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About the Journal

Journal Of Contemporary Urban Affairs is the interdisciplinary academic, refereed journal which publishes two times a year by Alanya Hamdullah Emin Pasa University. *Journal of Contemporary Urban Affairs* brings together all the theories, manifestoes and methodologies on contemporary urban spaces to raise the understanding for the future of urban planning. Overall, the journal of contemporary urban affairs aimed to establish a bridge between theory and practice in built environment. Thus, it reports on the latest research findings and innovative approaches, methodologies for creating, assessing, and understanding of contemporary built environments.

Journal of Contemporary Urban Affairs distinguishes itself by providing an international and interdisciplinary platform for the exchange of ideas and information among Architectures, urban planners, policy makers and urbanists from all disciplines to focus on seven main concern of this journal which are Housing studies, Emerging cities, urban ecology, Infra Habitation, Revitalization strategies, conflict, divided territories and overall contemporary urban issues about mentioned concerns. Submissions of empirical, comparative, theoretical research, critical review and manifestoes for the future of cities from different scholarly disciplines and methodological perspectives are encouraged.

Coverages

The journal explores a range of academic and policy concerns including, but not limited to:

- Conflict and divided territories.
- Emerging cities.
- Urban ecology, morphology and growing *concern on sustainability*.
- Infra Habitation (Slums / Affordable houses and Gated communities).
- Revitalization, regeneration and urban renewal.
- Housing studies (livability, responsive environment, quality of life and etc.)
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The Editor assigns Reviewers to the manuscript.
The Reviewers review the manuscript.
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EDITORIAL

Journal of Contemporary Urban Affairs is an open access international peer-reviewed journal that provides a platform aiming to bring together current manifestoes and methodologies on urban affairs to raise the understanding for the future of urban planning within some specific subject fields which are: Housing Studies, Emerging Cities, Urban Ecology, Infra Habitation, Revitalization Strategies, Conflict, Divided Territories and contemporary urban issues about above mentioned subject fields. Thus, it reports on the latest research findings and innovative approaches, methodologies for creating, assessing, and understanding contemporary built environments.

Editorial Board strives to provide a possibility for the scientists of different fields to publish the results of their research, technical and theoretical studies. *Journal of Contemporary Urban Affairs* is multidisciplinary in approach, and will publish a great range of papers: reports of qualitative case studies, quantitative experiments and surveys, mixed method studies, action researches, meta-analyses, discussions of conceptual and methodological issues.

A broad outline of the journal's scope includes peer-reviewed original research articles, case and technical reports, reviews, short communications and notes to the editor. All scholars, practitioners, professionals, researchers and policy makers with a common interest to study in the field of architecture and urban design from different disciplines, such as Art, Architecture, Landscape, Urban Planning and Urban Design are welcome to share their research findings. The journal only publishes research of the highest quality and impact. All articles are published in English and undergo a peer-review process.

The journal explores a range of academic and policy concerns including, but not limited to:
- Conflict and divided territories.
- Emerging cities.
- Urban ecology, morphology and growing concern on sustainability.
- Infra habitation (slums / affordable houses and gated communities)
- Revitalization, regeneration and urban renewal.
- Housing studies (livability, responsive environment, quality of life and etc.,).
- Contemporary urban issues (politics, strategies, sociology, crime, immigration and international labor migration, new urbanism, rapid urbanization, urban sprawl).

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Journal of Contemporary Urban Affairs has an international editorial board of eminent experts in their field from Turkey, USA, UK, Germany, India, Canada, New Zealand, Cyprus, Egypt, Malesia, Lebanon, Switzerland and Pakistan . We are confident that JCUA will attract a great number of editors, eminent scientists in the field. The selection will be based on the activities of the editors and their desire to contribute to the development of the journal. *Journal of Contemporary Urban Affairs* provides a platform for academics and scientists professionals to refer and discuss recent progress in the fields of their interests. Authors are encouraged to contribute articles which are not published or not under review in any other journal. Each submitted manuscript is evaluated based on the originality of its contribution to the field of scholarly publishing, the soundness of its theory and methodology, the coherence of its analysis and its availability to readers (grammar and style). Normal turn-around time for the evaluation of manuscripts is one to two months from the date of receipt.

Submission of an original manuscript to the journal will be taken to mean that it represents original work not previously published, that is not being considered elsewhere for publication; that the author is willing to assign the copyright to the journal as per a contract that will be sent to the author just prior to the publication and, if accepted, it will be published in print and online and it will not be published elsewhere in the same form, for commercial purposes, in any language, without the consent of the publisher. The names and email addresses entered in this journal site will be used exclusively for the stated purposes of this journal and will not be made available for any other purpose or to any other party. The requirement for the submission of a paper implies that it has not been published before; that it is not under consideration for publication anywhere else.

