Earth (2020)

As for Badaro's buildings, they are characterized by mainly low-rise residential and some commercial buildings. They are combination of both modern and old constructions of varying styles and architecture designs.

c. Natural aspect of Badaro

Badaro's vegetation can be found in different locations such as the streets, buildings, entrances, walls, parking, private gardens, roofs and many more. Besides that, there are three green parks or spaces situated nearby this green neighborhood: a public pine park known as Horsh Beirut, a private park and a horse-racing facility in Beirut's Horsh district known as Beirut Hippodrome, and a private park as well as a historic monument know as French ambassador's residence.

B. Badaro's Main Layers

This section identifies the main social, build, and natural layers of Badaro's streets. Each category is presented and described to understand its details and aspects thoroughly. It is important to note that Badaro's social layer is interconnected to its physical layer. The degree of Badaro's social life may be influenced by the type and build characteristics of the street itself whether it is primary, secondary or tertiary. Therefore, understanding Badaro's streets is a critical step to recognize social life across them. As for the vegetation layer, it can be examined as a separate entity as it is complex layer by itself.

1. Social layer

Badaro's first layer is related to the existing social features. The social composition of this neighborhood is examined through its level of social life in terms of

human scale, types of sociability as well as the types of active facilities existing along its streets.

a. Social life in Badaro's streets

Badaro's social life can be understood through several factors such as the presence and number of people, level of human diversity, types of behaviors and activities available, presence of active facilities and many more.

Although all streets are safe, open and accessible by the public, the social life varies across the types of Badaro's streets, whether they are primary, secondary or tertiary streets. This is due to the presence of different physical street aspects that support and shape the social life in Badaro. For example, they may vary in the combination of street features that is affected by businesses and land uses or combination of various physical aspects of the street. Also, the seating opportunities provided by some streets as well as presence of community gathering places can affect social life in Badaro.

Based on this, primary streets have high level of sociability while secondary and tertiary streets have less evident social life along their sides. This will be elaborated more in Badaro's build layer section.

i. People of Badaro

Badaro is portrayed by a distinctive human scale as it is a high place of diversity. Wide-ranging social life with many various groups of people and activities exist in this neighborhood (Figure 8).

Individuals of different socio-economic groups are found in Badaro despite the presence of high-medium quality places that relatively rises that of Badaro's level. For example, local residents, office and law firms' employees, coffee shops and restaurants employees, school or university students, elderly, children, working emigrants, visitors or just trespassing passengers are present throughout the day or even at night.

Most of these individuals use the multi-facilities existing within its streets; they are seen in several age groups and class engaged in a variety of active or passive social activities and behaviors. They are always present within this street; they are either seen in large number for short durations or fewer number available for longer durations.

ii. Types of sociability

People of Badaro are engaged in a wide range of social behaviors and activities. They could be engaged in passive, fleeting and enduring sociability. Some individuals are seen alone in public as part of their social behavior as an example of passive sociability. They are involved in public solitude like reading, working and only engaging in minimal and essential conversation. Some come to spectate other people and experience their senses while others just linger on the street to window-shop and amble on the sidewalk, sit, talk on the phone, eat, and more as a way to relax. Moreover, some people are seen in fleeting behaviors such as having small chitchat with neighbors or strangers, nodding, smiling, or even playing board games. Some children tend to play with bicycles and scooters in front of their buildings' entrances while others walk their pets along the sidewalk. As for behaviors of enduring sociability, some people tend to actively connect with their friends and the community by meeting up on regular and frequent bases; they gather in coffee shops, restaurants and pubs.



Figure 8 One of Badaro's pub

Source: <https://www.living-lebanon.com/visit-lebanon/beirut/food-drink/badaro>

iii. Types of Badaro's Active Facilities

People usually use many facilities in Badaro. Most of Badaro's multi-facilities and businesses in terms of wide range of social, political and economic activities are located in its primary street. People have access to this public street whenever they want, and they can use its facilities freely. Whereas in secondary and in tertiary streets, this number of active facilities is less evident.

Some common active facilities found in Badaro are the following:

- Commercial Establishments

There are variety of commercial establishments such as some small independently owned groceries stores, local chains mini markets. Badaro also includes variety of restaurants, fancy bars and blooming cozy coffee shops of distinctive styles.

- Schools and Churches:

There are lots of reputable schools and churches from various denomination exposing the mixed-communal identity found in this area. Four main schools are

located in the neighborhood: College Louise Wegman, College Saint Sauveur which is correlated with the Jesuit Jamhour college, Syrian Catholic Lycée du Musée and Franciscan school. Additionally, there are some churches found in Badaro such as: The Sacred Heart of Jesus Maronite church, Maronite church, Notre Dame of Lourdes, Notre Dame des Anges Roman Catholic church, Protestant churches (Figure 9).



Figure 9 Churches in Badaro: Notre-Dame-Des-Anges & Roman Catholic Church

Source: <https://www.wikiwand.com/en/Badaro>

- Museums and Hotels

Two outstanding museums are located in this neighborhood: National museum and the Mineral Museum which signify a deep value for many Lebanese (Figure 4). The area around the museum square includes many of French facilities such as Université Saint Joseph campuses, the French embassy and consulate, and the Pine Residence. Facing the museum, there is a small garden with Byzantine floor mosaic where it contains a tomb of a war Lebanese soldier as well as a Roman era colonnade. A well-known hotel, Smallville hotel, is located near the museum depicted by its unique stylish

interior design. A very pleasant Syriac Catholic patriarchate, an amusing palace surrounded by a pacific garden, is located on Damascus street, facing Smallville hotel.

- Firms and Health Institutions

There are many corporate headquarters and high-rise office towers especially for major banks. Likewise, Lebanon judicial and legal activity is situated in Badaro such as Ministry of Justice, many law firms, National Social Security Fund, Ministry of Post and Communications and Ogero. Likewise, several hospitals are found in this area such as the military hospital where it enclaves many pharmacies, shops and organizations, dedicated to members of the military and their families. As for open spaces, there are several parking spaces ranging between private residential and commercial ones.

b. Social-Related Features across Badaro's Streets

All Badaro's streets are safe and contribute to the sense of familiarity and belonging to the community. However, the social life of primary street is the highest in terms of presence and number of people, level of place of diversity, types of available sociability and presence of active multi-facilities. This level of social life is less evident in secondary streets to become almost minimal in tertiary streets. The below table summarizes street features in terms of social aspect. These features are identified and located across Badaro's streets (Table 5).

Table 2 Social- related features across Badaro’s main streets.

Street’s Social Layer	Primary Street	Secondary Streets			Tertiary Streets
	Main	Kfoury	Taleb Hobeich	Parc	
Sense of liveliness	High	Medium-Low	Medium-Low	Medium	Low
Presence of people	High	Medium-Low	Medium-Low	Medium-High	Low
Level of place’s diversity (people of different socio-economic, age, class, nationality, etc.)	High	High	High	High	High
Presence of active multi-use facilities	High	Low	Low	Medium	Low
Sense of familiarity & belonging to the community	High	High	High	High	High
Easy accessibility to the public	High	High	High	High	High
Presence of small local businesses & informal gathering places	High	Medium-Low	Low	Low	Low
Presence of different types of sociability	High	Medium-Low	Medium-Low	Medium-Low	Low
Possibilities of social contact	High	Medium-Low	Medium-Low	Medium-Low	Low
Presence of stationary, lingering, and social activities	High	Medium-Low	Medium-Low	Medium-Low	Low
Presence of passive, fleeting & enduring behaviors	High	Medium-Low	Medium-Low	Medium-Low	Low
Sense of public safety	High	High	High	High	High

2. Physical layer

The second layer of Badaro is related to build features. Badaro and its streets are explored in terms of types, main essence, ground floor life, general physical attributes and level of walkability.

a. Main Streets of Badaro

Based on the previous differentiation of streets' types, there is one primary street in Badaro along with three significant secondary streets and numerous tertiary streets. Despite their differences, Badaro's streets have some common features among them.

All streets are pedestrian-friendly creating a network of small spaces connected in a holistic way. They have well-defined sidewalks of diverse width. These streets are well-maintained and have their own exclusive landmarks such as specific buildings or certain facilities available within them. Adding to that, they are safe and secure streets due to good lighting system at night. Signs related to road directions are placed along the path offer information useful for the pedestrians. There are also small metallic signs fixed on the building's or utility's walls specifying the street's number and name as well as signs for removal of pets' wastes when people take them for a walk. There are similarly park meters along primary and secondary streets as well as trash cans in almost all streets.

As I mentioned before, the physical aspect of streets also affects the level of Badaro's sociality. That's why when examining the different types of Badaro's streets, it is important to understand their core significance by examining what significant landmarks buildings are present as well as the level of ground floor activities available.

This is done by linking these elements to their physical attributes and level of walkability.

i. Primary Street: “Main street”

Badaro’s primary is called Main street. It is the most active and busy street in the neighborhood. It is considered complex, vibrant yet chaotic. It is known for having most of Badaro’s social life along its sides (Figure 10).

Social interaction is easily detected due to strong social contracts and exchanges among people especially at the ground floor of fronting shops and multi-purpose facilities such as café, restaurants and banks. It is hence a hot spot for socialization where it is able to support different kinds of human activities and behaviors.

Some of stationary and lingering activities detected in this street are sitting, standing, dining, reading, shopping, window-shopping, smoking, and many more whereas some of the social activities existing are talking, chatting, walking pets, watching other people, jogging walking and more. These activities are performed alone or with a company. Adding to that, different odors are picked up along this street varying from coffee, alcohol to food.

The presence of numerous facilities along this street creates a safe and welcoming environment. This is part of the street’s transparency where people are able to see various activities around them since most of the ground floor contains doors and windows. Moreover, Main street is considered wide and open as it has a medium sky exposure. It has moderate amount of sky visible compared to the number of street trees and buildings along its sides.

As for the buildings in this street, they are old in age and often show signs of bullets because of war. Most of them are dull and not renovated or restored and they maximum reach around 6 to 8 floors. However, almost at the end of this street, there is an interesting combination of modern and old buildings standing next to each other.

There are several seating opportunities in this street either next to café and pubs or independent elements on the sidewalks such as benches. As for the pedestrian movement, it is easily accessible because there are clear traffic signs and well-defined sidewalks for people to circulate. Furthermore, the vehicular circulation flow in Main street is moderate to high during working hours but low after. This causes high levels of traffic and noise due to car horns and loud citizens.



Figure 10 Some images from Badaro's Main street

ii. Badaro's Secondary Streets

The most three well-known significant secondary streets in Badaro are Kfoury, Parc street, and Taleb Hobeich street. People recognize them directly as each of them has its own identity and character. These are discussed more in this next subsection.

All secondary streets are considerably socially less active and eventful than the primary street. They are considered more pleasant and relatively quieter; they are moderately wide and considerably have higher level of vegetation

Compared to Main street, the level of ground activity is less along these streets as they have fewer number of shops, pubs and eateries incorporated along their sides. The level of human interaction is also less evident due to fewer number of people performing similar activities like the ones found in the primary street. Moreover, fresh green scent can be sensed instead of the odor of food and alcohol.

As for the buildings in these streets, they are mainly residential. They are architecturally condensed with mainly attractive modern and old buildings. Some streets have mainly contemporary, well renovated and neat buildings with unique architectural design while others have historic heritage buildings. There are couple of streets that have combination of both types of buildings creating a unique atmosphere between the new look of simplicity and innovation in the constructional approaches and the old memorial construction.

All secondary streets have well-defined sidewalks; they are walkable and pedestrian- friendly yet there are no seating opportunities. As for the vehicular circulation flow in these streets, cars can park on both sides of these streets.

- Kfoury Street

Kfoury street is Badaro's most pleasant vegetated secondary street. It has numerous pine trees defining its edges. There are almost no active shops in this street. Unlike the Main street, this street looks more intimate as level of transition seems smoother. It looks cozier and more beautiful. It has lower sky visibility due to tall pine trees covering most of the sky along with attractive buildings lining up the streets. The buildings are mainly of old structure, but all are neat, maintained and alluring. The level of walkability is high in this street due to well-defined sidewalks (Figure 11).



Figure 11 Major secondary street in Badaro: Kfoury street

- Parc Street

Parc street is a major secondary connector in Badaro. It is also known as the museum street as the National museum is found at the end of this street. It is where most of Badaro's institutions are such as several schools, church and army checkpoints.

There is minimal ground activity in terms of active shops and restaurants. As for the street width, it is considered wide with parking spaces on both sides. It has well-defined sidewalks and pleasant fences along the school's side. It has both modern and old buildings next to each other (Figure 12).

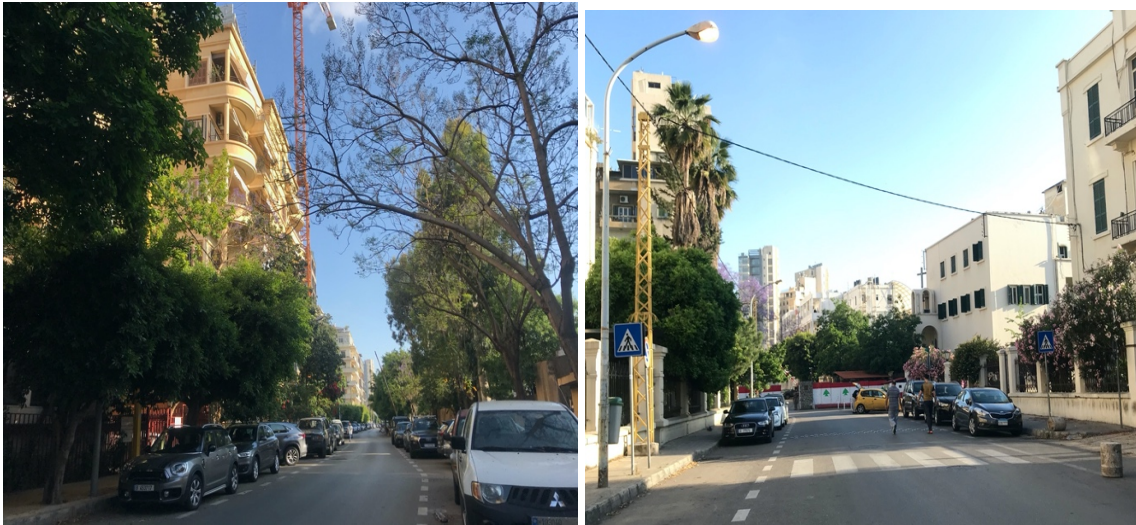


Figure 12 Major secondary street in Badaro: Parc street

- Taleb Hobeich Street

Taleb Hobeich street is a main secondary connector between Main street and Parc street. It is famous due to the presence of particular landmark as vertical green building along its side; Badaro Garden. There is insignificant ground activity expect for a colorful art shop. This street is new and wide with parking spots along both sides; however, there is minimal level of street vegetation except for Badaro Garden tours.

Similarly, to other secondary streets, it has well-defined sidewalk and high level of walkability (Figure 13).



Figure 13 Major secondary street in Badaro: Taleb Hobeich street

iii. Badaro's Tertiary Streets

Branching from secondary streets, tertiary streets have minimal social activity. They are considered highly vegetated narrow streets; they are pleasant and relatively quiet (Figure 14).

The level of ground activity is almost null along these streets. There are almost no facilities along their sides except for really few shops and pubs. Hence, the level of human interaction is also less evident due to fewer number of people performing similar activities like the ones found in the primary street. Like secondary streets, fresh green scent can be smelled. Birds are heard vividly instead of car horns.

Generally, these streets are slender and curvy. They are often kept for pedestrians and usually extend between, behind or within constructions and shops in Badaro. All of them have low sky visibility where some streets have tall and dense trees cover most of the sky and others have attractive buildings lining up the streets. As for the buildings in these streets, they are residential. They are combination of contemporary, well renovated and neat buildings with unique architectural design and historic heritage buildings.



Figure 14 Examples of tertiary streets in Badaro

The below aerial map of Badaro shows all streets network available in the neighborhood (Figure 15). They are identified with different colors as the following:

- Primary street: Main street is traced with yellow line.
- Secondary streets:
 - Kfoury street is traced with green line.
 - Parc street is traced with cyan line.
 - Taleb Hobeich street is traced with dark blue line.
- Tertiary streets are traced with orange line.

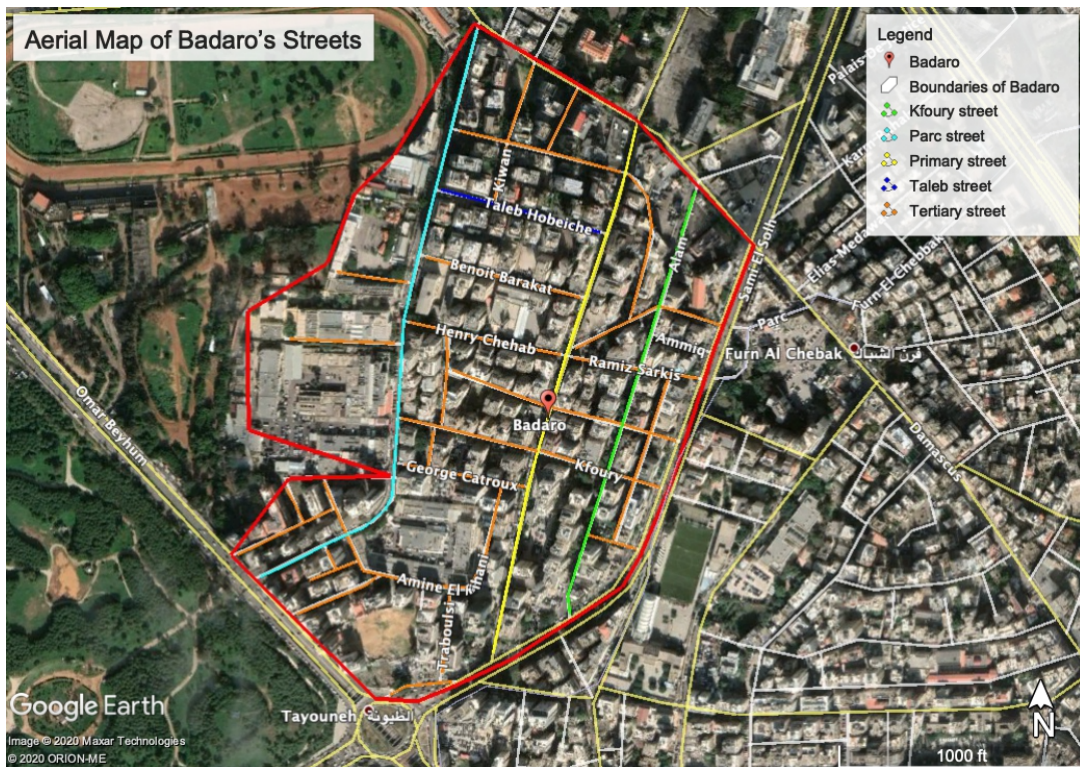


Figure 15 Aerial Map of Badaro's streets

Source: Google Earth (2020)

b. Physical- Related Features across Badaro’s Streets

As for the build features, each street in Badaro as a specific landmark, however they vary in the level of enclosure and transparency. They almost have same building details in terms of design and age. The level of human scale, complexity, presence of street furniture is seen the highest in primary street. All have high level of walkability, but the sidewalk width and flow of vehicular circulation varies across each type of street. The below table summarizes street features in terms of build aspect. These features are identified and located across Badaro’s streets (Table 6).