When considering submitting an article, the Editors have provided the following criteria to assist authors with preparing their submissions:

Originality – The author should ensure that the manuscript has not been previously published nor is being considered by another journal.
Plagiarism - All articles are test ted with iThenticate software. Content should be properly referenced. Be sure to check the paper for possible accidental plagiarism. Some plagiarism checker websites include: http://www.ithenticate.com/, www.antiplagiat.ru, www.grammarly.com, www.plagtracker.com or www.duplichecker.com
Writing – Please write in good English (American or British usage is accepted, but not a mixture of these). For non-native English speakers, and perhaps even for some native English speakers, grammar, spelling, usage, and punctuation of the texts are very important for an effective presentation. Hence, manuscripts are expected to be written in a clear, cogent, and readily understandable by an international readership.
Manuscripts must be submitted online. Electronic submission reduces the editorial processing and reviewing time. As part of the submission process, authors are required to check off their submission compliance with all of the following items, and submissions may be returned to authors who do not adhere to the following guidelines:

-The submission has not been previously published or presented to another journal for consideration (or an explanation has been provided in Comments to the Editor).
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-Where available, URLs for the references have been provided.
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The text is single-spaced; uses a 12-point font; employs italics, rather than underlining (except with URL addresses); and all illustrations, figures, and tables are placed within the text at the appropriate points, rather than at the end. The text adheres to the stylistic and bibliographic requirements outlined in the Author Guidelines. If submitting to a peer-reviewed section of the journal, the instructions in *Ensuring a Blind Review* have been followed.
A manuscript goes through the peer review process. Authors submit manuscripts to Editorial office via the online system. The acknowledgement letter should be sent to the author to confirm the receipt of the manuscript. The Chief Editor first reviews manuscripts. Chief Editor is assisted by Section Editors (could also be Co- or Associated Editors). The Editor assigns a Section Editor to see the manuscript through the complete review process and return it with a recommendation or decision. The manuscript is checked to see if it meets the scope of the Journal and its formal requirements. If it is incorrect or unsuitable, the author should be informed and the manuscript filed (or returned if requested) – direct rejection. Manuscripts that are not suitable for publication in the Journal are rejected. A Rejection letter is sent to the author stating the reason for rejection. If the manuscript conforms to the aims and scope of the Journal, and formally abides by the Instructions to Authors it is sent out for review. Depending on the type of paper, it could be accepted immediately for publication (invited Editorial, Book review etc) by the Chief Editor. Check that the manuscript has been written and styled in accordance with the Journal style; that it carries an abstract (if applicable), keywords, correct reference system etc. and check that the correct blinding system has been used. If anything is missing, the Editor in Chief of associate editor will ask from the authors to complete it before the manuscript is sent out for review. The manuscript is sent out for review. The reviewer reads and evaluates the manuscript and eventually sends a review report to the Chief Editor. The time for review can be set to 2-6 weeks depending on the discipline (more time is usually given to papers in the humanities and social sciences). Make sure to provide the reviewer with clear instructions for the work, e.g. outlined in the form of a Review report or a number of questions to be considered. Based on the reviewers' comments the Chief Editor makes a decision to:
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This special issue on educational pursuits and experiences has 5 articles. The editors seek to publish articles considering contemporary urban affairs in the specific field of: Housing Studies, Emerging Cities, Urban Ecology, Infra Habitation, Revitalization Strategies, Conflict, Divided Territories; they are looking forward to substantial improvement of educational processes and outcomes.

With kind regards,
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City, Urban Transformation and the Right to the City

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ABSTRACT

This article investigates the relationship between transformation of cities and the right to the city. To be able to do this, the problems that are created by contemporary urbanization such as social exclusion, poverty and environmental degradation are discussed in the first part. After that, with a special focus on the period starting with industrial revolution up until today, the article explains economic and political motivations behind urban transformation. This part emphasizes how urban change under different forms of capitalism creates and deepens social inequalities in cities. Final part of this article will be a discussion on the right to the city, and its relation to these urban issues.

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1. Introduction

We are living in an age of planetary urbanization (Brenner and Schmid, 2011), and some of the problems that today's cities encounter are unprecedented in history of urbanization. According to Brenner and Schmid, what we understood as city and urban has shifted in scale and function within the last 30 years. New mega-urban regions in several parts of the world started to emerge, swallowing their peripheries, rearticulating both geographically and functionally what used to be former city centers and hinterlands and eradicating nature and wildlife (Brenner and Schmid, 2011). The number of megacities with a population of ten million or more inhabitants has shifted from 10 to 28 between the years 1990 and 2014, and it is expected to rise up to 41 in 2030 (United Nations, Department of Economic and Social Affairs, Population Division, 2015). According to the World Urbanization Prospects report of United Nations, one of the most important problems of this fast urban growth and expansion is the increase in world urban population. The percentage of the world's population living in urban areas increased from 30% in 1950s to 54% in 2014. The same report predicts that the world urban population will rise up to 66% of the whole world population by 2050 (United Nations, Department of Economic and Social Affairs, Population Division, 2015). Increase in urban population also means a decrease in rural population, which also means less people to work in small agriculture farms. Consequently to

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be able to feed the growing urban population of the world, larger scale and more industrialized agriculture practices are being applied which result in environmental degradation such as deforestation, degeneration of ecosystems, loss of soil and the production of corps with reduced nutrition values. All these environmental distortions cause social consequences such as unemployment, poverty, and hunger.

As world cities grow and expand as social, cultural and economic attraction centers for millions of people, they also grow as centers of social exclusion, unemployment and urban poverty, privatization and commodification of urban land and housing. The consequences of these problems are especially visible in informal living areas, such as squatter settlements, favelas or slums. It is estimated that one third of world population is living in slum areas located in geographically dangerous zones, surrounded with landfills, without access to clean water and sewerage system, such as Kibera (Nairobi, Kenya), Rocinha (Rio De Janerio, Brazil), and Dharavi (Mumbai, India) (UN – HABITAT, 2003).

In addition to economic and social problems, the overgrowth of cities also brings environmental challenges. Starting from the middle of the 20th century, global warming and consequently climate change has been one of the key factors affecting, and actually threatening ecosystems and human habitats. One of the primary reasons of global warming is considered to be greenhouse gas emissions due to human activities (IPCC, 2014). Big cities, with their crowded populations, are places of concentration of these activities and accordingly they are areas where food, water, energy and all kinds of products are being consumed the most.

Cities are becoming heat islands as a result of energy consumption needed for production of electricity, transportation, heating and cooling (Torrey, 2004). Contribution of cities in environmental pollution, global warming and climate change is increased due to:

- greenhouse gas emissions owing to overconsumption of natural resources;
- growing landfills as a result of waste arising from consumption of goods in cities;
- erosion of wildlife and natural areas surrounding these cities

In the following part, this paper will provide a historical analysis regarding today's urban conditions with a focus on the period starting with the industrial revolution, and try to answer following questions:

- why and how cities grow?
- what are the economic and political motivations behind their transformations?
- what are the socio-spatial results of these changes? And how is the idea of the right to the city related to these changes?

Cities in Transformation: Growth Based on Inequality

As dynamic structures cities both create and emerge from physical, social, environmental and economic phenomena (Roberts, 2003) and they are in a constant process of transformation due to the rapid change of these processes. Throughout history, they have been the areas where different people lived together for economic, social and cultural production and exchange, and their physical spaces had been shaped as the embodiment of these social organizations (Thorns, 2004).

In his seminal book "The Production of Space", Henri Lefebvre states that every social organization forms specific physical spaces in consequence of social relationships; therefore, these social organizations also reproduce themselves within those physical spaces (Lefèbvre, 1996). At this point, Lefebvre presents the difference between social and abstract space: the social space is where the daily life experiences of each member of the society occurs. On the contrary, the abstract space is the hierarchical space of politicians, capitalists and planners trying to control the social space of daily life. It is torn down, homogenized and commodified by the power, authority and capital (Gottdiener, 1993). By associating the production of abstract space with the emergence of the capitalist system, Lefebvre has brought forward the transformation of "use value" arising from the occurrence of daily lives of people in social space, into "exchange value" for politicians, planners and investors approaching the space as a good that can be traded and shaped according to the market dynamics (Lefèbvre, 1996).

In today's cities, the contradiction between use value and exchange value have become even more explicit. Today, main driving force behind many urban design and development projects is to attract the global capital, finance and international professional elite to cities, a target

set by neo-liberal economy policies. Projects of luxurious residential buildings, gated communities, shopping and retail centers are realized through privatization and commodification of urban environments from land to water, from nature to history. As a result of this economic system and urbanization approach, more people are becoming impoverished and dispossessed, and forced to live under condition of poverty, without access to proper housing, infrastructure and public services. The environmental and social cost of this transformation is paid off by the impoverished and the dispossessed.

These physical divisions and social polarizations undermine the culture of living together and boost xenophobia and racism. Identity problems and ethnic, cultural and religious divisions make cities spaces of conflict and consequently cities lose their characteristics of being places of co-existence and mutual-exchange.

In the late 18th and early 19th centuries, the rapid industrialization process causing several irreversible changes notably in Europe came with spatial impositions and accelerated the transformation of use value of space into exchange value. As a consequence of transition from the rural production into a new production system which started to be performed in cities principally with the factory system, the population has started to be densified in cities rather than rural areas and cities have become the centres of capitalist production. Hobsbawm defines this new type of society and production as "industrial capitalism based on factory" (Hobsbawm, 1998).

The fast industrializing cities of that period were facing pollution problems arising from the rapid population growth, industrial production, unplanned developments and poor dwelling conditions. Narrow streets which did not allow sunrise reach to buildings, houses with no toilet or sewerage and lack of access to clean water in daily life due to usage of water in the industry turned industrial cities into unhealthy living environments where diseases could easily spread (Lampugnani, 1985).

Expressing his observations regarding the great industrial towns of England, Friedrich Engels writes the inhumane conditions working classes experienced during this period in his book entitled "The Condition of the Working Class in England" (1844). According to Engels, the new configuration of the city is a physical reflection of distinction between classes being the most distinctive characteristic of capitalism. While talking about his observations on Manchester city, Engels describes the contrast between the factories and commercial zones located in the city centre surrounded by workers' housings in unhealthy conditions and the clean and organized upper/middle class dwelling zones, and suggests that this contrast originates from the exploitation of working classes by the upper classes (Thorns, 2004).