Table 3 Build-related features across Badaro’s main streets.

Street’s Physical Layer	Primary Street	Secondary Streets			Tertiary Streets
	Main	Kfoury	Taleb Hobeich	Parc	
Sense of Imageability	High	High	High	High	Medium-low
Presence of imageable landmarks	High	High	High	High	Medium-low
Presence of outdoor dining	High	Low	Low	Low	Low
Sense of Enclosure: Continuous street wall of building facades/ trees	Medium	High	Medium	Medium	High
Presence of human scale	High	Medium-Low	Medium-Low	Medium-Low	Low
Presence of first floor windows, small planters	High	Medium-Low	Medium-Low	Medium-Low	Low
Presence of street furniture	High	NA	NA	NA	NA
○ Presence of seating opportunities: benches					
○ Presence of signs, streetlights, park meters, trash cans, etc.	High	Medium	Medium	Medium	Low

Spatial layout of streets: Presence of well-maintained sidewalk & well-designed streets (clean, attractive, etc.)	High	High	High	High	High
Width of sidewalk	Medium	Medium	Medium	Medium	Low
Level of walkability	Medium	High-Medium	High-Medium	High-Medium	High-Medium
Circulation network Vehicular flow	High	Medium-Low	Medium	Medium	Low

3. *Natural layer*

The third category of Badaro’s layer is the nature-related features. It includes broad description of available vegetation in terms of major plant forms and urban green spaces present in Badaro’s streets.

a. Vegetation in Badaro

In comparison to other neighborhoods in Beirut, the level of vegetation in Badaro is substantial. This area is portrayed by having distinctive types of typologies and combination of formal and informal plant forms. Badaro’s vegetation is diverse in terms of quality and quantity and as mentioned before, it is found in distinct places such as: streets, buildings, parking spaces, and more. Also, there are many highly valued green areas such as urban green parks, small pocket parks and community garden adjacent to Badaro. They differ in several notions like accessibility, maintenance, natural variation in terms of type, quality, quantity, colorfulness, arrangement, and general impression.

b. Street Vegetation

Badaro's street vegetation has different identifiers and takes different forms such as specimen focal plants standing alone or with a bundle of other trees and plants. They can also take the form of green pots distributed around diverse locations like entrances, sidewalk, alleys, between buildings, parking boundaries, restaurants and shop façades or even as private gardens.

i. Street trees

The principal natural feature found in Badaro is the street trees. Almost all streets have a number of trees along their sides. Some street trees are evergreen species of rectangular manicured shape; they are evenly distributed along both sides of the street. They are usually of medium size and similar height resulting in insignificant canopy cover (Figure 16). These formal street trees are found mainly in Main street and Parc secondary street. Yet, such type of trees is almost absent in both Kfoury and Taleb Hobeich secondary streets and in the all tertiary streets. On the other hand, some streets trees are informal, unstructured and distributed haphazardly; they are in different shapes and sizes (Figure 17). They are mainly found in the narrow tertiary streets. Whereas some trees are a combination of both manicured trees and amorphous trees; they are usually found in Parc secondary street and in some tertiary streets.



Figure 16 Manicured evergreen street trees in primary and secondary streets



Figure 17 Random unstructured in tertiary street trees

Some street trees are present as independent focal specimen. They are often evergreen huge trees with significant canopy like the one in the end of Kfoury street (Figure 19). There are also specific trees species such as olive trees positioned in the middle of Main's street intersection or in front of some buildings as well as culturally distinguishable trees such as pine trees in Kfoury street. These old pines are found shaping the street's edges and creating a significant canopy along the street (Figure18).

It is important to note that natural soundscape such as bird sounds are practically evident in these trees.



Figure 18 Pine trees defining Kfoury street



Figure 19 Focal large tree

ii. Plant Pots

Another interesting nature-related feature found in Badaro's streets is plant pots. Available in different sizes and shapes, potted plants seen at lining the edges of sidewalks or defining the path for walking. They are also placed either on the building's entrances, schools, shops and pubs (Figure 20).



Figure 20 Plant pots in Badaro's streets

iii. Green walls

Some pubs and restaurants in primary street have green walls covered with climbing plants crawling all over the windows and doors. These plants create a unique green ambience as they are part of the decorative design of these eateries. Also, some residential and commercial buildings have climbing or spreading plants cover their walls (Figure 21).



Figure 21 Green decorations of restaurant and pubs

iv. Vegetation in buildings

As for Badaro's structures, almost all residential and some commercial buildings are highly vegetated and have foliage integrated within them as part of their architectural design. However, whether old or modern structures, vegetation within them varies greatly. In terms of location, vegetation can be seen as part of buildings' balconies, main entrances, building walls, fences, part of the façade or even roof top etc. (Figure 22).

In terms of type and pattern, some buildings have consistent kind of plants arranged in formal configuration whereas others have different plants of random shape and type. Furthermore, several buildings have private gardens; they are seen in front the buildings' entrances or as roof top gardens where substantial amount of plants and trees is observed. An example of a fascinating self-contained residential division in this neighborhood is Badaro Gardens in Taleb Hobeich street. It is a highly vegetated

building made up of tower and 2 buildings; it has a private residential garden of diverse combination of trees and plants (Figure 23).



Figure 22 Example of vegetated balcony in Badaro



Figure 23 Badaro's Garden

v. Vegetation in parking spaces

Vegetation is similarly seen in both residential and commercial parking spaces. Most residential parking spaces have manicured plants in addition to some planting pots defining the edges. Whereas, large trees and shrubs are mainly found in commercial or public parking spaces with couple specimen trees such as large olive or pine trees in Kfoury street (Figure 24).



Figure 24 Examples of vegetation in parking spaces

vi. Urban Green Spaces in and nearby Badaro

At the end of the Parc street, there is a public small park facing the museum presents a significant amount of verdure. It has spontaneous vegetation with planted trees such as olive and palm tree. This garden has a tomb in the middle, a Roman colonnade, a mosaic ground floor and a pipe of running water, most probably used for irrigation of the vegetation present there (Figure 25).



Figure 25 Garden in Badaro

As for the nearby urban green parks, they are highly vegetated near Badaro and partially accessible to the public. Horsh Beirut, for example, has recently opened its gates to be accessed by everyone during its opening hours (Figure 26). Whereas ambassador's private garden and Beirut Hippodrome are only restricted to certain individuals after securing the permission and clearance from Beirut's municipality (Figure 27). Small green spaces, present in Badaro, are close to the people living or working in this neighborhood and they are accessed by the public frequently.

Despite the differences in accessibility, all of these parks are well- maintained and clearly arrangement. The continuous efforts of Beirut's municipality in cleaning regularly has preserved and conserved these urban parks. Besides that, one can visibly notice the diversity in vegetation in terms of quality and quantity as well as the presence of moderate complex pleasant views. The provision of vegetation can be detected easily while passing near the fences or walls of these urban spaces. This is also accompanied by the fresh scent of pine trees and other types of vegetation along the walk. Adding to

that, these parks are considered safe and secure open spaces as there are always security guards standing at the entrance and wandering inside the areas; security cameras are located at every corner.



Figure 26 Horsh Beirut

Source: <http://greenarea.me/en/191088/beiruts-biggest-green-space-many-limitations-enjoy/>



Figure 27 Beirut Hippodrome

Source: https://www.tripadvisor.com/Attraction_Review-g294005-d2177686-Reviews-or5-Beirut_Hippodrome-Beirut.html

c. Nature- Related Features across Badaro’s Streets

Generally, Badaro has nearby public green spaces around it. Some informal green spaces like vacant parking lots are present in the end of Kfoury and Parc streets. Mainly Badaro’s streets are considered highly vegetated, but each has its own green character. Evenly distributed and manicured street trees are usually found in primary and Parc street whereas informal streets are concentrated in tertiary streets. The level of canopy provided by street trees varies according to size, shape and amount across each street. Planted pots are found in almost every street. As for the green walls in shops and restaurants are mainly found in primary street. However, buildings with green balconies and entrances are found in secondary and tertiary streets. Some of these buildings have private residential gardens. As for bird sounds, they are clearly heard in mainly in Kfoury and tertiary streets. The below tables summarize street features in terms of natural aspect. These features are identified and located across Badaro’s streets.

Table 4 Nature-related features across Badaro’s main streets.

Street’s Natural Layer	Primary Street	Secondary Streets			Tertiary Streets
	Main	Kfoury	Taleb Hobeich	Parc	
Street trees: Evenly distributed, Manicured/ Formal, Same size & species	High	Low	Low	Medium-High	Low
Street trees: Unevenly distributed/ Haphazard / Informal, Diverse species	Low	Medium	Low	High-Medium	High
Street trees: Combination of both formal & informal	Low	Medium	Low	High	High
Street trees: Canopy cover (high level of shade)	Low	High	Low	Medium	High-Medium

Potted Plants: Different sizes, shapes etc.	Medium	Medium	Medium	Medium	Medium
Green walls: Vegetation within human build interventions: Shops, restaurants etc.	Medium	Low	High	Low-Medium	Medium
Vegetation integrated with build structure: Green facades, roofs, wall, balconies, entrances, etc.	Low	High-Medium	High	Medium	High-Medium
Private residential Garden/ yard: Formal/ maintained	NA	Medium - Low	Medium - Low	Medium - Low	Medium
Public garden:	NA	Medium	NA	High	NA
Informal urban green spaces: Vacant lots, parking	Low	Medium	Low	Medium	Low
Natural soundscape: Birdsong	NA	High	Medium - Low	Medium - Low	High
Nearby green areas	Medium	Medium	Medium	Medium	Medium

CHAPTER V

GO-ALONG INTERVIEWS AND PEOPLE'S EXPERIENCE

A. Go-along Interviews

This chapter sheds light on the results or findings of how pedestrians experienced wellbeing in Badaro's streets. Unstructured go-along interviews were conducted on a one-to-one basis with eight participants drawn from across the study site. The socio-demographic characteristics of these participants are presented first, as a background information. This is followed by an defining the main reasons for selecting a street to examine the restorative features that emerged from go-along interviews. User quotes and photographs are also offered when they provide an additional layer of complexity around the research focus.

1. Demographics

As mentioned before, a total of eight participants were recruited in my sample population with the youngest being 20 years old and the oldest 65 years old. They were balanced in terms of gender: four males and four females. It was assumed that all participants were highly familiar with the area as three of them worked in Badaro while the others were residents. It was noteworthy to mention that among those participants, six of them were either workers or residents for at least 10 years except for two individuals who only worked in Badaro for 1 or 2 years. When it comes to the highest education qualification, three participants had a diploma degree and five had a university degree. The following table summarizes the background characteristics of users who participated in the go-along interviews in Badaro. It includes the meeting

point where each participant decided to meet, the street where each participant selected to walk through as well as the timing when each go-along interview took place.

Table 5 Sample profile of go-along participants in Badaro

Go-along Interview	Interviewee profile	Gender	Education	Age	Meeting point	Selected street	Timing of interview
1	Resident for more than 15 years Housewife	Female	University	50	Ogero	Kfoury Street	Late afternoon (4:30 pm)
2	Working for more than 12 years	Male	Diploma	35	Georguex Katro Street (Near Ogero)	Kfoury & Parc	Early Noon (12:30 pm)
3	Resident for more than 15 years Nurse	Female	Diploma	65	National Museum	Parc	Early Noon (2:15 pm)
4	Resident & working for more than 20 years Concierge	Male	Diploma	62	Ogero	Kfoury	Early Noon (12:30 pm)
5	Resident Used to work in Badaro	Female	University	20	Main street (Near bank)	Main street & Taleb Hobeich	Early Noon (1:00 pm)
6	Working for 1 year	Female	University	32	Taleb Hobeich (Near Badaro's Garden)	Taleb Hobeich	Early Afternoon (4:00 pm)
7	Resident for more than 10 years Doctor	Male	University	27	Ogero	Kfoury & Parc	Late afternoon (7:50 pm)
8	Working for 2 years Officer	Male	University	30	Ogero	Main	Late afternoon (6:00 pm)

2. Selection of Streets

In general, the process of street's selection among participants varied greatly. It was shaped by users' subjective reasons of choosing a street that made them happy and comfortable. Such variation was due to what was considered restorative and important for each user in a street in terms of how much and what made him or her experience wellbeing along his or her walking. In addition to other notions, factors related to notion of proximity to his or her home or workplace as well as notion of familiarity within the streets played mainly a role in shaping such decision.

a. Street Selection of Meeting Point

First, each participant decided to meet at a specific meeting point different than the other. It was assumed that such selection was influenced by how close this meeting point was to their selected street and how recognizable it was for them.

In general, all participants chose a well-known shop or building in Badaro such as Ogero or National museum as a starting point. Such points were in close proximity with their selected street as well as their home or workplace.

b. Timing Selection of Go-along Interviews

As for the timing of the go-along interviews, four participants chose to walk around noon whereas the rest preferred to walk in the afternoon. It was assumed that this was purely related to user's availability, physical health and personal preferences when to conduct the go-along interview.

c. Choosing the Streets

Out of eight participants, five of them chose only one street to walk through while others selected two streets of their choice. Some participants mentioned other

streets in the area without passing through them as a way of comparing and emphasizing on a certain quality or feature that was crucial for them in experiencing wellbeing.

The analysis of streets' selection revealed that four main streets were mostly selected by participants:

- P1, P2, P4 and P7 chose Kfoury street.
- P2, P3 and P7 chose Parc street.
- P5 and P8 chose Main street.
- P5 and P6 chose Taleb Hobeich street.

Some streets were mentioned by the participants, but they didn't choose to walk through them. They were the following:

- P1, P2, P3, P4 and P7 mentioned Main street.
- P1, P2, P3 mentioned the tertiary streets.

d. Mapping of selected streets

The following map shows the selected streets by go-along participants in Badaro. The particular street chosen by each participant is presented by a specific color code (Figure 28).

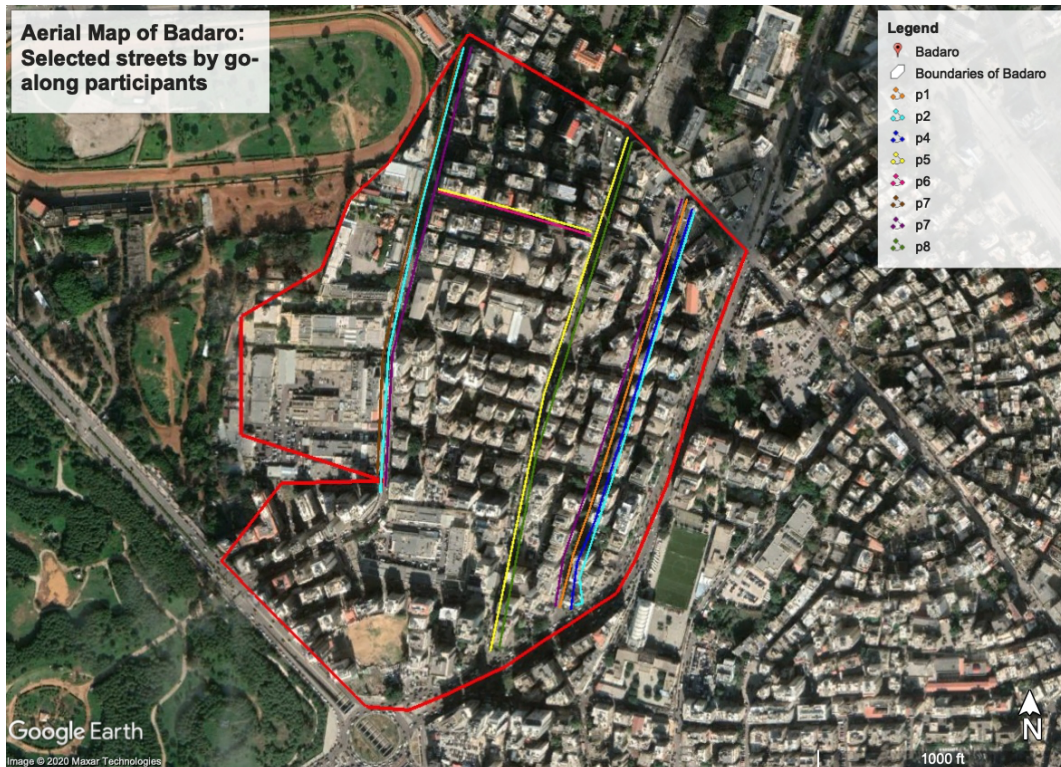


Figure 28 Aerial map of Badaro’s streets showing participants’ street selection

Source: Google Earth (2020)

3. *Main Reasons for Choosing the Streets*

The go-along interviews revealed the users’ main reasons for selecting a street that made them feel happy and good while walking. Such reasons consisted of general notions related to what wellbeing meant to them and what they were looking in a street to feel comfortable. These were explored below:

- Notions of proximity and familiarity

When they were asked to select a street that made them feel happy and good while walking, all participants (P1, P2, P3, P4, P5, P6, P7, & P8) focused on notions related to proximity and familiarity as main factor for directing their selection.

Generally, their first impression for feeling comfortable and relaxed was directly associated with walking in a street that they were able to recognize and close to where they live or work. For example, one participant stated that walking in Kfoury street allowed for the generation of feelings related to relaxation and comfort: *I want to walk here...I feel like this street in Badaro is like my home, I know it and it is so close, I just walk to relax here... (P1)*. She continued to explain that: *in the end, a person feels like this street is like his home...I come always come here to walk in this street next to my house, I don't feel that it is strange or far... I'm used to it.... I adapt to it easily...I memorize it all because I know it well... (P1)*.

Another participant highlighted the importance of these notions by clarifying why she selected Parc street to conduct the go-along: *I want to walk here in Parc street: I know this street very well... all its details, I feel comfortable here and most importantly I feel safe...yes very safe while walking... (P3)*. The above quote clearly showed how proximity and familiarity within a street made participants feel notions related to safety as well as part of experiencing wellbeing.

- Notions of calmness and quietness

The second important reason for selecting a street was notions related to calmness and quietness available within it. Specifically, this was the case with P1, P2, P3, P4 & P7 who perceived such notions extremely important in promoting mental and physical wellbeing. They expressed that feeling complete silence in a street made them mindful and spiritual while walking. For example, one participant explained how Kfoury street made him feel: *Notice the complete calmness here...you feel the silence...you can walk in this street and notice there are only few cars here...look how empty it is...this helps me to be attentive and just happy (P7)*.

Others stressed on the importance of calmness in a street as it made them appreciate the overall neighborhood. For instance, a participant elaborated how the quietness in Kfoury and Parc was essential for them when walking in a street: *when walking here in Kfoury and even in this street (Parc), I feel the quietness and it makes me happy...I feel walking in harmony...it is so quite so you feel that Badaro is a quiet neighborhood compared to other areas (P3).*

Moreover, they attributed that such notions were experienced vividly only when walking during specific time. They expressed that restoration in terms of stimulated reflection and feelings of refreshment in streets reached its maximum in the early morning or afternoon: *Badaro is most quiet in the afternoon...or early morning...the best thing you can do is walk...you feel quietness and there is no traffic... I can think well (P2).* Likewise, another participant discussed how a morning or afternoon walk made him content and relaxed: *Walk in the morning or afternoon, it is amazing because it is so quiet...fresh feeling...you could hear others talking to each other...so quiet (P3).*

- Notions of neatness and cleanliness

It was seen that notions related to high level of neatness and cleanliness in an urban environment played a major role in the process of selecting a street among many participants (P1, P2, P3, P5 & P7). Specifically, they elaborated that feeling of neatness in a street was in terms of how beautiful a street was; it allowed them to feel content and relaxed: *I swear I come here to walk and I'm happy...I swear this is because I feel it is a beautiful street, very beautiful area...(P3),*

Others added that a combination of notions related to neatness and cleanliness was what made them relaxed and revitalized while walking: *See how neat and clean this*

street is, if I want to relax...I take this street (Parc)...you u smell cleanliness, so energetic and refreshing... (P3).

Furthermore, another participant stated that he chose Kfoury street to walk as it was one of the cleanliest street in the area that made him experience feelings of happiness and refreshment: *I like walking here because it is so clean just pure ...Kfoury is so clean...you feel this purity while walking... and this makes me happy unconsciously (P7)*. He also shared how he felt when walking in the clean Parc street as well: *Here in this street, like Kfoury...so clean and neat...it is refreshing to feel this (P7)*. Adding to that, one participant stated her reason for choosing Taleb Hobeich street and what made her walk daily in this street: *you feel that it is neat and clean at the same time...this makes me comfortable while walking and makes me always walk here (P5)*.

- Notions of liveliness

Whereas, others chose a street because of the notions related to liveliness and dynamism in a street. They pointed out that the level of liveliness in street allowed them to experience feelings related to enthusiasm and renewal. Specifically, in Main street, they were able to feel a certain level of vitality and energy due to the general atmosphere that this street provided.

Although some participant didn't choose Main street as a street that made them happy while walking, but they clearly mentioned how its level of liveliness made them feel alive and revived. For example, one participant explained that: *This street, when I pass here...I also like it... I like the crowdedness of people...the movement makes me feel fresh... it is alive... you feel that there is life...and this is nice feeling, sometimes you need to feel and see such thing (P1)*.

Another participant also supported the same idea what how Main street energized her while walking; she stated: *That's Main street...which is one of the best parts in Badaro...I feel full of energy when I walk here...the atmosphere is strong (P5)*. Likewise, additional participant showed how the positive atmosphere in the street elevated his positive feelings and ambiances: *I like such atmosphere in the street... feel the vibes, the energy (P2)*.

Many participants stated that such atmosphere was able to provide them with their needs in the street. It was important to see how satisfying their needs effected their feelings of happiness and satisfaction: *There is everything in the street... I feel happy...whatever I need is there (P2)*; *Anything I want is available in this street. it I want to shop, chill, sit...if I want to eat...basically everything is here, and this is great...simply makes me grateful (P5)*.

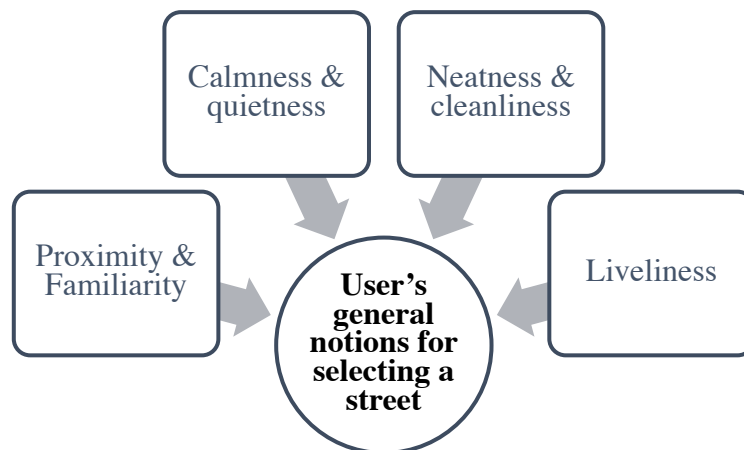













Figure 29 The main notions for selecting a street among the participants

Table 6 The ranking of selected streets in terms of restoration from highest to lowest based on the number of participants who have selected them

Level of Restoration	Ranking of Badaro's Street	View of the Street	Participants who selected the street	Number of participants who selected the street	Main reasons for selecting the street
<p>HIGH</p>       	1. Kfoury street		<ul style="list-style-type: none"> - P1 - P2 - P4 - P7 	4 out of 8	<ul style="list-style-type: none"> - Proximity and Familiarity - Calmness and quietness - Neatness and cleanliness
	2. Parc (Museum) street		<ul style="list-style-type: none"> - P2 - P3 - P7 	3 out of 8	<ul style="list-style-type: none"> - Proximity and Familiarity - Calmness and quietness - Neatness and cleanliness
	3. Main street		<ul style="list-style-type: none"> - P5 - P8 	2 out of 8	<ul style="list-style-type: none"> - Proximity and Familiarity - Liveliness
<p>LOW</p>	4. Taleb Hobeich street		<ul style="list-style-type: none"> - P5 - P6 	2 out of 8	<ul style="list-style-type: none"> - Proximity and Familiarity - Neatness and cleanliness

4. Streetscape Features Promoting Wellbeing

The research question and the restorative street features extracted from literature review were used to frame and guide the analysis. Although a various range of themes related to the user's urban experience were identified from the data, this study focuses on those related precisely to the role of street features or qualities specifically street

vegetation in promoting pedestrian’s wellbeing. This means that the link between wellbeing and these available street features are recognized and analyzed accordingly.

Based on that, the themes were assembled around two main categories. Firstly, users discussed how much and what type of street vegetation was capable of promoting wellbeing in the street. The second meta-category related to the other non-natural features that participants strongly associated with the promotion of wellbeing.

Table 7 Themes and categories related to street features were categorized

Meta-category	Main Themes & Subthemes
<p><u>First meta-category:</u></p> <p><i>Natural street features affecting wellbeing</i></p> <p>What are the features or qualities of street vegetation that promote wellbeing and how much does it promote wellbeing?</p>	<ul style="list-style-type: none"> • <u>Restorative street vegetation:</u> <ul style="list-style-type: none"> ○ Fascinating vegetation and natural scenic view ○ Vegetation integrated within build features • <u>Street trees and their restorative qualities</u> <ul style="list-style-type: none"> ○ Street trees species <ul style="list-style-type: none"> ▪ Pine trees ▪ Olive trees ○ The level of care and maintenance ○ Size of trees • <u>Interacting with biodiversity</u> <ul style="list-style-type: none"> ○ Natural birdsong
<p><u>Second meta-category:</u></p> <p><i>Non-natural street features affecting wellbeing Non-natural street features affecting wellbeing</i></p> <p>Beyond vegetation, what other street features or qualities do play a role in promoting wellbeing and how/ in what ways do they promote it?</p>	<ul style="list-style-type: none"> • <u>Social aspect of the street:</u> <ul style="list-style-type: none"> ○ Interaction between social places and people <ul style="list-style-type: none"> ▪ Social spots in the street ▪ People in the street • <u>Physical aspect of the street:</u> <ul style="list-style-type: none"> ○ Visual characteristics of Badaro’s architecture <ul style="list-style-type: none"> ▪ Simplicity and maintenance in buildings ▪ Holistic mix of old and modern architecture ▪ Landmarks of protected heritage ○ Walking in internal streets

a. The Relationship Between Natural Street Features and Wellbeing

It emerged from the go-along interviews that specific natural features and qualities in the street were strongly associated with wellbeing benefits. Such features and qualities were exposed in a way to show how much they contributed in participant's wellbeing. Several themes were identified in relation to the noticed qualities of the streets' natural features and how they promoted wellbeing. These were investigated below:

i. Restorative Street Vegetation

- Fascinating vegetation and natural scenic view

Regardless if vegetation was found in small amounts, its availability in the street made it more restorative in terms of appearing more relaxing and beautiful. Many participants expressed that: *You always feel that there is a bit of nature, not a lot but enough to feel relaxed... There are few greeneries next to the church...They are usually few, but even though the available vegetation is beautiful within the street (P1)*. This quote highlighted participants' understanding or perception of street vegetation through visually acknowledging the restorative potential of any available 'green' feature.

It also seemed that a natural scenic view in urban context was responsible for the promotion of wellbeing. Most participants noted that provision of vegetation associations and the spaces they occupy resulted in 'soft fascination' and enhanced calming as well as positive feelings. For example, one participant elaborated that provision of natural scenic view of pocket park or garden facing National museum made her happy and cheerful: *The view of vegetation... this garden here (in Parc Street)*

is beautiful (Figure 30); this green element, green view attracts me... This is very beautiful (P3).



Figure 30 Provision of vegetation in Badaro noticed by participant

Another participant also linked the importance such scenic view in feelings related to relaxation and beautification of the street: *The thing that relax me in this street is mainly the scene of nature... I feel like you are walking in a beautiful relaxing place (P2).* This was similarly illustrated when participants expressed how vegetation made them experience delighted moods: *There is nothing more beautiful than piece of green land covered with grass with some flowers, trees, some pine and beautiful trees. There is nothing more beautiful than nature; it attracts the person unconsciously...it is something cheerful and beautiful, I feel my mood changes if I see them... (P2).*

- Vegetation integrated within build features

Besides natural scenic view in terms of green elements only, many participants also tended to appreciate attractive views composed of different natural and non-natural elements integrated together. Such views resulted in the promotion of restorative feelings among them. As literature emphasized, a well-designed and attractive urban environment might have a stress-reducing and mood-enhancing power equal to that of an attractive natural environment. Based on that, it seemed that such integration of natural and build elements within a street was enough to create an attractive environment; this caused the generation of positive and fascinating feelings and emotions especially when vegetation was part of buildings such as balconies, entrances, fences etc... For instance, several participants reported that the prominence of vegetation in terms of small trees, bushes and shrubs in how they designed a building in an attractive way ensuing restorative effect: *What attracts me the most in the street, look at the buildings how they are green, they are surrounded by plants. The trees are beautiful in this building. Look at these fences how the shrubs are part of it (Figure 31) ...I feel happy...Every building has its own vegetation, and all are beautiful (P1)*



Figure 31 Vegetation integrated within build structure

Likewise, viewing several green buildings next to each other was a reason for increasing fascination among some participants. Specifically, they described how the view of Badaro’s Garden building as well as other green buildings near it made them feel refreshed and happy in Taleb Hobeich street. For instance, one participant reported: *Look at this building in this street (Figure 32); look at how the trees almost reached the 5th floor. This is the most beautiful thing. This makes me glad...Look at the building next to it, look at the other, all are the same. It is really beautiful and coherent... Whenever you look there is always buildings with 3 or 4 trees, even on balconies...this is really beautiful view (P3)*. This quote showed how the effect of coherence and substantial scope of vegetation in a building were encompassed in attention restoration theory’s (ART) “extent” construct. It also described the restorative impact it had on the participant by linking it directly to promotion of wellbeing in terms of experiencing ‘soft fascination’ due to vegetation’s size.

Few participants were extremely charmed when spotting the artificial aquarium in front of one building in Kfoury street. The description of such a scene indicated a high level of fascination, happiness and interest in the work resulted from the integration of natural and non-natural features together. They discussed the diversity of things they saw in details in terms of presence of vegetation, aquarium' build structure and even fish in the water: *...Check out this small aquarium, see the water, the trees and check it out...the old bridge ... this view is nice...if you're standing wouldn't you look and this scene and feel happy?... I love seeing these orange fish...this whole this I just...enjoy and...feel happy when I see this (P7)*. Another participant supported this idea by stating his fascination in how the aquarium was constructed and designed with vegetation: *This is a unique work, look how the small bridge is over the aquarium and full of trees (Figure 33) ...green decorations is simply amazing (P4)*.

Moreover, with in the same street, though it was mentioned only by one participant, the integration of grass between the old pavements made a participant tremendously content. He expressed how such combination increased the level of naturalness in the street; he also expressed how this view meant a lot to him as it made him unconsciously comfortable while walking: *See this pavement (Figure 34), look at the grass how it is between every stone. This means a lot to me, it's not artificial. It looks natural...I enjoy this I feel happy just like this... (P7)*



Figure 32 Badaro Garden in Taleb Hobeich



Figure 33 Aquarium at entrance of building



Figure 34 Green pavement in Kfoury street

ii. Street trees and their restorative qualities

Another strong theme emerging from the data concerned with presence of street trees as a separate natural entity or as part of scenic view within streetscape. It was seen as important and valuable for the promotion of wellbeing among most participants.

Therefore, it was imperative to understand the general restorative importance of presence of street trees and what qualities promoted wellbeing. They were discussed below:

- Street trees species
 - Pine trees

Participants who liked nature, or who were connected to the ground appreciated street trees immediately and were able to experience psychological or mental wellbeing

more than those who were not. Thus, personal experiences or dreams, childhood memories as well as personal habits triggered by the presence of specific street trees could induce a positive distraction and generate positive emotions among individuals.

Some participants expressed that presence of specific street tree species made the street more familiar, which in turn stimulated kind of attachment and feelings of fascination. For example, one participant explained that the presence of pine trees in Kfoury street was his main motive for selecting this street. This was due to his strong interest with pine trees that made him happy and remember his childhood dreams and desires: ... *Pine trees... I love them.... when I was young, I had a dream about having a house with red brick, three arches and a pine tree in the middle of the house. However, it's normal I'm living in Badaro...its's only a dream... but, this street really means a lot, those pines... they make me remember my childhood dream, to have a house and a pine tree... (P7)*. He also stressed on experiencing feelings related to calmness and comfortability once he noticed pine trees in the street; he elaborated: *Once I see the trees here in Kfoury (Figure 35), unconsciously I feel comfortable and I feel calmness, I am not worried or stress if you want... (P7)*. Such feelings were linked to stress reduction theory (SRT) in terms of reducing stress and attention restoration theory (ART) in terms of directing attention.

Moreover, another participant also confirmed the importance of pine trees in the same street in promoting comfortability: *All pine trees...Honestly, I just feel comfortable psychologically (P4)*. He also considered those trees as source of fascination and perfect spot for bonding with his family. Since he was a foreigner, this participant explained that seeing these trees triggered feelings of happiness and nostalgia as it reminded him of his family and his home country. He also explained that

this allowed for the generation of positive affect and sense of belonging. When his daughters visited him, he described that he brought them to this street just to let them see the pine trees. This elicited positive affective appraisals and emotions: *When I'm free, I always walk here... it's all trees and pine trees. I feel psychological comfort... I always talk with my family and daughters in this street; I walk once or twice till I finish my call. When they were young, I brought them here to walk. My eldest daughter always remembers this street and ask about the tall pine trees (P4)*. Both quotes above clearly highlighted attention restoration features especially 'soft fascination' as the participants seemed to be engaged without attentional effort and this made them remember old 'childhood dream' and 'home country'.

Adding to that, some participants described how seeing pine trees stimulated their ability to think: *I come here to this street...full of trees...I come to think about something or if I'm worried or if I'm sad from my children or sad from something else (P4)*. Others reported that such a view of trees motivate them to do a certain task: *When I look at the trees, I feel comfortable psychologically. I feel that I can come up with certain thoughts or do something (P4)*. In both quotes, these effects were clearly rational in how street trees helped participants to organize their thoughts and direct their attentions. Such effects were directly associated with ART's concept of 'soft fascination'.

They also discussed the benefits of viewing pine trees in terms of the value of attaining a psychological and social distance from life demands, family and work pressures. Many designated this mental separation in terms of relaxing and forgetting about responsibilities or routines especially when they feel anger or any kind of irritation. They expressed their ability to clear their minds by just walking and spotting

a pine trees in the street: *...if I was worried or my heading was spinning or even sad, I tend to come here. I walk in this street; I come to the pine trees...I always come here to see the pines (P4).*

As well as the effect of psychological escape, 'being away' was also expressed in terms of social escape among few participants. They emphasized on the effect of pine trees in making a street hidden thus creating a 'refuge' for them. This notion was important for promotion of privacy which in turn was essential for the promotion of one's wellbeing. It allowed them to experience some sort of discretion by avoiding seeing or talking to people especially when they feel like they wanted to 'get away' especially when walking in Kfoury street: *This street is all trees, it is hidden. In case you don't feel like seeing anyone or you don't want anyone to see you, you can come here (P2).*

For some participants, the symmetric arrangement of pine trees was important for promotion of wellbeing. Some expressed how pine trees were located on both sides along the length of internal street made them experience harmony, happiness and unconsciously comfortability and relaxation while walking: *The trees on both sides here...it is beautiful... You can walk with harmony; this homogenous view along the whole street on both sides... unconsciously you have to look at them (P1).* Another participant also stated that: *You see the trees on both sides, I feel relaxed really (P3).*

Additional participant described how such symmetric arrangement made him feel that one tree was calling the other and this made him happy and induce positive feelings. He described that as if he was surrounded by trees: *The first thing that I love here is that there are trees on both sides of the sidewalk...literally I'm surrounded on both sides; see the trees...As if each tree is calling the other tree (P7).*

Besides that, high amount of pines visible along the sidewalk contributed to the promotion of wellbeing in terms of boosting the level of fascination and feelings of being away among many participants. Some participants expressed that the numerous pines in a street helped them to experience psychological disconnection and feel as if they were away from the city. As stated by one of the participants: *...This street is filled with many trees...All of it pines... so many pine trees... You can walk and feel like in a different place, just away and you look. You enjoy it, this is amazing (P2)*. He added that numerous pine trees helped him to be more mindful and aware of what was happening around him despite the noisiness and traffic he was surrounded with: *Badaro is noisy but there are also things here...the trees...in the hidden streets. There are trees...this vegetation here... You feel alert and that it is calm more than the usual (P2)*. Few also noted that what attracted them the most while walking was viewing this significant number of pine trees: *You notice that there are pine trees, not one or two but you notice there is quantity and this quantity attracts me(P7)*. This quote showed how numerous pine trees specifically contributed to experiencing wellbeing. This indicated that restorative effect of having high number of trees might be also linked to type of species as well.