Pressures on the urban spaces arising from the new technical improvements and health conditions led the foundations of the urban planning to be laid especially between 1830 and 1850. It can be observed that during this period, health legislations and urban reforms came into operation in several industrial cities of Europe (Benevolo, 1977). In 1848, regulations for enhancing the living conditions of the working class were put into practice with the emergence of the first "Public Health Act" in England. In 1850-1863, new housings for workers started to be constructed outside of the city centres in Europe and America under the name of company towns (Lampugnani, 1985). Lampugnani addresses that the driving force behind the improvement works for the living conditions of the workers was not only providing a healthier life environment for them but also ensuring to get higher efficiency from them by means of ameliorating their standard of living (Lampugnani, 1985).

One of the most extensive urban interferences of this period is the renovation of Paris prepared by city planner Georges-Eugène Haussmann who was entrusted by Napoleon III to create a new urban plan for Paris in the 19th century. Having the transportation problem at its focal point, this plan aimed at improving the "hygienic conditions" by destroying "dirty" streets spreading diseases, in accordance with a sense of aesthetics suitable for the monumental style of the period; solving the traffic problem and preventing the riots and rebellions by creating an order that could enable the troops to move easily within the city. Subsequent to the plan, large boulevards were opened in the central area of Paris between 1853 and 1869, thus, thousands of houses were demolished across the city and many had to leave the city, workers and craftsmen being the majority (Lampugnani, 1985).

David Harvey evaluates Haussmann's plan as a device for resolving the added surplus value and unemployment problems by means of town planning, and claims that as a result of his work, Haussmann has changed the scale urban processes were envisioned (Harvey, 2008). Haussmann's Renovation of Paris is an example of the hegemony placed on the social space by the abstract space. A new function assigned for the urban space (planned abstract space)

suggested by administrators or investors developed in contrast with the opinions of people living in that urban space and their use of urban space (social space). This contradiction is effective in the embodiment, development and transformation of today's cities as well (Gotham, Shefner, and Brumley, 2001).

In today's cities, we see the transformative power of globalization and neo-liberal economy policies affecting the whole world for almost last 40 years. By the end of 1970s, the world economic system started to enter a new restructuring process. In these years, by benefiting from the technological improvements providing mobility and remote control, large industrial corporations of "developed countries" began to direct their production functions towards "developing countries" with lower cost of labour in an attempt to increase their rates of profit (Fainstein, 1990). The transnational mobility of capital and investment diminishing the regulating role of central governments in countries' economies led the big cities of the world such as New York, London and Tokyo to become control and decision making centers in economy and finance (Sassen, 1998). As a consequence of the capital investment being shifted from industrialized countries to developing countries, crucial decreases in industrial employment started to be experienced within the regions where industries left (Judd and Parkinson, 1990). This paved the way for unemployment and poverty problems for the workers labouring in traditional industries. During the 1980s neo-liberal economy policies started to gain wide prevalence subsequent to free market supporter governments coming to power in countries with strong economies such as the UK and the USA. This formula of economic development resulted in substantial decrease in the regulatory role of the states. Free trade, deregulation, low inflation and privatization were determined as the major economic growth formula for developed countries, with a strong belief that investors should be free to direct their investments to any part of the world for minimizing their expenditures (Ellwood, 2002). Companies expanding their production and market functions worldwide gave rise to the development of service sector involving communication, computer, finance, accounting, management, marketing, law, media and advertising. These services enable the capital to function and centralize on a global scale by providing the opportunity for companies to remotely control their production and distribution functions in other parts of the world (Keyder and Öncü,1994). With the service sector coming into prominence, the industrial employment dominating several advanced economies of the world in 1960s gave its place to the service sector employment at the beginning of 1980s. However, although it had expanded, the employment in service sector could not recover the losses of job in the production sector (Judd and Parkinson, 1990).

With neo-liberal economy getting stronger, the ability of responding to market forces became an essential priority for the governments and consequently the welfare state model of the previous period foreseeing balanced socio-economic and spatial development gradually lost its power. As a result of decrease in welfare expenses, the funds transferred by the central governments to the urban governments were lowered. This reduction of budget forced cities to implement more entrepreneurial and competitive management patterns for the purpose of establishing new economic resources (Hall and Hubbard, 1996 and Harvey, 1989). Subsequently, urban managements started to improve their partnerships with the private sector. These public private partnership applications strengthened the political power of capital owners and corporations (Özdemir, 2010).

Within this competitive environment, urban managements began to work for producing more marketable city images with the aim of attracting the capital which gained a worldwide mobility as high technology industries, employment, new administrative and managerial institutions, various cultural activities and tourism (Paddison, 1993). Within this framework, new urban policies for reinvigorating the economy, and parallel to that several prestige projects implemented in this direction started to emerge, initially in North America, then in several European countries, particularly in England. Former industrial areas and buildings within the city centres were refurbished with new functions such as business, retail, culture and sports facilities in order to trigger the property market. The primary aims of these developments, which were pioneered by mega-projects involving trade and recreation oriented transformations of port districts in coastal towns of North America are to enliven the economy by attracting tourists and investors to cities (Özdemir, 2010).

Early examples of prestige projects first appeared as rehabilitation projects in coastal areas within the port cities of North America, and then they became widespread all around the world. Boston Quincy Market where old market buildings within the port area were

renovated as restaurants, shops and entertainment spaces; South Street Seaport including restaurants, cafés, shopping centres and a museum constructed upon the renewal of historical trade buildings in New York Port area; and Port of Baltimore where historical warehouses and quay structures were destroyed and improved as culture and festival spaces can be arrayed as examples of these projects which had significant impacts on their European counterparts (Bianchini, 1993). Birmingham International Convention Centre, Canary Wharf office buildings in London Docklands, renovation of Duisburg Port area in the region of Ruhr, Kop van Zuid in Rotterdam and projects of Waterfront Hall and Belfast Hilton in Belfast can be set as examples for prestige projects implemented in Europe during the 1980s (Percy, 2003).

The reason behind the occurrence of these projects, which can be encountered in several big cities of the world, is to provide physical and economic recovery through refunctioning derelict industrial zones of cities or to renovate urban decline areas having economic, social and physical problems. Although it is assumed that, with the economic recovery arising from a large-scale investment made in a specific area of the city, the projects would have a positive impact on everyone living within the region, many cases do not actually meet with this expectation. In many cities around the world, the results obtained would be a gap expanding gradually between "authentic", "hygienic", "bright" and "safe" neighbourhoods arranged for tourism and consumption with luxurious housing, business, retail and entertainment facilities, and the increasing number of slums with poor conditions, ghetto settlements and neighbourhoods evacuated for the purpose of renovation. While one part of the city is developing in a way that will meet the needs of executives and professionals received education at international standards, the other part involves a class increasingly being marginalized by the new economic system. This situation paves the way for a polarized society which the inequality between two ends increases day by day.

The Right to the City: An Inclusive Framework?

How do all these developments affect people living in cities? It seems that there is not much problem for those from the high-income group, because the projects are already aimed at defending their interests and spreading their lifestyle. How about those staying out of the global city envisagement? Urban poors, ethnic-religious minorities, women, children, elderly people, immigrants, nomads, non-regular workers, individuals with disabilities, LGBTQ individuals, homeless people…

Urban regeneration projects affecting the poor neighbourhoods of the city make already poor and vulnerable individuals and groups even more needy and fragile. Urban poor, losing their homes, businesses, social securities, health and education opportunities and, most importantly, their social networks that connect them to life, are being pushed into a more excluded and marginal position within the society. Fast growing inequality and social exclusion come with the violations of human right in urban space. People who are forced to live their houses due to regeneration projects are also deprived of their basic rights such as employment, education, social security, rest and leisure, participation in the political decision-making processes and adequate and healthy living conditions, which are the fundamental human rights stated in the Universal Declaration of Human Rights. In summary, the urban space produces inequality and social exclusion to the extent that it is the object of the capital and mega investments.

Can we think of the right to the city as a solution to the problems in the urban space arising from urban regeneration projects and the abstract space's hegemony on the social space? Suggested in 1968 by Henri Lefebvre, the idea of the right to the city lays emphasis on "need to restructure the power relations that underlie the production of urban space, fundamentally shifting control away from capital and the state and toward urban inhabitants" (Purcell, 2002). According to Lefebvre, the production of urban space also means "reproducing the social relations that are bound up in it" (Purcell, 2002). For this reason, it requires much more than planning the physical space; "it involves producing and reproducing all aspects of urban life" (Purcell, 2002). The right to the city involves two fundamental rights for urban inhabitants: the right to oeuvre (participation) and the right to appropriation. The right to participation asserts that inhabitants of the city must play a central role in all decisions contributing the production of urban life. The right to appropriation is the right to physical access, presence and use that can be summarized as inhabitants' physical existence in the urban space (Purcell, 2002).

Lefebvre's idea of the right to the city has been the source of inspiration for struggles regarding the access to urban public space and citizenship rights in many countries around the