Figure 35 Pine trees in Kfoury street

- Olive trees

In addition to the restorative effect of pine trees, olive trees were also mentioned by several participants as a valuable tree species. Some considered them precious as they represented a blessing and allowed for generation of positive and happy feelings. It was assumed that such a link might be related to spiritual or religious reasons: *You can see the olive trees in the street, see the olive...it is not for decorations only, there is nothing more beautiful than an olive tree, it is a blessing, it is beautiful, simply nice view (P3)*. Another participant also expressed how the olive trees in front of a building in Kfoury street had a restorative ability in making her happy: *Look at the olives (Figure 36); these olive trees, they make me feel happy every time I spot them here (P1)*.



Figure 36 Olive trees in front of building's entrance

- The level of care and maintenance

For many participants, the promotion of wellbeing in the streets was not only linked to viewing a certain plant type or species but rather in terms of overall quality of street trees. They explained that trees' quality was highly valued in connection with the level of maintenance provided especially activities related to trimming, pruning or even watering. Such activities seemed essential in preserving the quality of street trees and allowing for the promotion of wellbeing among participants. For instance, one participant indicated that: *The street trees in Mains street...every season they take care of them. unconsciously you will look at them... you feel that their rectangular design is beautiful (Figure 37). They are neat because they cut them from time to time...like a square, they take care of them and arrange them. they are not messy and haphazard (P1)*. The above quote showed that when maintenance was taking place frequently

(seasonally), the quality of street trees was immediately appreciated; this induced her level of interest as well as ‘soft fascination’ especially when she noticed the maintained rectangular neat shape of Main’s street trees.



Figure 37 Rectangular shaped street trees

Others noted that taking care of street trees would also beautify a street by adding a certain level of neatness and elegance to the street. This made them appreciate the neat vegetation more and allowed them to experience positive emotions while walking: *The trees are for decorations...But they are also so beautiful. From the beginning of the street till you reach the end, you see the trees are neat... very neat... The green element is beautiful wherever it is found.... found in a classy neighborhood (P3).*

- Size of trees

Adding to the trees' level of maintenance, others described feelings of awe and fascination when viewing huge street trees with leafy leaves. They felt “attracted” by the size of big trees as they added to the uniqueness of a specific natural element: *This big tree, it attracts me so much. I wish if you could have such a view along the whole street. Unconsciously you look at it (Figure 36). It looks like a big umbrella; it is unique because you feel it has been for ages (P1)*. The above quote showed how size of tree was restorative and it was also linked to its age. It seemed that the older the tree, the more beautiful and unique it was considered.

Another participant supported this idea by explaining how big trees create a shade and allow the light to filter through the canopy; he continued to express how this size made his comfortable and feel good: *Whenever you see big trees, big vegetation...you feel psychologically good and comfortable... there is nothing more beautiful than this...it attracts me...the shade is perfect....see the light in the tree... (P2)*



Figure 38 Example of huge street tree creating canopy noticed by participants

iii. Interacting with biodiversity

- Natural Birdsong

In addition to the restorative effect of street vegetation, presence of biodiversity seemed to influence how some people experience wellbeing in the street. Many participants described how the multisensory interaction with birds in their selected street stimulated feelings of happiness, fascination, joy and enjoyment. It was assumed that such restorative feelings were generated due to perceiving birdsong as a natural sound, thus, increasing the naturalness of the street: *...Birds...listen to their sound...they are hidden in the trees...I love this, it makes me happy and just smile, so natural... (P7).*

In support to this, another participant also elaborated that viewing and hearing birds made her feel relaxed and happy. She explained that by hearing birdsong, the street felt different and more beautiful. This allowed her to forget about the traffic and to unwind or get away from her daily routine: *...You can see and hear the small birds playing within the trees...you see? You hear right? the birds and trees together?... It is an extremely very beautiful... This view, you can't find it in other places...you... forget the cars and noise... you forget boring.... routine... definitely they are beautiful... (P3).*

Another participant highlighted that hearing birds while walking made him appreciate the quietness in the street. He stated that this made him relax and allowed him to distance himself from everyday life; this allowed him to empty his head, feel renewed and focused: *Notice the quietness...you can hear the birds here...so refreshing... listen to them, so relaxing...I can focus (P7).*

The above quotes showed how sight and sound of birds were highly valued by most participants. They emphasized how fascinating and restorative effects were felt as they contributed to interactions being a source of ‘soft fascination’, ‘being away’ and direct attention.

Table 8 Participants’ general and specific nature-related features across each street they chose to walk in.

Selected Streets in Badaro	Selected Nature– related Features		
	Participants’ general selected features		
	General selected features	Specific selected features	
1. Kfoury street	Natural scenic view Vegetation integrated within build features Presence of Pine trees Presence of Olive trees High level of care and maintenance of street trees	P1, P2, P4 & P7	Presence of green view Presence of maintained vegetation around buildings/ Green fences/ green balconies Numerous old Pine trees on both sides of street Presence of olive trees Presence of big trees Presence of bird sounds
2. Parc street	Big size of trees Presence of natural birdsong	P2, P3 & P7	Presence of trees on both sides of street Presence of gardens/ Green view Presence of big olive tree Presence of bird sounds
3. Taleb Hobeich street		P5 & P6	Presence of green buildings Green balconies/fences/ entrances
4. Main street		P5 & P8	NA Mentioned by P1 & P3: Presence of manicured rectangular street trees

b. The Relationship Between Non-natural Street Features and Wellbeing

The qualitative study not only revealed the street natural features that contributed to participants' wellbeing, but also the other street non-natural features that were associated with restoration. As mentioned before, half of the participants selected streets based on vegetation's ability in making a street more restorative; however, this didn't appear to be the main or dominant facilitator for the promotion of wellbeing in the street for the other participants. There were other street non-natural features that contributed to their wellbeing. Several themes were identified in relation to the perceived restorative qualities of these elements; these were explored below:

i. Social aspect of the street

The social aspect of the streets as well as the general social profile of the neighborhood emerged as important factors that contributed to promotion of wellbeing among most participants. Many of them mentioned that Badaro's social life was mainly found in its primary street and it was directly linked to wellbeing benefits. It was assumed that such social life was represented by level of liveliness in the street in terms of presence of multi-use facilities, people and activities that made participants experience wellbeing benefits.

- Interaction between social places and people
 - Social spots in the street

Many noticed the availability of numerous multi-use facilities in Main street and explained their importance in promoting wellbeing. Café shops, restaurants, and even pubs were reasons why participants felt satisfied and experienced social comfortability. It was assumed that such places represented gathering spots for people that allowed

them to enjoy different types of socialization and interaction such as chilling, dining, talking etc.: *Basically, there are a lot of coffee shops, pubs or anything you want...sushi pizza whatever... you can eat, talk and do whatever you want in this street... I chose it because this makes me happy, just I'm used to it (P5).*

Adding to that point, some tended to appreciate these places as they allowed them to relax and reduce their stress levels especially when they were angry or annoyed; they often depended on them as a way of relaxation and detoxing. For instance, one participant stated that: *In case you were angry, and you want to relax, there are several ways. You can call your friend for example and meet or drink...it is like a detox here...you can walk alone or drink alone...there are many things here to relax... (P2).*

Several participants also reported experiencing a boost in their positive feelings while passing near the restaurants and coffee shops. This was often attributed to sensing of food and coffee odors along the walk: *I just enjoy smelling coffee when walking here...I smile... I smile and feel happy (P5).*



Figure 39 Examples of coffee shops in Badaro

- Other people in the street “*Nes Mrattabin*”

For many participants, presence of neighbors in the street was valuable and relaxing to them while walking. Perceiving well-off, polite and well-educated people interacting and socializing with one another generated positive emotions and supported feelings related to sense of community as well as sense of safety. This also reinforced positive affective judgements and perceived attention restoration when noticing diverse people of different ages, nationalities and religions respecting and interacting in the street. For instance, some participants explained during their walk: *The people are always in the street...diverse people...they make me happy and safe... See how everyone is polite and no one interfere with the other.... You feel that they respect each other...(P2).*

Another participant supported this idea by emphasizing on how the diversity of people make her happy and comfortable: *You feel that people in Badaro are diverse, very elegant and understanding. You have here a specific type of people... Such type of people in the street makes me feel comfortable...they are diverse even in religion... it's like the elegant mixture of people... (P3).* This was also reinforced by additional participant stressing out how presence of neat people affected his choice of walking in the first place: *You feel the people in Badaro are neat and classy...I don't mind walking when I feel there is some quality in the streets (P8).*

Adding to the presence of neighbors, many highlighted the importance of presence of army individuals, in making them feel safe and secure while walking in a street. It seemed that their presence in the streets increased participants' perceptions of experiencing sense of safety, security, comfortability and relaxation. For example, one participants explained that for them safety meant wellbeing: *...People here acknowledge*

the presence of army in the area...you feel safe and psychologically comfortable here when you see the army... maybe because I'm old lady I feel it is important to feel like that when I walk, for me it is about safety in a street this is why I feel relaxed and like ok everything is fine (P3).

This quote showed how old individuals might value the issue of safety and they might link it to seeing any army soldier as a way of feeling protected. Moreover, someone also noted that high level of safety was experienced when spotting army checkpoints: *Presence of army in the area makes me feel safe...I walk here as if I'm closing my eyes...I'm not afraid or worried while walking (P1).*



Figure 40 Army checkpoint in Badaro

Table 9 Participants’ general and specific social-related features across each street they chose to walk in.

Selected Streets in Badaro	Social – related features		
	Participants’ selected features		
	General selected features	Specific selected features	
1. Kfoury street	Interaction between social places and people Presence of social spots in the street Presence of people in the street	P1, P2, P4 & P7	Presence of other people (neighbors etc.) →“Nes Mrattabin”
2. Parc street		P2, P3 & P7	Presence of other people (army, pedestrians, etc.) →“Nes Mrattabin”
3. Taleb Hobeich street		P5 & P6	Presence of other people (foreigners, locals, old people, etc.) →“Nes Mrattabin”
4. Main street		P5 & P8	Presence of other people (friends, neighbors etc.) →“Nes Mrattabin” /in action Presence of coffee shops, restaurants & pubs→ social spots Nice atmosphere & high level of activity

ii. Build aspect of the street

Another theme relating to the non-natural features valued for their restorative potential among participants were related to build or physical aspect of the street. Participants focused on specific characteristics of buildings and level of walkability as main aspects to promote wellbeing.

- Visual characteristics of Badaro’s architecture
 - Simplicity and maintenance in buildings

In general, most participants expressed that viewing simple and maintained buildings in Badaro had a positive affective appraisal. Whether they were new or old structures, participants were fascinated by the level of neatness and elegance of most

Badaro's buildings in terms of attractiveness, maintenance and care. It seemed that such qualities allowed them to reflect and direct their attentions as well as enjoy the sense of enclosure while walking. That was in line with ART's argument that the neatness of buildings promoted soft fascination and triggered comfortability through being away. For instance, one participant stated that what attracted him in Kfoury street were: ...*The neat things...The neat buildings...In Badaro, all buildings here are neat...even the new constructions...they look neat, they take care of them...I enjoy looking at them... really they are nice and make me feel I'm in a classy neighborhood and this makes me comfortable... neat area (P2).*

Another participant confirmed how maintained and neat buildings allowed her to be taken away from reality simply by experiencing some sort of distraction and content while walking: *I feel happy when I see these neat and preserved structures...like away from the routine and home... the buildings...everything in Badaro seems really neat... it is a neat area...Badaro is very neat and beautiful, really you can notice the neatness in everything... I enjoy looking at them, I feel like I'm away or far from here...just wow...look how neat they are (P3).*

As for others, these buildings made them appreciate the overall design and classy and refreshed (fig): *Look at these buildings...their simple design and how they take care of them...just wow...super amazing... it reminds you you're living in a classy neighborhood... (P5).*



Figure 41 Examples of maintained, simple and neat buildings in Badaro

- Holistic mix of old and modern architecture

For many participants, the combination of both old and new buildings next to each other was crucial for promotion of their wellbeing during the walk. Feelings of enchantment and fascination were mainly detected once they notice how these diverse structures coexist holistically in the same neighborhood. Some expressed that this view allowed them to reflect, think and even disconnect. One participant expressed how this mix pattern was harmonious and increased the attractiveness of Badaro: *See the buildings here in Badaro... You always see the old with the next; next to each other... in this neighborhood only... very beautiful and amazing. It makes you think about the transition between past and present... it makes me feel comfortable, my mind is just not thinking about anything (P3)*. Other participant supported the restorative effect of such mix by stating *I enjoy looking at buildings while walking... I enjoy this mix... of old and*

new buildings...like they are both beautiful and next to each other...you don't see that in another place (P5).



Figure 42 Modern and old buildings in next to each other

- Landmarks of protected heritage

Adding to the tuneful combination of buildings, spotting ancient beautiful buildings was what allowed for the promotion of wellbeing. They stated that such majestic constructions triggered positive emotions, motivation, and reflections among them; they were simply fascinated by such architecture: *Facing the museum...look at this old building (Fig)...it is so beautiful, this stone palace is just amazing...please take a picture here, I love this... I feel happy seeing it...look how the widows are green...of*

course it is so neat (P3). Another participant confirmed such restorative feelings when viewing this same palace: *See the old palace (Figure 40); very attractive...it means a lot to me...I feel when I walk here in this street, I have a target in the end which is seeing this palace... I'm sure that my eyes will be happy once they see it...you feel it is beautiful and somehow it can take you back in time (P7)*. This showed how participants were able to attribute aspects of ART to building features within the street, notably soft fascination and being away.

Moreover, participants explained that focusing on details of old and historic buildings during walking gave curiosity and exquisiteness to their walk. It also provided something to observe and to think about. One participant explained that he was fascinated by the history and details of the building: *Check out this old building...see the details...beautiful... I like to stare at the green windows (Figure 41); the sequence of these windows is simply beautiful (P7)*. Such sense of fascination and awe also emerged in relation to contemporary structures.



Figure 43 Old palace in Badaro



Figure 44 Old building with green windows

- Walkability in internal streets

Many participants pointed out that walking in internal streets was considered a restorative practice. According to them, the coherent spatial layout of these streets allowed them to experience feelings related to relaxation and comfortability which made walking seemed easy and enjoyable. They added that this high level of coherency supported perceptions of positive sensations, being away and improved the affective state. For instance, one participant stated that sense of harmony in the street's design was a main reason why he felt good while walking: *This internal street, parallel to main street... You feel like they are located in a hidden place... this makes walking nice and visually comfortable... just to relax or destress... you walk here, you just forget yourself... pure harmony here in this street (P1)*. Furthermore, another participant supported this point by affirming his happiness when he walked in such streets: *The streets inside... you feel psychologically happy and relaxed once you enter them as if you enjoy the walk more... maybe the street is long and everything is together and connected (P2)*. The above quotes showed how the design of a street promoted restoration in terms of physically wellbeing and provided sense of place and harmony.

Moreover, it was assumed that the generation of such feelings were due to absence of multi-use facilities and traffic that might distract and disturb people while walking: *I come here to walk; I like sports to relax... I don't like to be distracted by shops or people or cars passing near me... that's why I prefer internal streets for walking and relaxing (P1)*. Another participant discussed the same point: *It's just hidden... quiet internal street... 100% hidden... in case you don't want to see anyone... there is almost no one walking especially afternoon... you come here to walk (P2)*. Hence, notions related to emptiness in internal streets, in terms of absence of

shops and cars horns or even traffic, was perceived extremely important for promotion of wellbeing as it triggered feelings of harmony and joy: *You feel like this street is empty...there is no one...no cars... you can walk in harmony and joy...you feel like you don't need to hear the car horns every minute...you just walk and enjoy it; you walk symphonically (P1)*. Similarly, several participants described walking in these narrow streets as comforting and calmer due to low vehicular circulation: *Psychologically, the inner streets aren't crowded...there is no cars that's why you feel calmer when walking here than walking in main street...(P7)*. Other participant supported that: *Walking in this street...Parc street, I feel psychologically comfortable... there are only few cars passing there... (P3)*.

Table 10 Participants' general and specific build-related features across each street they chose to walk in.

Selected Streets in Badaro	Selected Build– related Features		
	Participants' selected features		
	General selected features	Specific selected features	
1. Kfoury street	Presence of simple and maintained buildings	P1, P2, P4 & P7	Unique design of buildings with decorative vegetation Presence of neat constructions/ New buildings but old style
2. Parc street	Holistic mix of old and modern architecture Presence of landmarks of protected heritage	P2, P3 & P7	Combination of New & modern buildings of elegant design Old palace with round balconies, green old windows/ sequence / Easy to walk
3. Taleb Hobeich street	Walkability in internal streets	P5 & P6	Modern, neat & beautiful buildings/ Easy to walk
4. Main street		P5 & P8	Old buildings together

Table 11 Participants' identified restorative features across their selected streets of Badaro in terms of social, build and natural-related features.

Type of Street Features	Participants' general selected features	Restorative features in Kfoury street	Restorative features in Parc street	Restorative features in Taleb Hobeich street	Restorative features in Main street
Social-related features	<p>Interaction between social places and people</p> <p>Presence of social spots in the street</p> <p>Presence of people in the street</p>	<p>Presence of people (friends, neighbors etc.)</p>	<p>Presence of people (army, pedestrians, etc.)</p>	<p>Presence of people (foreigners, locals, old people, etc.)</p>	<p>Presence of people (friends, neighbors etc.)</p> <p>Presence of coffee shops, restaurants & pubs</p> <p>Nice atmosphere & activity</p>
Build-related features	<p>Presence of simple and maintained buildings</p> <p>Holistic mix of old and modern architecture</p> <p>Presence of landmarks of protected heritage</p> <p>Walkability in internal streets</p>	<p>Unique design of buildings with decorative vegetation</p> <p>Presence of neat constructions/ New buildings but old style</p>	<p>Combination of New & modern buildings</p> <p>Elegant design of buildings</p> <p>Old palace with round balconies, green old windows/ sequence</p>	<p>Modern & beautiful buildings</p>	<p>Different types of buildings</p>
Nature-related features	<p>Natural scenic view</p> <p>Vegetation integrated within build features</p> <p>Presence of Pine trees</p> <p>Presence of Olive trees</p>	<p>Green view</p> <p>Maintained vegetation around buildings</p> <p>Green fences</p> <p>Numerous old Pine trees on both sides of street</p> <p>Olive trees</p> <p>Big trees</p>	<p>Presence of trees on both sides of street</p> <p>Green view</p> <p>Presence of gardens</p> <p>Big olive tree</p> <p>A lot of birds</p>	<p>Green buildings</p>	<p>Manicured rectangular street trees</p>

	High level of care and maintenance of street trees Big size of trees Presence of natural birdsong	Presence of bird sounds			
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CHAPTER VI

DISCUSSION

The chapter discusses first the go-along findings with previous empirical evidences to emphasize on the most significant restorative landscape features in Badaro. The discussion of such findings in terms of what features impact wellbeing allow for better understanding of following questions:

- What does impact wellbeing in the street?
- What are really the streetscape features that promote wellbeing?
- How much does vegetation play a role in people's lives?