world. Academic studies conducted in this field emphasize a new concept of citizenship and bring forward a variety of issues related to that such as use of public spaces, accessibility in urban space, access to water, immigration, male domination, homelessness, globalization, urban regeneration, social justice and urban citizenship (UN-HABITAT, ISSC, UNESCO, 2010). As a result of these problems starting to be discussed in detail, various charters and declarations about providing human rights in cities have been constituted through discussions, meetings and gatherings of several NGO's, human rights groups and local governments at international, regional, national and local levels. At global scale, World Charter on the Right to the City was first presented at the Social Forum of the Americas in Quito, and at the 2nd World Urban Forum in Barcelona in 2004 by HIC, COHRE, FNRU and Action Aid, and in 2005 World Charter for the Right to the City was adopted at the World Social Forum in Porto Alegre, Brazil (Meyer, 2009). The European Urban Charter was adopted by the Congress of Local and Regional Authorities of the Council of Europe in 1992 and was updated in 2008 under the title European Urban Charter II - Manifesto for a new urbanity with a focus on sustainability (Council of Europe, 2009). In addition to this, European Charter for Women in the City, a research study supported by the Commission of the European Union's Equal Opportunities Unit dated 1994 (EUROCULTURES et.al, 1994) and The European Charter for the Safeguarding of Human Rights in the City, first drafted in "Cities for Human Rights Conference" in Barcelona in 1998, and finalized and adopted in Saint-Denis in 2000 can be given as examples of charters at regional level (United Cities and Local Governments, 2012). At national level, The Brazilian Federal Law on Urban Development, known as the The City Statute of Brazil was accepted as a part of the federal constitution in 2001 (Cities Alliance & Brazil Ministry of Cities, 2010). At city scale, the Montréal Charter of Rights and Responsibilities was first adopted in 2005 by the Montréal City Council, and it came into force in 2006 (Montreal City Council, 2005).

Apart from the City Statute of Brazil, above mentioned charters are not legally binding documents, but rather texts of commitment to universal values of democracy, justice, equity and inclusion that can be used as guidelines for local governance. Although their focuses may vary, there are some common issues that all of them try to respond such as equality and non-discrimination, housing, health, education, employment, security, participation and democratic representation, equitable development, healthy environment, infrastructure and public services, transportation, culture, recreation, and access to information.

The right to the city as defined in these documents is based on protecting and strengthening the rights of all inhabitants, especially poor, ethnic-religious-cultural minorities, refugees, immigrants, nomads, disabled individuals, those living under the risk in terms of health and environmental conditions and those exposed to violence, and among these particularly the vulnerable ones as elderly people, women and children (Montreal City Council, 2005). These documents, aiming at creating an operational framework for the right to the city through restructuring the Universal Human Rights at the level of local governments, underline the social, cultural, political and environmental development in cities, involving social inclusion, democratic representation and participation, mutual tolerance and social solidarity, along with the economic and physical improvement. They also emphasize that in order to achieve these, a city should be provided with services such as shelter, health, education, employment, recreation and entertainment, culture, transportation and infrastructure in a way that all inhabitants can easily and equally benefit from these amenities. Additionally, these documents hold the local governments responsible for the provision of above mentioned services in cities.

The most significant role of these charters and declarations is their possibility of constituting a guiding framework on the subject of human rights in the city during the process of urban policy making. The existence of such a framework carries the potential of transforming the concepts about human rights into devices that can be used at local level in the formation of decision-making and policy production mechanisms; defining what rights mean in the daily lives of urban inhabitants; creating control mechanisms guaranteeing that management units in various levels act in accordance with human rights, and ensuring that local laws comply with international and national human rights commitments. Generating such a legal framework based on the right to the city is an important step towards creating a democratic and equalitarian urban life enabling all inhabitants to speak out their demands and rights. Of course creation of such a framework, which ensures the protection and provision of human rights in urban policy making, can only be possible with the participation of urban inhabitants.

Although this pragmatic understanding of the right to the city concept adapted in the production of the charters related to urban rights has the potential of providing an operational framework for urban policy making, the same understanding bears the risk of undermining the transformative and revolutionary essence of Lefebvre's notion of the right to the city as a right to transform our cities and ourselves (Meyer, 2009). On the one hand, as these documents target certain aspects of neo-liberal urban agenda, rather than transforming the neo-liberal system itself, they remain as tools for good urban governance operating within the existing system without altering it. On the other hand, listing of vulnerable groups even with the purpose of prioritizing their urban rights - as any listing carries the potential of excluding some non-listed groups - is as dangerous as conceptualizing an undefined "urban inhabitants" group as the holders of these rights - since this urban inhabitants group includes individuals, groups or corporations who hold and exert economic and political power over others who are somehow excluded from these power relations, oppressed and deprived of their rights. Therefore, with this depoliticized tone, and unclear connotations, urban rights can only serve "neoliberalism with a human touch" (Meyer, 2009).

For this reason, if we want a real change in our cities and in our lives, we need a clear definition of content and target of the right to the city. If we put it with Marcuse's words, we have to be aware of "whose right, what right and to what city" (Marcuse, 2009) we are talking about. For Marcuse, the right to the city embraces people who are deprived of means of meeting their basic needs, and accessing their fundamental rights, people who are excluded from the system and exploited by others; and alienated and oppressed because of their social and cultural identities. The right to the city is not a set of individualistic, singular rights to some listed provisions and amenities within the existing legal system, but a collective and holistic right to have a say to change that system for better. Marcuse explains Lefebvre's conception of city in the right to the city as the city of future. In opposition to general understanding and interpretation of the city as existing city with its physical reality and materiality, the conception of the city of future implies an ideal urban society, which fulfills "justice, equity, democracy, the full development of human potentials or capabilities, to all according to their needs, from all according to their abilities, the recognition of human differences" (Marcuse, 2009).

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Conflict of interests

The Authors declare no conflict of interest.

References

Benevolo, L. (1977) History of Modern Architecture, MIT Press, Boston. https://books.google.com.cy/books?id=kOdoEYq6N8wC&dq=Benevolo,+L.+%22history+of+modern+architecture&lr=&source=gbs_navlinks_s

Bianchini, F., (1993), "Remaking European Cities: The Role of Cultural Policies", Cultural Policy and Urban Regeneration, (ed.) F. Bianchini ve M. Parkinson, pp: 1-20, Manchester University Press, Manchester. https://books.google.com.cy/books?id=N327AAAAIAAJ&dq=Bianchini,+F.,+(1993),+cultural+policy+and+urban+regeneration&source=gbs_navlinks_s

Brenner, N. & Schmid, C. (2011). Planetary Urbanization. in M. Gandy (ed.) Urban Constellations (pp: 10-13). Berlin: Jovis https://books.google.com.cy/books?id=4FUWywAACAAJ&dq=M.+Gandy+(ed.)+Urban+Constellations&hl=en&sa=X&ved=0ahUKEwjhzvzArubiAhXReZoKHczeBTMQ6AEIOjAE

Cities Alliance & Brazil Ministry of Cities (2010) The City Statute of Brazil A Commentary, Retrieved on 14.02.2018, http://www.citiesalliance.org/sites/citiesalliance.org/files/CA_Images/CityStatuteofBrazil_English_fulltext.pdf

Council of Europe (2009), European Urban Charter II - Manifesto for a new urbanity, Retrieved on 14.02.2018. https://5cidade.files.wordpress.com/2011/06/urban-charter_en.pdf

Ellwood, W. (2002) Küreselleşmeyi Anlama Kılavuzu, Metis, İstanbul. https://www.kitapyurdu.com/kitap/kureselles meyi-anlama-kilavuzu/49006.html

EUROCULTURES et.al (1994) European Charter for Women in the City, Commission of the European Union Equal Opportunities Unit, Retrieved 14.02.2018, http://www.hlrn.org/img/documents/1994%20-%20European%20Charter%20for%20Women%20in%20the%20City.pdf

Fainstein, S. (1990) "The Changing World Economy and Urban Restructuring" Leadership and Urban Regeneration, Cities in North America and Europe, (ed.) D. Judd, and

M. Parkinson, pp: 31-50, Sage, London, New Delhi. https://books.google.com.cy/books?id=nlYFAQAAIAAJ&q=Leadership+and+Urban+Regeneration,+Cities+in+North+America+and+Europe,+(ed.)+D.+Judd,+and+M.+Parkinson,&dq=Leadership+and+Urban+Regeneration,+Cities+in+North+America+and+Europe,+(ed.)+D.+Judd,+and+M.+Parkinson,&hl=en&sa=X&ved=0ahUKEwilr7aQr-biAhVIJZoKHY99Cy0Q6AEIQTAF

Gotham, K.F., Shefner, J., Brumley, K. (2001) "Abstract Space, Social Space and the Redevelopment of Public Housing", Critical Perspectives on Urban Redevelopment, 6, pp: 313-335 https://www.emeraldinsight.com/doi/pdfplus/10.1016/S1047-0042(01)80012-X

Gottdiener, M. (1993) "A Marx for Our Time: Henri Lefèbvre and The Production of Space", Sociological Theory, 11/1. https://www.jstor.org/stable/201984?seq=1#metadata_info_tab_contents

Hall, T. and Hubbard, P. (1996) "The entrepreneurial city: new urban politics, new urban geographies?" Progress in Human Geography, V:20/2, pp: 153-174. https://doi.org/10.1177/030913259602000201

Harvey, D. (1989) "From Managerialism to Entrepreneurialism: The Transformation in Urban Governance in Late Capitalism", Geografiska Annaler. Series B, Human Geography, Vol. 71, No. 1, pp: 3-17. https://doi.org/10.1080/04353684.1989.11879583

Harvey, D. (2008) "The Right to the City" New Left Review, 53, pp: 23-39. https://kompreser.espivblogs.net/files/2012/11/David-Harvey-The-Right-To-The-City-full.pdf

Hobsbawm, E.J., (1998) Sanayi ve İmparatorluk, Dost Kitabevi, Ankara. http://www.dostyayinevi.com/TR/belge/1-347/sanayi-ve-imparatorluk.html

IPCC, (2014): Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. Geneva: IPCC. Retrieved on 02.16.2018, from: http://www.ipcc.ch/report/ar5/syr/

Judd, D. and Parkinson, M. (1990) "Urban Leadership and Regeneration Economic Constraint and Political Choice" Leadership and Urban Regeneration, pp: 13-30. https://books.google.com.cy/books?id=nlYFAQAAIAAJ&q=Leadership+and+Urban+Regeneration,+Cities+in+North+America+and+Europe,+(ed.)+D.+Judd,+and+M.+Parkinson,&dq=Leadership+and+Urban+Regeneration,+Cities+in+North+America+and+Europe,+(ed.)+D.+Judd,+and+M.+Parkinson,&hl=en&sa=X&ved=0ahUKEwilr7aQr-biAhVIJZoKHY99Cy0Q6AEIQTAF