The second part of discussion stresses on major insightful findings and proposes a set of design recommendations for restorative streets. This is followed by the scope and limitations of the go-along method and overall study. Finally, it sheds light on contributions and future implications to assist in the design and planning of optimal streetscapes for people's wellbeing.

A. Comparative Study

1. Main Restorative Streetscape Features

The findings related to the identification of restorative features within Badaro's streets were divided to three categories: social-related features, build-related features and natural-related features. It was noted that go-along findings and literature agreed on the restorative potential of these some features; however, there were significant

differences between the two in terms what were the actual features that promoted wellbeing.

a. Social-related features

According to literature, the strong sense of liveliness, sense of community and sense of belonging were vital components for experiencing wellbeing in the street. The sense of liveliness was perceived through presence of people and presence of numerous coffee shops, pubs and restaurants as informal gathering places whereas the sense of community and sense of belonging were seen by the level of interactions, activities and types of behaviors among people (Mehta, 2007, 2019). The go-along findings confirmed mainly that sense of liveliness in a street was its strongest social restorative aspect. They revealed that presence of other people especially residents, army individuals, acquaintances and neighbors in all streets were main contributors to their perceptions of attention restoration, comfortability, safety and positive affective judgements. Such findings were in line with previous studies highlighting how the presence of numerous individuals along the street aided in the promotion of social wellbeing through the ability to support and encourage public life and even the enhancement of mental wellbeing through the social experience (Abraham et al., 2010; Mehta, 2007). Moreover, participants conveyed how presence of coffee shops and restaurants was important for their relaxation and their social life; such results appeared to be consistent with Jacobs' statement when she described how lively streets were a desired component of any good mixed- use neighborhood and therefore of any good city (Jacobs, 1961). Such findings also supported recent empirical work on streets that

focused on street liveliness and detailed recording of different types of social activities (Gehl, 2004).

Adding to that, few participants mentioned that peoples' activities or interactions within these informal gathering places contributed to the perception of a coherent and rich settings which constituted a whole world (Kaplan, 1995). Hence, they confirmed that the sense of community and sense of belonging specifically in Main street were seen essential for stimulating wellbeing through active engagement and accelerated interactions among people. They were able to associate these features clearly with experiencing sense of community and belonging while walking as it was also related to perceived safety and security, which the literature signified as important for contribution to restoration (Gatersleben and Andrews, 2013). This was reinforced by another study showing how the street's social life in these informal places provided people with sense of collective ownership (Mehta, 2007) and the current go-along findings demonstrated that was due to the presence of informal community gathering places.

However, when literature recognized other formal gathering places such as churches, hotel, school or even presence of street furniture important for activating public spaces and creating walkable streets and pedestrian-friendly environments (Ewing et al., 2015), none of the participants highlighted any of these features as restorative. Participants were more focused on the general and obvious social features in the street such as presence of other people coexisting together and presence of coffee shops and restaurants as main sources of restorative engagement and entertainment and disregarded others.

As for major differences, although go-along finding acknowledged the presence of people as significant restorative social feature, but it seemed interesting to highlight that participants' personal perceptions of others in the street was in terms of how well-off people were. According to them, people of Badaro were "Nes Mrattabin"; they were able to give the impression that they come from a good educational background and a classy family profile. They considered this as a core factor that could influence why they could experience wellbeing in the street. This might be related to the social and historical context of the neighborhood that indirectly shaped how people living or working in Badaro perceived other people. It might be also that they considered themselves as middle-upper class and when they perceived other people with similar status, they felt feelings related to safety and comfortability.

b. Build-related features

The go-along findings indicated that the restorative ability of visual characteristics of Badaro's architecture was strongly correlated with presence of certain landmarks. Mainly, the presence of buildings with distinctive imageable features was proved to evoke a strong restorative effect among many participants. Such finding was reflected in a previous research showing the importance of imageability as "shape, color, or arrangement which facilitates the making of vividly identified, powerfully structured, highly useful mental images of the environment" and how it allowed for the promotion of wellbeing (Lynch, 1960, p. 9). The design and coexistence of both neat old and modern buildings as well as presence of green vertical constructions were highly valued.

First of all, the simplicity and maintenance of constructions as well as the harmonious combination of old and modern architecture within same neighborhood

were one of the important restorative build-related features. Old landmarks of protected heritage were also considered unique, memorable and identifiable with high restorative ability as they triggered sense of place, identity and mainly sense of history within a street. They promoted the sensation of “feeling the past” by reinforcing fascination and being away in terms of providing a soft distraction from everyday routines. The existing findings revealed that this was related to the emblematic history offered by some historic elements (Lynch, 1981). The details of these old buildings were able to promote such pleasing ends and allowed participants to experience a fascinating and positive distraction. This was reliable with another study done by Ewing (2009) explaining how landmarks were able to generate feelings of physical and psychological wellbeing. It was important to emphasize how sense of history made participants feel attached to the past on an intangible level; thus, this extent as a restorative component of a street allowed them to connect to a “larger world” (Kaplan, 1995). These findings partially supported how walking in historic centers was considered restorative; however, this had previously remained impenetrable (Bornioli, 2018). It would be an added value to examine why walking in or near such historic places evoke restorative vibes and what specific features affected people.

Additionally, walkability especially in internal streets was considered a restorative practice of everyday life. Such practice allowed for generation of significant sensation as it was connected to unproblematic everyday behavior that actively shaped how participants acted in the streets (Certeau, 1984). It could also enhance the relationship between people and places as well as promote wellbeing (Kockova, 2016). Moreover, it seemed that the coherent spatial layout and the interconnectivity of the

internal streets offered positive affective appraisals, cognitive perceptions and enhanced high level of walkability.

However, when literature highlighted build-related features such as well-defined and maintained sidewalks (Karmanov & Hamel, 2008), presence of street furniture such as street benches or streetlighting , presence of display windows of restaurants and pubs, and presence of high number of businesses with unique personal storefronts and many more (Ewing et al., 2015; Porta & Renne, 2005) vital for promotion of wellbeing in the streets, participants didn't mentioned them at all along their go-along. They also didn't highlight the continuous street wall of buildings in promoting wellbeing (Ewing & Handy, 2009). Nevertheless, participants were only focused on the general quality and type of buildings within the streets as they were more interested in the obvious features related to the street and its buildings rather than the details or specifications related to the urban street qualities and notions.

c. Natural-related features

While almost all participants acknowledged the presence of several non-natural street features to be highly critical in experiencing wellbeing, only half of them were purely interested in the restorative potential of specific nature-related features as they affected their initial decision in selecting a street. Specifically, these participants reported that presence of a scenic vegetation, presence of street trees with certain qualities, as well as hearing birds sounds allowed for the promotion of their wellbeing.

First, the go-along findings confirmed that presence of street vegetation was associated with relatively high levels of restoration. It was shown that perceiving the 'green color' in the street was beautiful and unconsciously motivated participants to walk. This naturalness in the streets was identified as an important dimension of

creating aesthetic value as well as having beneficial restorative effects on people (Cackowski & Nasar, 2003). Such finding was also in line with the claim that the greener or more natural the outdoor setting, the better it was likely to be for restoration (Kaplan, 1995). This explained why these participants were able to recognize the importance of vegetation in the choosing a street to relax.

Moreover, provision of vegetation associations and the spaces they occupy such as garden, pocket parks, fences or even buffer zones, were found to offer significant opportunities for restoration and fascination among many participants. Such provision was valued as they contributed to feelings related to refreshment and refurbishment while walking. Participants also expressed that the provision of informal natural elements on both sides of streets increased the opportunity of aesthetic, intrinsic, and perceived value of streets for them. Hence, such findings supported the restorative power of viewing these provisions as it created positive friendly perceptions around active neighborhood (Nordh et al., 2009). This finding was also consistent with previous study explaining how these provisions often provided opportunities for more elaborate visual connection with larger green spaces in nearby sites such as building yards and residential gardens etc. which similarly contributed to wellbeing (Velarde, Fry, & Tveit, 2007).

Adding to that, the integration of natural and non-natural features within a street was highly valued especially when it was in the form of green landmarks such as vegetated buildings, facades, fences, entrances or pavements etc. Many participants highlighted the effect of these landmarks and their capability of evoking fresh feelings and promoting high level of fascination and relaxation. These go-along findings were in line with a study confirming how this integration allowed for sense of care and

permitted experiencing improved mood and attention as well as provided feelings of comfort and cheerfulness essential for human wellbeing in the streets (Elsadek, Liu, & Lian, 2019).

The presence of street trees of specific characteristics was perceived as an essential natural resource important for supporting wellbeing. Such finding appeared to be reliable with earlier studies showing how street trees in the urban setting were seen to bring nature closer to urban residents (Schroeder, Flannigan, & Coles, 2006), and it appeared that many individuals associated these trees as they contributed significantly to their quality of life (Lohr, Pearson-Mims, Tarnai, & Dillman, 2004). Furthermore, it was important to mention that street selection for some participants was based on the presence of specific type of street trees, pine trees and olive trees. Specifically, pines as a tree species were mostly cherished with high restorative ability; such result might be influenced by the cultural value and historical context of Badaro that shaped how these pines were perceived. This neighborhood used to be a pine forest; however, after witnessing severe war and urban transformations, the only pine trees were only left in a particular street, Kfoury street. This could explain why four participants chose this street for the presence of pine. Such finding reinforced how streetscapes with trees were ordinarily more preferred and appreciated than streetscapes without trees (Wolf, 2009), and having trees along streets was just as important for residents as having them in parks (Getz & Gutierrez, 1982).

The symmetric and continuous arrangement of numerous pines in Kfoury street also increased participants' experience of wellbeing. They expressed how the alignment of tall pine trees on both sides of the street was instantly remarked as they created a fascinating calming feeling and promoted the perception of enclosure, spaciousness and

sense of place. This was supported by a previous study showing how street trees of symmetrical, similar height and type along both sides of a streetscape was highly valued and noticed (Weber et al., 2008); they allowed for the promotion of sense of being away and fascination (Lindal & Hartig, 2015). Such enclosing arrangement of pines supported many different types of activities such as walking and thinking, ensuring a high level of compatibility; they created fixed boundaries on both sides allowing participants to feel safe, defined and even memorable (Jacobs, 1993). Likewise, it was important to highlight how sense of enclosure was amplified as number of pines increased and contributed to a positive living environment (Taylor et al., 2015). The go-along findings proved that the street seemed restorative because it was enclosed by closely spaces and numerous pine trees. This was validated by earlier study indicating how majority of residents wanted more trees in their own residential streets, and the desire for more trees was stronger among those who presently had relatively few trees (Kalmbach & Kielbaso, 1979). Hence, a street with specific tree species of high density, planted in symmetric arrangement along its sides conformed to create a restorative environment for participants by reducing their stress and increasing their restoration (Elsadek, Liu, Lian, et al., 2019; Kaplan, 1995).

Additionally, the presence of huge and tall street trees in particular elicited positive emotional and aesthetic reactions and contributed to a sense of wellbeing. This was due to the canopies from the tall pine trees that offered refuge from the sunlight. Such finding was in line with a previous study showing how large trees created canopy important for stress reduction and vitality enhancement while walking in streets (Elsadek, Liu, Lian, et al., 2019). The perception of good quality of other street trees in terms of high level of maintenance and care also attracted and fascinated participants.

Such findings highlighted the importance of stewardship and notions of taking care of trees in the promotion of wellbeing.

Recognizing the vivid bird sounds in a street added to the restorative experiences among participants. In line with literature, the go-along findings confirmed that high level of tranquility was essential for perceiving the bird sounds as restorative since it provided the opportunity to easily escape a heavily trafficked and noisy surrounding; they also validated how these sounds were considered captivating and helpful for experiencing wellbeing and evoking a pleasant feelings (Gidlöf-Gunnarsson & Öhrström, 2007). These finding showed how biophilia influenced the human experience within the streets where affinities towards flora and fauna could be recognized as symbol related to vitality of nature and a sense of all being well in the world (Ratcliffe, Gatersleben, & Sowden, 2013; Wilson, 1984). Similarly, the results appeared to be reliable with SRT theory showing how bird sounds were judged to be restorative as they generated affective appraisals of positive valence and low arousal (Ulrich, 1984). Such restorative perceptions of bird sounds were found to be in line with ART theory as they were perceived as welcome distractions that effortlessly removed participants from cognitive or affective demands (Kaplan, 1992).

On the other hand, it seemed that the presence of potted plants along the streets, presence of small tree sizes or unmanicured or even informal street trees, as well as presence of decorative green walls of some restaurants and pubs weren't highlighted by any participants. Additionally, urban green spaces nearby Badaro such as Horsh Beirut and Beirut Hippodrome didn't add any value in the promotion of wellbeing for any participants. Such go-along findings appeared to be consistent with Wandersee and Schussler's work about "plant blindness" to describe how the widespread lack of

awareness of plants between urban dwellers (Wandersee & Schussler, 1999). That was why participants were unable to see or notice these plants in the biosphere and in the human affairs. Moreover, the findings confirmed former study by Wilkins (1988) showing how plants were the most important, least understood, and most taken-for-granted of all living things (Wilkins, 1988). It also supported a previous study showing how many people considered plants to be lifeless especially urban dwellers, who were not regularly in direct contact with plants, and who looked at animals more regularly than plants (Wandersee & Schussler, 2001). Since participants weren't able to distinguish the mentioned nature-related features or appreciate their value, it seemed that there was the issue of scale where anything small was not seen or noticed. They only detected vegetation in terms of huge street trees or specific type of species or certain type of intervention. However, there were certain plants didn't get any visual attention (Wandersee & Schussler, 2001). This might be due to that fact that participants perceived the potted plants or small green decorations as static and they classified them as bulk visual categories' because they didn't move, except in the wind (Zakia, 1997). Similarly, these nature-related features might blend in with the background where leaves of non-flowering plants were lost in the chromatic homogeneity and that was why they didn't catch the attention of the participant (Wandersee & Schussler, 2001). In addition to the above arguments, Allen (2003) affirmed that plant blindness and neglect was not only due to the above biological and social biases stated by Wandersee and Schussler (2001), but it was often the result of educational biases such as zoo-chauvinism practiced by biology educators at all educational levels, who tend to use animal examples to teach basic biological concepts (Allen, 2003).

B. Insightful Findings and Design Recommendations for Restorative Streets

The insightful findings and major lessons learned from comparing all findings are offered below. Generally, insights related to street selection, reasons of such selection as well as streetscape features are presented to have a better understanding how to design streets for wellbeing.

1. Insightful Findings

a. To what extent does vegetation play a role

In general, street vegetation played a major role in some people's lives yet to a certain extent despite the existence of other non-natural features. For participants who saw vegetation in the streets, it was mainly about presence of cultural trees species such as pine trees that motivated them and allowed them to experience wellbeing. It was important to highlight that the appreciation and recognition of pines was enhanced by presence of specific street notions such as quietness and cleanliness. Adding to that, participants were able to recognize evident interventions with street trees such as well-maintained streets as well as presence of numerous street trees essential for the promotion of wellbeing.

Other than that, it seemed that there were participants had plant blindness since that was all the aspects that they were able to see. This was the case with other participants who didn't mention or pay any attention for nature-related features available in the street. Some of them focused only on social life in the street in terms of presence of active people and the presence of social gathering places; they considered them vital for wellbeing. Such finding showed that how vegetation was somehow masked by the restorative effect of the social- related features of a street and in some

cases, they were taken for granted and not appreciated. However, this wasn't the case with build-related features as most of participants were able to recognize the combined effect of build and natural-related features for the promotion of wellbeing. The integration of vegetation within build structures was important for wellbeing and emphasizing the role and value of vegetation itself.

b. Importance of people's connection with nature

Parameters that affected the role of vegetation in people's lives were related to differences in environmental preference, socio-demographic specifically age and childhood experiences. It seemed that older people appreciated vegetation more than younger individuals. Also, people who used to live in villages might notice and value urban vegetation more than those who were not. Perhaps that was why some participants immediately chose a green street to walk as they felt the more attached and connected to nature. It would be interesting in further studies to understand the effects of such parameters on experiencing wellbeing in the streets especially on maximizing the role of vegetation in promoting wellbeing in Badaro.

c. A lively street overpowering crowdedness

The findings highlighted that participants prioritized the street's sense of liveliness and were able to accept the high level of crowdedness in terms of traffic and car horns in the street. They were able to associate these features clearly with experiencing sense of community and belonging while walking. This was also related to perceived safety and security that could contribute to restoration.

2. *General Design recommendations*

Based on the findings, a set of general design recommendations for the creation of restorative streets can be proposed as following:

a. General Street Design Recommendations

- Design variety of streets for people. This can be done by creating typologies of different atmospheres and characters to serve their dissimilar needs and meet their moods and preferences:
 - Create quiet and highly vegetated streets as they are important for restoring and enhancing wellbeing by making sure they have low number of people, minimal ground activity and low level of traffic.
 - Create neat and clean streets by enhancing sense of care, cleanliness and neatness while walking.
 - Create safe and secure streets for people to help them feel comfortable and relaxed while walking.
 - Create vibrant streets to encourage some sort of social activity to promote sense of liveliness, sense of community as well as sense of belonging among people.
 - For small and narrow streets that may appear private: ensure people can actually see them and feel they are welcomed and invited to enter. This can be done by making those streets appear more public and unrestricted to encourage people walking there. This can be done by placing appropriate street furniture such as:

- Adequate signages to lead the user.
- Proper street lightening street to highlight the street's ground especially at night.
- Small public bench to provide opportunity to sit and socialize.

b. Detailed Street Design Recommendations

- To enhance specific restorative social-related features in a street:
 - Focus on creating informal gathering places for all people along the street to enable human diversity, activities and liveliness. This can be done by:
 - Encourage the presence of coffee shops and restaurants of different styles and characters to meet people's diverse social preferences.
 - Ensure these social spots are flexible and adaptable to variety of users for various activities.
- To enhance specific restorative build-related features in a street:
 - Ensure the layout of the street is visually pleasant and appealing as it can allow for the promotion of wellbeing. This can be done by:
 - Ensure that the general physical appearance of street is well-maintained and friendly to highlight notions related to beauty and care.

- Identify and restore old heritage buildings and their details along the street as they stimulate sense of identity, history important for promotion of wellbeing.
 - Make sure old and emerging modern constructions are built next to each other in a harmonious way within the same existing neighborhood.
 - Make sure to integrate vegetation within the build structure such as: Decorate fences, buildings' entrances and balconies etc. with appropriate vegetation as their provision can contribute to the beautification of the street and enhance notions related to visual privacy as well as the sense of place and identity among people.
- To enhance specific restorative nature-related features in a street:
 - Ensure the presence of street vegetation that people aren't 'blind' to:
 - Consider suitable plant selection of street trees important for people: specific street tree species that related to the history and cultural context of the neighborhood such as pine trees and olive trees.
 - Plant tall street trees such as pine trees in a symmetric arrangement along the sides of a street as they are able to create a fascinating calming feeling and promote the perception of enclosure, spaciousness and sense of place important for people's wellbeing.
 - Plant big size street trees as they provide large canopies for shade leading to restorative views.

- Make sure street trees are manicured and well-maintained as they enhance notions of care and beauty in the street.
- Enhance the presence of biodiversity especially birds to enhance wellbeing by incorporating trees and native plants that will draw them to the street.

C. Research Limitations

Although the current study offers a number of strengths, it still possesses some limitations that must be considered relative to other studies and methods. Limitations related to methodological, practical and contextual considerations are addressed below:

- Limitation related to Go-Along Interviews:
 - *Sample of a specific city population:*

The go-along interview findings were drawn from a sample of a specific city in Beirut and might not generalize to other groups. In other words, this might affect the results when conducting such interviews with a different group from another city.

However, this qualitative approach aimed to offer a rich and thick account of participants' restorative experiences within Badaro's streets, and this was also aided by the photographic evidence. These findings potentially generalize more eagerly to some settings rather than others; Badaro being in the middle of Beirut, it was recognized for having a strong and distinctive cultural identity. This was one of the key features highlighted in participants' conveyed walking experiences. Consequently, the findings also supported the idea that current urban design efforts to maximize diversity and uniqueness in the context of urbanization could have constructive restorative results.

- *Subjective selection biases:*

Such biases linked with voluntary participation were recognized. Yet, a purposeful sampling strategy allowed for a specific criterion in data collection, expanded the range of experiences recorded for the given number of participants; it included both nature and urban-oriented individuals participating in the go-along interviews. Nonetheless, the study embodies an initial investigation, which will need to be followed by supplementary qualitative and quantitative research with a wider array of participants before its normative implication can be clarified.

- *Weather or seasonal conditions:*

The utility of go-along interviews as walk-along was influenced by weather circumstance outside my control. For example, all these interviews were conducted between mid -February and early March- ending of winter season. The weather during this period was considered somehow unstable as it was raining and windy in some days; this created an obstacle for a couple of participants as they wanted to reschedule the interview. Moreover, I believe this had probably affected the type of information gathered; specific notions or qualities within the streets and categories of experiences related to color and smell of vegetation might not have been well presented. It was hence possible that the urban restorative experience might differ with different season or weather conditions as seasonal features might be distinctive.

- *Timing of go-along:*

Depending on participant's availability from work or personal demands, the time of the day in which the go-along interviews were conducted was considered a limitation. The current findings referred to walking in daylight (between morning and late afternoon) thus affecting the type of information generation regarding the frequency of social activity throughout the course of the day. Adding to that, the findings might

not be applicable when conducting the go-along interview at nighttime where new notions might have been empathized by participants.

- *Cellphone as recording equipment:*

Using a cellphone (iPhone) as a chosen equipment for the go-along interviews, the quality of my recordings was affected in some cases. Although the recordings were quite effective in picking up both the participant's answers or comments as well as my interactions, but their quality was impacted when passing through a busy street in terms of high level of traffic, car horns and loud people. It seemed that this equipment might not be the most optimal for recording conversations in outdoor environments—particularly settings that contain substantial noise.

- Country's overall situational crisis:

- *Issue of safety (Protests and COVID-19):*

When conducting the go-along interviews, there was a series of civil protests that were occurring in Lebanon from mid of October as a result of a convergence of calamities, starting with the collapse of the Lebanese economy, now compounded by the COVID-19 pandemic and correlated global recession, which may yet develop into the first global depression since the 1930s. Although the go-along interviews were conducted before the full evolution of the crisis; however, these circumstances might have placed many citizens in a harm's way; thus, affecting indirectly their overall urban wellbeing while walking as safety was an essential factor to consider. It was a limitation as I couldn't conduct any go-along interviews anymore even though I had reached saturation. This forced me to adjust my methodology in terms of just sticking to one community instead of three communities.

D. Overall Research Contributions and Implications for Planning Studies

Despite the mentioned limitations, the current thesis has the strength of being the first empirical participant-based qualitative exploration of the restorative potential of streets and identification of their restorative landscape features in Badaro.

Being the urban typologies where most individuals spend most of their time, the topic of investigating streetscape's potential in promoting wellbeing has important policy implications for landscape and public health fields. Based on the findings, the integration of natural and non-natural landscape features can aid in the promotion of wellbeing, future research on the full range of these combination in urban settings that can support health and wellbeing outcomes is necessary. Forthcoming quantitative or qualitative or even mixed methods research can further explore the role of unexplored mixed characteristics in the restorative urban experience.

Adding to that, there are several novel contributions to the landscape research and design fields that are made through this thesis. First, this study helps understanding the potential of daily small-scale urban landscapes as restorative streets and expanding on the notion of streetscapes as important urban landscapes for wellbeing. Another contribution is at the level of landscape research methodology whereby a reliance on the study of users' perception and preference helps in creating knowledge of local landscape and environmental restoration in the East Mediterranean, beyond the existing framework of restorative landscapes and environmental psychology which have been mainly developed and tested in Europe and North America. Lastly the knowledge produced through this investigation results in a creation of a set of design recommendations for the optimal design of streetscapes as multifunctional, restorative landscapes with ecological and social benefits. These recommendations serve

landscape designers, architects and planners as well as researchers within the field locally and internationally.

While showing more room for improvement, this study has verified the usefulness of the go-along interview methodology for restorative urban research. As stated by Braun and Clarke, this method efficaciously contributes to uncovering restorative experiences related to street; it is coupled with the process of taking photographs along the walk as evidence to add an additional layer of complexity and contribute to the richness and thickness of the interviews (Braun and Clarke, 2006). Furthermore, this method offers great potential for further studies in landscape and urban planning (Bergeron, 2014) and it founds a valuable supplement to the traditional personal perspective since it is able to identify the restorative potential of streetscape and what features impact locals. This effective tool is able to provoke a wide array of perceptions of wellbeing in streetscape from a limited number of participants. Revealing what wellbeing in streets meant to people and what were restorative landscape features they look for in a street are essential ingredients for future planning approaches. Unlike traditional sit-down interviews, such information can then inform professionals, urban planners and policymakers when it comes to foreseeing the imminent cities for people. Finally, evidence on the extent urban vegetation impacting people and what specific features or qualities that promote wellbeing is equally edifying. Rather than letting unexplored features and themes be, these could become the object of attention and highlighted in a comprehensive landscape planning and design strategy. Therefore, this method could be seen as precious principally in the restorative settings research field, where quantitative methods are generally prevalent.

CHAPTER VII

CONCLUSION

In rapidly urbanizing areas, where limited green space is scarce, streetscapes are considered important outdoor environments. Research investigated that outdoor spaces and urban green spaces benefit human wellbeing and provide restoration. While studies in North America and Europe have explored the capacity of small urban areas such as pocket parks and residential gardens in promoting wellbeing, to our knowledge, no published work has looked at the potential of streetscapes as restorative landscapes in more arid climates of the Mediterranean such as in Lebanon. Therefore the purpose of this qualitative study was to examine the restorative potential associated with Badaro's streetscapes by identifying their restorative landscape features.

Through this thesis, synthesis of landscape features that impacted wellbeing were created based on literature. Badaro was introduced and described as my case study. Another important part of the methodology was conducting go-along interviews as it showed the persons' understanding of what promoted wellbeing in the streets. This qualitative method shed light on the nature of users' experiences in the streets and allowed for better understanding of what impacted wellbeing in the street.

Generally, participants reported wellbeing benefits primarily in terms of experiencing feelings of being away, refreshed, fascinated, comfortable and relaxed while walking. These positive benefits were often reported in specific streets due to specific reasons. Mainly notions related to proximity and familiarity, calmness, neatness, cleanliness and liveliness played a role in selecting a street for wellbeing. The go-along findings highlighted important themes linking landscape features to wellbeing.

One important outcome of this research was identification of the restorative landscape features that in terms of social, build and nature-related features. For instance, themes related to natural aspect of streets such as restorative street greenery, street trees and their restorative qualities as well as interacting with biodiversity were considered important for the promotion of wellbeing. Whereas themes related to non-natural aspect of street such interaction between social places and people and visual characteristics of Badaro's architecture as well as walkability in internal streets were considered restorative. After discussing these findings with literature, these findings highlighted that street vegetation played a major role in some people's lives yet to a certain extent despite the existence of other non-natural features. This was due to plant blindness that allowed them to see specific aspects of vegetation and disregarded others. The connection with nature was also valued in contributing to wellbeing. Moreover, the findings confirmed that a lively street overpowered crowdedness. Most importantly, this study allowed for the generation of a set of general recommendations for the design of more psychologically, physically, socially restorative urban residential streetscape. Individual perceptions and needs should also be taken into account when designing streetscapes as urban green spaces for people's wellbeing.

Therefore, in the planning and design of streets, priority should be given to implementing these landscape features and maximize their restorative ability in the street. Nevertheless, the question of whether these landscape features are applicable to other arid cities still remain an outstanding problem in restorative environments research and much remains to be learned about how to create optimally restorative urban built and green spaces.

APPENDIX

APPENDIX 1

SYNTHESIS OF STREET FEATURES THAT IMPACT WELLBEING BASED ON THE LITERATURE

The below synthesized tables show the social, build and nature-related street features that impact wellbeing based on the literature.

General category of street features	Classification of general category of street features	Street feature or element	Characteristic/ qualities / notions of street feature				Type of wellbeing promoted	Articles
			General aspect	Specific entity/ type	Details about the specific quality	Factors/ Habits related to features		
Social- related features								
Social-related features	Social life in public space	<i>Livable & vibrant street</i>	Sense of liveliness	presence of number of people		Social wellbeing: ability to support, facilitate, & promote public life Mental wellbeing: promote relaxation	Mehta (2007)	
				support stationary activities: provide opportunities for short-term, low-intensity contacts that constitute easy interactions with other people				
			Sense of familiarity & Sense of belonging to the community	accessible to the public: offer the possibility of repeated use to build up associations & value to the community of users		Social wellbeing: significant to the neighbors and achieve a social value and meaning		
		Presence of stationary, lingering, and social activities	Stationary and Lingering Activities: sitting, standing, lying, eating/drinking, reading, using a laptop, shopping, window-shopping etc.... Social activities: talking, eating or drinking, walking pets, window-shopping etc....	Aspects of the street that help support these activities: → combination of characteristics of the street that are affected by businesses and land uses → function of the seating provided on the street by businesses → community places aspect	Physical wellbeing: improve pedestrian movement. Social wellbeing: useful and meaningful for people when there are community gathering places and a variety of activity			
	<i>Social street</i>	Various possibilities for social contact	open to the public → people are present throughout the day and week, engaged		Social wellbeing: social contact	Mental wellbeing: experience	Mehta (2019)	
			serve the needs of people of the neighborhood and the city					

General category of street features	Classification of general category of street features	Street feature or element	Characteristic/ qualities / notions of street feature				Type of wellbeing promoted	Articles
			General aspect	Specific entity/ type	Details about the specific quality	Factors/ Habits related to features		
				presence of wide-ranging social, political and economic activities		diversity, enhances personal growth.		
			Place of high diversity	high density of use high range of activities: varied social life with many diverse groups of people and activities.		Social wellbeing: provide a comfort and at easiness	Mehta (2019)	
			Social behavior	passive sociability → Being alone in public is a social behavior <ul style="list-style-type: none"> - Public solitude: read, work, eat and drink alone and only engaged in minimal & essential conversation. - Spectating & display sights, sounds and smells of bodies moving through space, see new and familiar faces & activities etc. - relaxation: associated with eating, drinking, reading or watching people and activities. 		Social wellbeing: Social interaction	Mehta (2019)	
				Fleeting sociability: opportunity it provides for neighbors to cross paths as a part of the daily round: small chitchat, conversation → constitute easy interactions with other people in a relaxed and relatively undemanding way. Factors affecting: Design and management: <ul style="list-style-type: none"> - The width of sidewalks for walking, strolling, and walking pets etc. - Managed traffic speed through various traffic calming measures - Articulated facades allowed people to stop by and talk in a semi-enclosed sheltered space away from the flow of movement. - Opportunities to sit on benches, chairs or other sitting space on the street. 		Social wellbeing: trigger social interaction, endure social relationships.		
				Enduring sociability: intimate relationships and affiliations → more frequent and repeated contact amongst the persons. <ul style="list-style-type: none"> - place to actively connect with their companions, friends and the community. - Intimate relationships comprise meeting of close friends or partners. - regular meeting of a group of friends or acquaintances. 		Social wellbeing: Endure sociability provides interest, stimulation & excitement; sustained human company; Reinforces a sense of community		

General category of street features	Classification of general category of street features	Street feature or element	Characteristic/ qualities / notions of street feature				Type of wellbeing promoted	Articles			
			General aspect	Specific entity/ type	Details about the specific quality	Factors/ Habits related to features					
Physical or Build- related features											
Physical or Build-related features	Architectural features of build environment	Physical attributes of the streetscape	Building height	Higher buildings decreased the sense of being away	Moderate levels of enclosure are preferred over both very low and very high levels	Mental wellbeing: promote sense of being away	Lindal et al. (2013)				
			Number of turns in the skyline silhouette	Perceived complexity Number of points that construct a geometric shape	positively associated with the number of turns in skyline silhouettes	Mental wellbeing: promote sense of being away & fasciation					
			Façade details	Increasing the details of the façades and overall variation on the streetscape level	Perceived surface complexity increased with increased window and door trims						
			Entropy on the streetscape level	High levels of architectural variation within low range of entropy	The effect of entropy on restoration likelihood was positive						
	Streetscape features related to pedestrian activity			The number of pieces of street furniture	all kinds of signs, benches, parking, meters, trash cans etc.	anything at human scale that increases the <u>complexity of the street</u> .	Social wellbeing: significant influence on pedestrian activity.	Ewing et al. (2015)			
				The proportion of active street frontage	shops, restaurants, public parks, and other uses that generate significant pedestrian traffic.	monitor land use changes at the street level before investing in streetscape projects.	Physical wellbeing: create walkable streets & pedestrian-friendly environments				
				Proportion of windows on the street	presence of retail activities → related to transparency	street vitality highly → interaction with adjacent buildings					
				Urban design qualities in terms of physical characteristics of streets and their edges			Imageability: Significance of the number of people	importance of human activity in creating imageable places. The lack of significance of landmarks, distinctive architecture and public art forces us to rethink just what makes a place memorable. [17] [SEP]	Affects sense of place	Physical wellbeing: significant associations with walking behavior	Ewing et al. (2009)
							Enclosure: continuous 'street wall' of building facades	more continuous 'street wall' of building facades, on each side of the street, adds to the perception of enclosure.	the average street width, average building setback, average building height and relationship between the width of the street and building height were not significant.	Physical wellbeing: significant associations with walking behavior.	
							Human Scale presence of first floor windows, small planters	increase the perception of human scale. [17] [SEP]	the number of long sight lines and building height on the same side of the street detract from the perception of human scale	Physical wellbeing: significant associations with	

General category of street features	Classification of general category of street features	Street feature or element	Characteristic/ qualities / notions of street feature				Type of wellbeing promoted	Articles
			General aspect	Specific entity/ type	Details about the specific quality	Factors/ Habits related to features		
			& street furniture				walking behavior ^[1] _[SEP]	
			Transparency : Visual of building Having human activity along the street	see into buildings and having human activity along the street contribute to the perception of transparency.	windows above ground-level do not increase the perception of transparency		Physical wellbeing: significant associations with walking behavior.	
			Complexity: Significance of people presence of outdoor dining	The significance of people and outdoor dining suggests that human activity may contribute as much to the perception of complexity as do physical elements.	The lack of significance of several other variables is notable: number of building materials, number of building projections etc.		Physical wellbeing: significant associations with walking behavior.	
		Characteristics of urban settings with high restorative potential	Well-designed & attractive urban environment	Ingenuously designed, internationally acclaimed, well-maintained the intricate spatial layout of the area → <i>sense of mystery and suggest an opportunity for exploration</i> the presence of landmarks (two high-rise apartment buildings): → <i>provide a sense of ease and rest</i>	A significant positive correlation between affective restoration and beauty ratings of an environment (Van den Berg et al., 2003).		Mental wellbeing: stress-reducing & mood-enhancing power	Karmanov et al. (2008)
			Characteristics of a sustainable streets	narrow streets as possible → to accommodate the pedestrian over the automobile Do not isolate buildings in lots Make many small buildings instead of few large ones. Design retail at the ground floor wherever possible. ^[1] _[SEP] Avoid parking lots Design porticos, arcades, low fencing, stoops, shelters. Avoid blank walls.	<u>Urban fabric indicators</u> - accessibility (pedsheds) - land use diversity, public/private realm - natural surveillance (fronts and backs) - permeability/street connectivity - employment density - number of buildings & lots <u>Street indicators</u> - sky exposure - façade continuity - softness - social width		Social wellbeing: promoting sustainability Physical wellbeing: encourage people to walk, physical activity	Porta et al. (2005)

General category of street features	Classification of general category of street features	Street feature or element	Characteristic/ qualities / notions of street feature				Type of wellbeing promoted	Articles
			General aspect	Specific entity/ type	Details about the specific quality	Factors/ Habits related to features		
				Put trees on wide streets Places for sitting are all-important		<ul style="list-style-type: none"> - visual complexity - number of buildings, - sedibility - detractors. 		
		Spatial dimension of urban open spaces	Contemporary Urban Regeneration	Urban integration based on smaller facets of open space for respite and escape. → web or mesh-like structure that links together a system of smaller spaces,		Spatial arrangement has restorative potential → its capacity to facilitate social interaction.	Mental wellbeing: promote restoration Social & physical wellbeing: cities become sustainable & livable	Thwaites et al. (2005)
			Spatial sensation of center	notion of order as an unbroken spatial; continuity consisting of distinguishable		fundamental part of a deeper and more complex attempt to unify geometry, human experience	Social wellbeing: sustaining human fulfilment	

General category of street features	Classification of general category of street features	Street feature or element	Characteristic/ qualities / notions of street feature				Type of wellbeing promoted	Articles
			General aspect	Specific entity/ type	Details about the specific quality	Factors/ Habits related to features		
Nature-related features								
Nature-related features	Type of Nature	Natural landscape	Views of natural landscape	Pleasant or visually attractive landscape:	All idyllic places such as: Seaside, mountains, lakes, streams, forests, meadows	preferred destinations; easily accessible	Mental wellbeing: 'getting away'; resting one's directed attention	Kaplan (1995)
					Favorite places such as: Parks, beaches (lakeshores) or forests	Frequency of visiting & the length of stay in the favorite place, or other green space	Mental wellbeing: forgetting worries, clearing away random thoughts, recovering attentional focus etc.	Korpela et al. (2008)
					Well-endowed with fascinating objects: clouds, sunsets, snow patterns, the motion of the leaves in the breeze	People find engrossing & effortless	Mental wellbeing: Soft fascination; promote a sense of being connected to past eras & past environments	Kaplan (1995)

General category of street features	Classification of general category of street features	Street feature or element	Characteristic/ qualities / notions of street feature				Type of wellbeing promoted	Articles		
			General aspect	Specific entity/ type	Details about the specific quality	Factors/ Habits related to features				
					A relatively small area: Presence of historic artifacts					
					Presence of high amount of vegetation	Perception of green areas	Mental wellbeing: reduce stress, create feelings of pleasantness & calmness	Gidlof-Gunnarsson & Ohrstrom (2007)		
					High amount of open space	Best balance between tranquility and danger concerns	Social wellbeing: lower crime rates & feelings of safety in cities	Herzog et al. (2000)		
					Arrangement of natural elements: Presence of relatively permeable hedges	retaining the employee's ability to see others approaching	Social wellbeing: Feelings of safety in cities →constitute protective cover	Herzog et al. (2000)		
			Soundscape in natural settings	Positive soundscape found in natural landscape:	Natural sounds in green areas: Birdsong; wind in trees; sounds from water	Positively judged and preferred than mechanical sounds	Mental wellbeing: opportunities to easily escape a heavily trafficked and noisy surrounding; perceive a more positive and tranquil sound environment; evoke pleasant feelings	Gidlof-Gunnarsson & Ohrstrom (2007)		
					Sounds from children playing in green areas	Availability to green areas was "better" compared to "poorer" indicate that nearby green urban areas				
		Urban landscape	Elements of urban vegetation	Flower beds	Availability of flower beds: Presence of flower beds beside buildings	Positively affected judgments of restoration likelihood.	Mental wellbeing: Increase perceptions of being away & fascination	Lindal et al. (2015)		
					Color of flower: Bright flowers for a street flower bed; Various colors of flowers	Flowers were appreciated; Most favored element			Mental wellbeing: contribute to the aesthetic quality of a street & provide positive influence on psychological wellbeing.	Todorova et al., (2004)
					Flower arrangements: compact and tidy compositions.	For pedestrian convenience				
					Shape of the plot Long plot type of flower bed	when planning the shape of a plot, its contents should be taken into account.				
				Grass	Availability & presence of grass	judgments of restoration likelihood being away as the mediator	Mental wellbeing: Being away;	Lindal et al. (2015)		

General category of street features	Classification of general category of street features	Street feature or element	Characteristic/ qualities / notions of street feature				Type of wellbeing promoted	Articles
			General aspect	Specific entity/ type	Details about the specific quality	Factors/ Habits related to features		
					<p>Grass maintenance: Presence of well-maintained grass</p>	<p>Condition of grass is more evident when:</p> <p>trees are not blocking the view</p> <p>view looks down onto the grass rather than across the trees</p>	<p>Social wellbeing: sense of safety in cities</p>	<p>Kuo et al. (1998)</p>
					<p>Grass environment: Type of ground texture</p>	<p>Important to the perception of depth; More spacious green area</p>	<p>Mental wellbeing: influence affective reactions; extent</p> <p>Social wellbeing: social interaction: activities</p> <p>Physical wellbeing: walking</p>	<p>Huang et al. (2020)</p>
				Trees	<p>Street trees density Presence of high tree density; Large number of trees in streetscape</p>	<p>Residents responded extremely positively to the presence of trees → preference & sense of safety.</p>	<p>Social wellbeing: sense of safety in cities</p>	<p>Kuo et al. (1998)</p>
					<p>Being away & fascination added as mediators</p>	<p>Mental wellbeing: Being away & fascination; contribute positively to restoration likelihood</p>	<p>Lindal et al. (2015)</p>	
					<p>Ways in which street trees may contribute to a positive living environment :</p> <p>narrower roads or trees close to roadways appear to be linked to slower or safer driving</p>	<p>Mental wellbeing: lower antidepressant prescription rates; improved psychological restoration</p> <p>Social wellbeing: supports stronger neighborhood social ties</p> <p>physical wellbeing: promote physical activity</p>	<p>Taylor et al. (2015)</p>	

General category of street features	Classification of general category of street features	Street feature or element	Characteristic/ qualities / notions of street feature				Type of wellbeing promoted	Articles
			General aspect	Specific entity/ type	Details about the specific quality	Factors/ Habits related to features		
						Urban roadside trees: Increasing amounts of vegetation	Mental wellbeing: reduce stress & anxiety, increase restoration & vitality + Microclimatic & psychological benefits	Elsadek et al (2019)
					Street trees arrangement: Streetscapes with trees arranged symmetrically along both sides (symmetrical patterns)	fascination was added as a mediator correlate positively with both rated restoration likelihood & preference	Mental wellbeing: Bring away & Fascination	Lindal et al. (2015)
					Increasing tree canopy cover in urban residential roads → high levels of shade	should be incorporated as a guideline for urban green space managers to provide cities with the appropriate tree species where people can relax by walking along urban road	Mental wellbeing: reduce stress and anxiety; increase restoration & vitality Microclimate benefits	Elsadek et al (2019)
			Vegetation within human build interventions	Presence of spontaneous vegetation within pavements:	lowly managed pavements with spontaneous vegetation → more beautiful and less boring Vegetation with visible signs of human actions or managements pavements containing vegetation integrated in small design interventions (flowers seeded in foot of wall, design of a meadow strip along the pavement) → People frequently connected with nature: had <ul style="list-style-type: none"> - the highest preferences for vegetated pavements, spontaneous or integrated in designs - high qualification level and older people 	Mental wellbeing: daily biodiversity-friendly urban greenspaces appreciated by urban dwellers.	Bonthoux et al. 2019	

General category of street features	Classification of general category of street features	Street feature or element	Characteristic/ qualities / notions of street feature				Type of wellbeing promoted	Articles
			General aspect	Specific entity/ type	Details about the specific quality	Factors/ Habits related to features		
			Type of urban green spaces	Wild spaces in urban cities	Presence of wild spaces: Linear corridors along creeks & rivers; Large wild urban woodlands/ Increasing species diversity/ biodiversity	Mental wellbeing: psychological benefits Physical wellbeing: increase physical activity Social wellbeing: play an important role in the lived experience of children	Threlfall et al. (2018)	
				Green build interventions	Presence of Green facades Viewing the green façade Integration of vertical greening in buildings in future compact cities should be considered	Mental wellbeing: Improving cerebral activity, Better relaxation	Elsadek et al. (2019)	
						Provision of green roofs	Social wellbeing: Environmental benefits (i.e. urban cooling).	Hunter et al. (2019)
				Informal urban green spaces	Presence of Vacant lots Vacant lots that are allowed to grow wild → Benefits of greening vacant lots/ increased vegetation and tree density in cities	Mental wellbeing: Increase urban biodiversity Social wellbeing: Economic benefits to urban residents; provision of ecosystem services, Increase property values; feelings of safety in an environment	Anderson et al. (2016)	
						Greening of vacant lots	Mental wellbeing: promote health & wellbeing Social wellbeing: reduction in crime, increased perceptions of safety; Environmental benefits: increased biodiversity etc.	Hunter et al. (2019)
				Nearby green areas in urban settings:	Availability of nearby trees and grass visible from apartment buildings potential substitute for restoration outside home.	Mental wellbeing: reduce mental fatigue	Kuo et al. (2001)	
						Provision of green spaces	Mental wellbeing: Enhance the city's	Karmanov et al. (2008)

General category of street features	Classification of general category of street features	Street feature or element	Characteristic/ qualities / notions of street feature				Type of wellbeing promoted	Articles
			General aspect	Specific entity/ type	Details about the specific quality	Factors/ Habits related to features		
							restorative potential.	
					Availability to nearby green areas Green areas directly available or within a few minutes' walk from the apartments		Mental wellbeing: moderate or buffer the effects of chronic-noise exposure on health & wellbeing. Physical wellbeing: Walking.	Gidlof-Gunnarsson & Ohrstrom (2007)
			Parks		Scenic Parkway design: Presence of fewer lanes; Wide, green median rather than the concrete barrier; Presence of rich vegetation		Mental wellbeing: Recovery from stress high frustration tolerance; positive emotions etc.	Cackowski & Nasar (2003)
					Design of park affect its size Small urban parks designed to look big.		Mental wellbeing: Fascination, being away	Nordh et al, (2009)
					Presence of components to create the pocket park: Presences of natural component: Presence of water; Presence of bushes & trees visible Ground surface covered by grass/ high density of the green walls		Mental wellbeing: Being away→ offer some enclosure; likely promote restoration	
				Provision of park	Glance of a small park on the way to work/home Close Proximity: highly valued green area→more often it will be visited		Mental wellbeing: positive influence on mood Social wellbeing: feel safe	Grahn et al. (2010) (2003)
					Urban park scenes: <ul style="list-style-type: none">Place attachment: stronger place identity and restorative perceptions		Mental wellbeing: enhance individuals' self-esteem, improve perceived quality of life etc. Social wellbeing: increase social wellbeing	Liu et al. (2020)
			Gardens		Informal gardens: visually appealing; more informal design elements; contained more natural than built elements		Mental wellbeing (making them ideally suited	Twedt et al. (2016);

General category of street features	Classification of general category of street features	Street feature or element	Characteristic/ qualities / notions of street feature				Type of wellbeing promoted	Articles
			General aspect	Specific entity/ type	Details about the specific quality	Factors/ Habits related to features		
							for restorative experiences)	
					Healing garden Accessible to everybody; Balance between just being in the garden experiencing it & working with gardening		Mental wellbeing: Healing→impact of the physical environment on people's health & wellbeing.	Stigsdotter et al. (2002)
					Private/ residential gardens Green yard belonging to a residential block: High amount of verdure in the garden; adjacent to one's apartment		Mental wellbeing: stress prevention	Stigsdotter et al. (2004)
					Community gardens Communal gardening on allotment sites: inclusionary spaces		Mental wellbeing: sense of achievement, satisfaction & aesthetic pleasure Social wellbeing: social integration & social cohesion; combats social isolation etc.	Armstrong et al. (2000)

APPENDIX 2

INVITATION SCRIPT - ENGLISH VERSION



AUB Social & Behavioral Sciences

INVITATION SCRIPT

Invitation to Participate in a Research Study

This notice is for an AUB-IRB Approved Research Study

for Thuraya Abu Merhi at AUB.

Tka10@mail.aub.edu

Landscape Design & Ecosystem Management

It is not an Official Message from AUB

I am inviting you to participate in a research study about experiencing wellbeing in the streets of Beirut and identifying to what extent does urban vegetation play a role in people's lives. You will be asked to participate in a semi-structured 'go-along' interview to understand your overall urban experience. You will be asked to walk-along your favorite street that makes you happy, relaxed and comfortable in attempts to have a better understanding of the potential of urban vegetation and other existing street features in promoting wellbeing in Beirut. You are invited because we are targeting people living or working in or around a specific green neighborhood. The estimated time to complete the go-along interview is approximately 45 minutes. The research is conducted face to face in a street of your choice in your neighborhood. Please read the consent form and consider whether you want to be involved in the study. If you have any questions about this study, you may contact me on phone: 70/802520 or email: tka10@mail.aub.edu. You may contact the principal investigator Dr. Nayla Al-Akl on 01/350000 ext. 4457 or by email: na143@aub.edu.lb.

INVITATION SCRIPT - ARABIC VERSION

قسم العلوم الاجتماعية والسلوكية - الجامعة الأميركية في بيروت

دعوة للمشاركة في دراسة بحثية

هذا إشعار لدراسة في الجامعة الأميركية في بيروت -
للطالبة الباحثة ثريا أبو مرعي في الجامعة الأميركية في بيروت
البريد الإلكتروني: Tka10@mail.aub.edu
قسم تصميم المساحات الخضراء

* إنها ليست رسالة رسمية من الجامعة الأميركية في بيروت *

أدعوكم للمشاركة في دراسة بحثية حول تأثير الخصائص المتواجدة في شوارع بيروت على راحة وسعادة الناس، وبشكل خاص الدور الذي يلعبه الخضار المتواجد في شوارعنا، من خلال معرفة آراء سكان المدينة حول هذا الموضوع.

سوف يطلب منك المشاركة في مقابلة أثناء سيرك في شارعك المفضل التي تختاره في حيك. ستغطي أسئلة المقابلة ما تراه وتشعر به من أجل الحصول على معلومات مفصلة وتفاعلية بغية فهم تجربتك المدنية ومدى تأثير مميزات الشوارع، وبشكل خاص الخضار، على سعادتك وراحتك.

انت مدعو لأننا نستهدف حوالي 30 شخص موزعين على ثلاثة أحياء محددة في بيروت، من المقيمين، العاملين، أصحاب المحال التجارية أو حتى من المارة في شوارع الأحياء المختارة.

الوقت المقدر لإكمال هذه المقابلة ما يقارب 45 دقيقة.

يجرى هذا البحث وجهًا لوجه أثناء السير في الشارع الذي تختاره في حيك.

يرجى قراءة استمارة الموافقة والنظر في ما إذا كنت تريد أن تشارك في الدراسة.

إن كانت لديك أي أسئلة حول الدراسة، يرجى الاتصال بالطالبة الباحثة ثريا أبو مرعي على الرقم 70/802520 أو على البريد الإلكتروني: tka10@mail.aub.edu أو بالباحثة الرئيسية نائلة العقل على الرقم 01/350000 مقسم : 4457 أو على البريد الإلكتروني: na143@aub.edu.lb

APPENDIX 3

CONSENT FORM- ENGLISH VERSION

American University of Beirut

Landscape Design & Ecosystem Management

Nayla Al-Akl (PI)

Thuraya Abu Merhi (Graduate Student I)

Oral Consent

Title: Experiencing wellbeing in the streets of Beirut: To what extent does urban vegetation play a role in people's lives?

Hello, I am a graduate student in the Department of Landscape Design & Ecosystem Management in the Faculty of Agricultural and Food Sciences at American University of Beirut. I would like to invite you to participate in a research study about identifying the potential streetscape features or characteristics that could promote wellbeing and specifically examining the role of urban vegetation by investigating people's perception and preference.

Before we begin, I would like to take a minute to explain why I am inviting you to participate and what I will be doing with the information you provide. Please stop me at any time if you have any questions. After I've told you a bit more about the study, you can decide whether or not you would like to participate.

What is this research study about?

The aim of this research is to study the extent of urban vegetation's role in people's lives. By investigating people's perception and preference in a holistic approach, streetscape features that potentially contribute to a restorative urban experience will be identified and role of urban vegetation in people's lives will be closely assessed.

You will be asked to choose your favorite street in your neighborhood and walk along it. What we mean by your favorite street is a street that you enjoy walking along it and makes you feel good, comfortable and happy. You will be asked to answer some questions along the walk of what you are seeing and feeling to gain more detailed and reactive insight. This will be done by asking you semi-structured questions to understand your restorative urban experience and what street features affect this experience. The go-along interview will take place along your favorite street of your choice. It is expected to take about 45 minutes. As part of data collection, I will be asking 30 users of active streets in the selected areas. They may include residents, shop owners, shop employees, citizens walking or using facilities along the street. The sample could be balanced in terms of gender and will include participants ranging in age from early- twenties to early seventies,

regardless of race, religion and socio-economic status. Participants below 18 years old will not be included in this study.

Risks & Benefits:

Your participation in this study does not involve any physical or emotional risk to you beyond the risks of daily life. If at any time and for any reason, you would prefer not to answer any questions, please feel free not to. If you do not wish to answer any particular question in the interview, you may skip the question by either not answering or saying “skip” during the interview.

If at any time you would like to stop participating, please tell me. We can take a break, stop and continue at a later date, or stop altogether. You will not be penalized in any way for deciding to stop participation at any time. You have the right to refuse to participate, withdraw your consent, or discontinue participation at any time during or after the interview and for any reason. Your decision to withdraw will not involve any penalty or loss of benefits to which you are entitled. Discontinuing participation in no way will affect your relationship with the American University of Beirut.

The foreseeable risks to you here are minimal. There will not be any form of coercion or incentives. There are no direct benefits for participating in this research. I am doing this study as part of my studies at AUB. I will be using the information as the basis for my thesis. I may also use this information in articles that might be published, as well as in academic presentations. You may be helping others to better understand the potential benefits which may reasonably be expected to result from this study. This research can serve as an important layer of information can be gained for further design research to be used by professionals and even by other students in their projects.

Participation is on a purely voluntary basis. You will be asked to answer few semi-structured questions. They will be concise and will not cause any harm or discomfort. Your participation might be terminated by the investigator if deemed necessary. This happen in rare circumstances where participants may not be maintaining integrity of the data (i.e. deliberately providing false information).

Privacy & Confidentiality:

All data collected are treated as confidential information. Your individual privacy and confidentiality of the information you provide will be maintained during the data collection process and in all published and written data analysis resulting from the study. Your identity will not be disclosed, and you will be given the choice to participate or decline participation voluntarily. You will be provided with this oral consent and will give you a copy of the written script of the oral consent form to keep and refer to as information about the study and your rights, and to provide you with the contact information of the research team and IRB.

I would like to audio record this interview using a cellphone so as to make sure that I remember accurately all the information you provide. I would like to video record this interview for couple of minutes only so I can remember better your urban experience and have a vivid visual of your participation. The video will not include you or other people

on the street; it will only include visuals of the street, features, sites etc. All study recordings (audio or video recordings) will be recorded via a password protected phone, and that the recordings will be immediately deleted once transcribed. Also, all recordings will be kept on a password protected laptop in a protected folder with only access granted to the principle investigators. If you refuse to be audio-recorded, handwritten notes will be taken instead. These notes will be a combination of on-spot written hand notes during the go-along and field reflexive observation after the go-along is conducted. Only the aggregated data from the interviews (which will have no identifiers) will be shared with other investigators. All codes and transcribed data will be kept in the locked file drawer or in a double password protected computer that is kept secure.

I may wish to quote from this interview either in the presentations or articles resulting from this work. I may wish to take some pictures along the way for places of your interest that may include any sites/landscape features. These pictures will not include you nor other people.

Again, your privacy will be maintained in all published and written data resulting from this study. Your name or other identifying information will not be used in our reports or published papers. A made-up name will be used in order to protect your identity, unless you specifically request that you be identified by your true name. You may still participate in the interview if you do not want to be recorded.

Three years after the end of the research study, the recordings and any study data will be destroyed by the research team using mean approved by the institution. I will keep the aggregated research data on my computer files for future use in other prenatal research studies.

Data access is limited to the Principal Investigator and researchers working directly on this study. It will also be monitored and may be audited by the IRB while assuring confidentiality.

Contact Information:

If you have any questions, you are free to ask them now.

If you have questions, concerns or complaints about this research study later, you may contact me, the student investigator, at the below information:

- Email: tka10@mail.aub.edu
- Telephone number: 70/802520

If you have questions, concerns or complaints about this research study later, you may also contact Dr. Nayla Al-Akl, the principal investigator, at the below information:

- Email: na143@aub.edu.lb
- Telephone: 00961 -1-350000 ext. 4457

If you are not satisfied with how this study is being conducted, or if you have any concerns, complaints, or general questions about research or your rights as a participant, please contact the AUB Social & Behavioral Sciences Institutional Review Board (SBSIRB) at AUB:

- PO BOX: 11-0236 F15, Address: Riad El Solh, Beirut 1107 2020, Lebanon
- Email: irb@aub.edu.lb.
- Telephone: 00961 -1-350000 or 1 374374, ext. 5445

Participant's Participation

Are you interested in participating in this study?

Consent to Record Interview

(Question should be posed before any recording begins)

May I audio record this interview?

May I video record this interview for couple of minutes?

Consent to Quote from Interview

I may wish to quote from this interview either in the presentations or articles resulting from this work. A pseudonym will be used in order to protect your identity, unless you specifically request that you be identified by your true name.

Do you allow me to quote from this interview?

Consent to take photographs

May I take photographs along the walk?

CONSENT FORM- ARABIC VERSION

استمارة الموافقة على المشاركة في دراسة بحثية

الجامعة الأميركية في بيروت

قسم تصميم المساحات الخضراء

العنوان: " الراحة في شوارع بيروت: الى أي مدى يلعب الخضار دورا في حياة الناس "

[المشرف على البحث: نائلة العقل]

[طالب باحث: ثريا أبو مرعي]

أنا طالبة باحثة في الدراسات العليا في قسم تصميم المناظر الطبيعية وإدارة النظم البيئية في الجامعة الأميركية في بيروت. أود أن أدعوك للمشاركة في دراسة بحثية تحت عنوان : " الراحة في شوارع بيروت: الى أي مدى يلعب الخضار دورا في حياة الناس."

سأشرح لك في البداية عن سبب دعوتي لك للمشاركة في هذه المقابلة وما سأفعله بالمعلومات التي ستوفرها لي. الرجاء مقاطعتي في أي وقت إن كانت لديك أي أسئلة كما يمكنك أن تختار المشاركة أو عدم المشاركة في المقابلة بعد أن أبدأ بعرض الموضوع بشكل مفصل.

الغاية من الدراسة البحثية:

تهدف هذه الدراسة البحثية الى فهم مدى تأثير الخصائص المتواجدة في شوارع بيروت على راحة وسعادة الناس, وبشكل خاص الدور الذي يلعبه الخضار المتواجد في شوارعنا, من خلال معرفة آراء سكان المدينة حول هذا الموضوع .

سيتم اختيارك للمشاركة في مقابلة أثناء سيرك في شارعك المفضل التي تختاره . إن كنت ترغب بالمشاركة، سيطلب منك الإجابة على مجموعة من الأسئلة لمعرفة ما تراه وتشعر به, من أجل الحصول على معلومات مفصلة وتفاعلية بغية فهم تجربتك المدنية ومدى تأثير مميزات الشوارع , وبشكل خاص الخضار, على سعادتك وراحتك. من المتوقع أن تستغرق المقابلة حوالي 45 دقيقة.

سيتم اختيار حوالي 30 شخص من المقيمين ، العاملين ، أصحاب المحال التجارية أو حتى من المارة في أحياء محددة في بيروت، من خلال سؤالهم مباشرة عن رغبتهم بالمشاركة في هذه الدراسة. تستثني الدراسة من تقل أعمارهم عن 18 عاماً.

المخاطر/الفوائد المرتبطة بالمشاركة:

لا تعرّضك مشاركتك في هذه الدراسة لأي خطر جسدي أو معنوي أبعد من مخاطر الحياة اليومية العادية. تجدر الإشارة إلى أنه إن كنت تفضل في أيّ وقت أو لأيّ سبب عدم الإجابة على أيّ سؤال، لديك كامل الحرية في ذلك. أما إن كنت ترغب عدم الإجابة على سؤال محدّد في المقابلة، فيمكنك تجاوز السؤال إما من خلال عدم الإجابة أو قول كلمة "تجاوز" خلال المقابلة.

إن كنت ترغب التوقف عن المشاركة في أيّ وقت، الرجاء إعلامي بذلك، فيمكننا حينئذٍ أن نأخذ استراحة ونتوقف ثم نكمل المقابلة في يومٍ آخر، أو يمكنك أن تلغي مشاركتك نهائياً فيها. لن يترتب عن قرارك بالتوقف عن المشاركة في أيّ طريقة وفي أيّ وقت في هذه المقابلة أيّ إجراءات أو عقوبات، فلديك كامل الحقّ في رفض المشاركة أو سحب موافقتك أو التوقف عن المشاركة في أيّ وقت أثناء المقابلة أو بعدها، ولأيّ سبب كان. لن يتأتى عن قرارك بالانسحاب أيّ عقوبة أو خسارة للفوائد التي تستحقها، ولن يؤثر توقفك عن المشاركة في المقابلة بأيّ شكل من الأشكال على علاقتك بالجامعة الأميركية في بيروت.

لن تحصل على أيّ فوائد مباشرة من مشاركتك في هذه الدراسة البحثية، إلا أنّ مشاركتك قد تساعد الباحثين على معرفة دور الخضار في حياة الناس. سيتم استعمال هذه المعلومات في الأطروحة، كما في مقالات قد يتم نشرها .

إنّ مشاركتك في هذه المقابلة هي صرف طوعية. سيُطلب منك الإجابة على بعض الأسئلة الموجزة أثناء سيرك ولن تسبب لك أيّ أذى أو انزعاج. قد ينهي الباحث مشاركتك إن رأى ذلك ضرورياً. قد يحدث ذلك نادراً عندما لا يحافظ المشارك على سلامة/نزاهة البيانات (أي تزويد الباحث عمداً بمعلومات خاطئة).

السرية وخصوصية المشارك:

سوف يتم التعامل مع كافة المعلومات المجمعة بسرية مطلقة أثناء جمع البيانات. لن أضع في تحليلي البحثي اسمك أو أي معلومات من شأنها أن تفصح عن هويتك بدون موافقتك. يمكنك الاحتفاظ بنسخة عن استمارة الموافقة الراهنة والإشارة إليها كمعلومات حول الدراسة وحقوقك، ولتزويدك بمعلومات الاتصال الخاصة بفريق البحث ومكتب مجلس المراجعة المؤسسي في قسم العلوم الاجتماعية والسلوكية في الجامعة الأميركية في بيروت.

أودّ تسجيل المقابلة حتى أحفظ بدقة كافة المعلومات التي تدلي بها و أودّ تسجيل الفيديو لبضع دقائق فقط حتى أتمكن من تذكر تجربتك بشكل أفضل. سيتم تصوير مشاهد من الشارع فقط. سيتم حفظ جميع تسجيلات الدراسة (تسجيلات صوتية أو فيديو) عبر هاتف محمي بكلمة مرور، وسيتم حذف التسجيلات فور نسخها. سأحتفظ بهذه التسجيلات في كمبيوتر محمي آمن يتضمن كلمتي سرّ. سأحتفظ بالبيانات المجمعة في درج مقفل خاص بالملفات في مكتب الباحث الرئيسي ولن يستخدمها سوى الفريق البحثي. إن رفضت تسجيل إجاباتك، سنعمد تدوين خطي سريع للملاحظات أثناء المقابلة و التوسع في هذه الملاحظات بعد إجراء المقابلة. لن نشارك مع باحثين آخرين إلا البيانات المجمعة من المقابلات (التي لن تتضمن أيّ معلومات من شأنها أن تفصح عن هويتك الشخصية) وسيتمّ الاحتفاظ بكافة الرموز والبيانات المسجلة في درج ملفات مقفل أو في كمبيوتر محمي آمن يتضمن كلمتي سرّ. كما يجوز أن أستشهد ببعض كلماتك في عروضي أو تقاريري الناتجة عن هذا العمل مع الحفاظ على خصوصيتك في البيانات المنشورة والمكتوبة الناتجة عن هذه الدراسة. من الجدير بالذكر أنّ المقابلة سرية، ولن يتمّ الإشارة إلى أيّ معلومات من شأنها أن تفصح عن هويتك الشخصية في تقاريرنا أو أبحاثنا المنشورة. سوف نستخدم اسمًا وهميًا فيها لحماية هويتك إلا في حال طلبت ذكر اسمك الحقيقي شخصيًا. يحقّ لك المشاركة في المقابلة حتى لو لم ترغب بتسجيل أجوبتك. سيتم تصوير أيّ معالم تشير إليها أثناء المقابلة.

سيتم تلف المقابلات المسجلة والصور بعد ثلاث سنوات من انتهاء الدراسة البحثية من قبل الفريق البحثي باستخدام وسائل توافق عليها المؤسسة.

سوف تكون المعارف التي يتمّ اكتسابها من خلال هذه الدراسة البحثية محصورة بالباحث الرئيسي والباحثين العاملين مباشرة في هذه الدراسة، كما سيتم مراقبتها والتدقيق بها من قبل مجلس المراجعة المؤسسي مع الحفاظ على السرية التامة.

معلومات الاتصال

- إذا كان لديكم أية أسئلة، يرجى التواصل مع الطالبة الباحثة ثريا أبو مرعي على الرقم 70/802520 أو على البريد الإلكتروني: tka10@mail.aub.edu .

-إذا كان لديكم أية أسئلة، يرجى التواصل مع المشرف على البحث، الأستاذة نائلة العقل، على هذا الرقم 01/350000 تحويلة 4457 أو على بريدها الإلكتروني na143@aub.edu.lb

- إذا كان لديكم أية إستفسارات أو أي شكاوى أخرى حول البحث، يمكنكم الاتصال بالمكتب التالي:

العلوم الاجتماعية والسلوكية مجلس المراجعة، الجامعة الاميركية في بيروت، لبنان
الهاتف: 01/350000 مقسم: 5445 أو 5455
البريد الإلكتروني: irb@aub.edu.lb

هل لديك أي أسئلة حول المعلومات المذكورة أعلاه؟

المشاركة في هذه الدراسة:

هل أنت مهتم بالمشاركة في هذه الدراسة البحثية؟

الموافقة على تسجيل مقابلة:

(يجب طرح السؤال قبل بدء أي تسجيل)

هل توافق على تسجيل الصوت في المقابلة؟

هل توافق على تسجيل فيديو لهذه المقابلة لبضع دقائق؟

الموافقة على الاقتباس من المقابلة:

هل توافق على اقتباسي باستخدام اسم مستعار لحماية هويتك؟

الموافقة على التقاط الصور:

هل يمكنني التقاط صور؟

APPENDIX 4

UNSTRUCTURED 'GO-ALONG' INTERVIEWS- ENGLISH VERSION

American University of Beirut

Landscape Design & Ecosystem Management

Nayla Al-Akl (PI)

Thuraya Abu Merhi (Graduate Student I)

Study Guidance

1. Recruitment steps:

- Potential participants were approached with an invitation script.
- An oral consent was obtained for approval to participate in the study.
- Once oral consent was obtained, warm- up questions were asked focusing on participant's background and how often he/she had used the selected street.
- Go- along interview was conducted after providing the study guidance. That also included unstructured interview questions coupled with probing questions.

Detailed recruitment steps:

Recruitment started as soon as the official approvals had been secured from (1) International Review Board (IRB) for ethical study revision and (2) Dean's Office of Student Affairs for my off-AUB campus involvement, between February 2020 and March 2020.

Since I was interested in the users' perception of active streets in specific neighborhood, people living or working in this area and willing to participate in the study were recruited. I had identified the potential participants from purposive sampling and approached them individually using an invitation script.

An oral consent was obtained prior to their participation where participants were debriefed about the study and asked them whether they were interested in participating. They were asked if the interview could be audio recorded for better demonstration of the exact local urban overall experience feeding our objectives. They were also asked if I could take a short video recording during our walk; I explained that this video record would only include visuals of the streets itself or street features or sites for better understanding of their urban experience. The video recording would not include the participants or other people. all study recordings (audio or video recordings) were recorded via a password protected phone, and the recordings were immediately deleted once transcribed. If the participants refused to be audio or video recorded,

handwritten notes were taken instead. These notes were a combination of on-spot written hand notes during the go-along and field reflexive observation/ notes after the go-along was being conducted. Moreover, participants were consented if I could take photographs along the way for places of their interest that might include any sites/landscape features that had identified as promoting wellbeing. Similar to the short videos taken, the photographs didn't include the participants or other people. All whole recruitment process and go-along interview was done using my native language, Arabic.

The participants were given a copy of the written script of the oral consent to keep and refer to as information about the study and their rights, and to provide them with the contact information of the research team and IRB. This oral consent script included an invitation to participate in the study; it contained an explanation why for their invitation, details of what was asked of them to do, details about ensuring their privacy and confidentiality of the information, details about the voluntary nature of their participation. Also, the oral consent script included information about the ability to discontinue participation or skip of inappropriate or sensitive questions or even voluntary option to video/audio record the interview and quote from the interview as well as take pictures along the walk for significant features in the street they may bring up along the walk.

The participants who accepted to participate in the study were asked to choose a street that made them feel the most comfortable, happy and relaxed in their neighborhood. They chose the day and time based on their availability.

After obtaining oral consent:

Inspired from Bergeron's study (2014), all participants were informed about the procedures of the activity; all participants were met individually and provided with the following guidance:

“Take me to the street that makes you feel good in this area... Take me to a street that you like to walk along it and makes you happy and relaxed. However, you are free to explore other places or other streets. Please take your time, you can walk, stop, sit down, and talk with other users if you feel like it; Point to your favorite places or features; relax and let yourself go. Please allow yourself to interact with the environment; You are free to talk about everything, including: your memories, thoughts, feelings, sensations, preferences, emotions, the physical (or other) characteristics of the street. I will be asking you unstructured questions just to gain more insight about your walking experience. Please if you have any questions before we start, ask me directly.”

During the walk, unstructured questions were asked relating to the participants' streetscape perceptions or preferences as well as their overall urban experience. The questions were derived from literature investigating what features contributed to general qualities of wellbeing in an urban setting; this assisted me in analyzing the collected data.

2. Warming- up questions:

- How long have you been living/ working here?
- How often do you use this street?

3. Along the walk: Unstructured questions:

Unstructured questions were used along the go-along interview. These questions began with broad open-ended questions related to the participants' background and local urban

experiences such as “ tell me about...” or “what is your experience of...” (Sparkes & Smith, 2013).

- Tell me about what do you like or what attracts your attention in this street?
- Tell me why would you take this street to relieve your stress and relax/ feel good / happy?
- What do you think are the missing features that make you happy in this street?
- Describe other streets that generally make you happy and relaxed?

4. Examples of Probe questions that will be used:

- The “Tell me more about that” probe
- The "it sounds like you were saying" probe
- The "how so?" probe
- The "why is that important?" probe
- The "could you give me an example?" probe
- The "tell me about the last time you did that" probe

UNSTRUCTURED 'GO-ALONG' INTERVIEWS- ARABIC

VERSION

الجامعة الأميركية في بيروت

قسم تصميم المساحات الخضراء

[المشرف على البحث: نائلة العقل]

[طالب باحث: ثريا أبو مرعي]

دليل الدراسة

بعد الحصول على الموافقة:

اصطحبني إلى شارعك المفضل في هذه المنطقة ... خذني إلى شارع تحب المشي فيه ويجعلك سعيدًا ومرتاحًا. سوف تكون "الدليل السياحي" في هذا الشارع. أنت حر في استكشاف أماكن أو شوارع أخرى. الرجاء أخذ وقتك، يمكنك المشي، التوقف، الجلوس والتحدث مع المارة الآخرين إذا كنت ترغب بذلك. الرجاء خذ راحتك بالتفاعل مع البيئة. لديك الحرية في التحدث عن أي شيء، بما في ذلك: ذكرياتك، أفكارك، مشاعرك، أحاسيسك، أمورك المفضلة، عواطفك والخصائص الحسية (أو غيرها) للشارع. سأطرح عليك بعض الأسئلة فقط لاكتساب المزيد من المعرفة حول تجربة المشي الخاصة بك. من فضلك إذا كان لديك أي أسئلة قبل أن نبدأ، اسألني مباشرة.

أسئلة الاحماء:

- منذ متى تعيش أو تعمل هنا؟
- أخبرني قليلاً كم مرة تنتقل في هذا الشارع؟

أسئلة المقابلة: (خلال المقابلة)

- أخبرني ما الذي يعجبك أو يجذب انتباهك في هذا الشارع؟

- أخبرني لماذا تعتبر هذا الشارع يخفف التوتر أو يزيد شعور الراحة والسعادة؟

- ما هي الميزات الناقصة التي تجعلك سعيدا في هذا الشارع؟

- صف الشوارع الأخرى التي تجعلك تشعر بالسعادة والاسترخاء؟

أمثلة على أسئلة التحقيق التي سيتم استخدامها:

- "أخبرني المزيد عن ذلك"

- "يبدو كما لو كنت تقول"

- "كيف ذلك؟"

- "لماذا هذا مهم؟"

- "هل يمكن أن تعطيني مثلا؟"

- "أخبرني عن آخر مرة قمت فيها بذلك"

APPENDIX 5

DESCRIPTION OF THE PHASES OF THEMATIC ANALYSIS (BRAUN & CLARKE, 2010)

Phase	Description of the process
1. Familiarizing yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes:	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme. The final opportunity for analysis.
6. Producing the report:	Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

APPENDIX 6

A 15-POINT CHECKLIST OF CRITERIA FOR GOOD THEMATIC ANALYSIS

Process	Criteria
Transcription	<ol style="list-style-type: none"> 1. The data have been transcribed to an appropriate level of detail, and the transcripts have been checked against the tapes for ‘accuracy’.
Coding	<ol style="list-style-type: none"> 2. Each data item has been given equal attention in the coding process. 3. Themes have not been generated from a few vivid examples (an anecdotal approach), but instead the coding process has been thorough, inclusive and comprehensive. 4. All relevant extracts for all each theme have been collated. 5. Themes have been checked against each other and back to the original data set. 6. Themes are internally coherent, consistent, and distinctive.
Analysis	<ol style="list-style-type: none"> 7. Data have been analyzed – interpreted, made sense of- rather just paraphrased or described. 8. Analysis and data match each other – the extracts illustrate the analytic claims. 9. Analysis tells a convincing and well-organized story about the data and topic. 10. A good balance between analytic narrative and illustrative extracts is provided.
Overall	<ol style="list-style-type: none"> 11. Enough time has been allocated to complete all phases of the analysis adequately, without rushing a phase or giving it a once-over-lightly.
Written Report	<ol style="list-style-type: none"> 12. The assumptions about, and specific approach to, thematic analysis is clearly explicated. 13. There is a good fit between what you claim you do, and what you show you have done i.e., described method and reported analysis are consistent 14. The language and concepts used in the report are consistent with the epistemological position of the analysis. ^[1]_[5EP] 15. The researcher is positioned as active in the research process; themes do not just ‘emerge’.

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