Keyder, Ç. and Öncü, A. (1994) "Globalization of a Third World Metropolis: Istanbul in the 1980s" Review 17/3, pp: 383-421, p:389. https://www.jstor.org/stable/40241297

Lampugnani, V. M. (1985) Architecture and City Planning in the Twentieth Century, Van Nostrand Reinhold Company, New York. https://books.google.com.cy/books?id=Wn95vgEACAAJ&dq=Architecture+and+City+Planning+in+the+Twentieth+Century+lampugnani&hl=en&sa=X&ved=0ahUKEwis7rvMsObiAhVmz6YKHX8vD5MQ6AEIJjAA

Lefèbvre , H. (1996) The Production of Space, Blackwell Publishers, Oxford, UK https://books.google.com.cy/books?id=SIXcnloa4MwC&dq=Lef%C3%A8bvre+,+H.+(1996)+The+Production+of+Space&hl=en&sa=X&ved=0ahUKEwjT7r_asObiAhXRJpoKHXutAJwQ6AEINTAD

Marcuse, P. (2009) "From critical urban theory to the right to the city" CITY, VOL. 13, NOS. 2–3, JUNE–SEPTEMBER 2009, pp: 185-106, p:189. https://doi.org/10.1080/13604810902982177

Meyer, M. (2009), Discussion Paper: Urban Policies and the Right to the City.

Montreal City Council (2005), Montreal Charter of Rights and Responsibilities, Retrieved on 14.02.2018 https://ville.montreal.qc.ca/pls/portal/docs/page/charte_mtl_fr/media/documents/charte_montrealaise_english.pdf,

Özdemir, D. (2010) "Giriş: Batı Avrupa'da Kentsel Dönüşüm Olgusunun Süreç İçinde Değişen Anlamları ve Türkiye Yansımaları", Kentsel Dönüşümde Politika, Mevzuat, Uygulama, (ed.) D. Özdemir, pp: 1-34, Nobel Yayın, Ankara, İstanbul. https://www.nobelyayin.com/detay.asp?u=3094

Paddison, R. (1993) "City Marketing, Image Reconstruction and Urban Regeneration" Urban Studies 30/2, pp: 339-350; https://journals.sagepub.com/doi/abs/10.1080/00420989320080331

Percy, S., (2003), "New Agendas", Urban Regeneration in Europe, (ed.) C. Couch, C. Fraser ve S. Percy, pp: 200-208, Blackwell, Oxford. https://books.google.com.cy/books?id=53a2w5VkuPsC&dq=Urban+Regeneration+in+Europe,+(ed.)+C.+Couch,+C.+Fraser+ve+S.+Percy,&source=gbs_navlinks_s

Purcell, M. (2002) "Excavating Lefèbvre : The Right to the City and its Urban Politics of the Inhabitant" Geojournal 58, pp: 99-108, p:101 https://link.springer.com/article/10.1023/B:GEJO.0000010829.62237.8f

Roberts, P. (2003) "The Evolution, Definition and Purpose of Urban Regeneration", Urban Regeneration a Handbook, (ed.) P. Roberts, ve H. Sykes, pp: 9-36, Sage, London. https://books.google.com.cy/books?id=tjYEDQAAQBAJ&dq=%E2%80%9CThe+Evolution,+Definition+and+Purpose+of+Urban+Regeneration%E2%80%9D&lr=&source=gbs_navlinks_s

Sassen, S. (1998). Globalization and its Discontents: Essays on the New Mobility of People and Money. New York: New Press. https://books.google.com.cy/books?id=zLmePgAACAAJ&dq=Globalization+and+its+Discontents:+Essays+on+the+New+Mobility+of+People+and+Money&hl=en&sa=X&ved=0ahUKEwibmeeUsubiAhXB8qYKHe8lBakQ6AEIJjAA

Thorns, D. C. (2004) Kentlerin Dönüşümü: Kent Teorisi ve Kentsel Yaşam, Soyak Yayınları, İstanbul. https://books.google.com.cy/books/about/Kentlerin_d%C3%B6n%C3%BC%C5%9F%C3%BCm%C3%BC.html?id=R22aAAAACAAJ&redir_esc=y

Torrey, B. B. (2004). Urbanization: An Environmental Force to be Reckoned With. Retrieved on 03.03.2017 http://www.prb.org/Publications/Articles/2004/UrbanizationAnEnvironmentalForcetoBeReckonedWith.aspx

United Cities and Local Governments (2012) European Charter for the Safeguarding of Human Rights in the City, Retrieved on 12 April 2019, https://www.uclg-cisdp.org/sites/default/files/CISDP%20Carta%20Europea%20Sencera_baixa_3.pdf

UN - HABITAT (2003). The Challenge of Slums: Global Report on Human Settlements 2003. (HS/686/03E). UN – HABITAT. Retrieved on 02.16.2018, from: https://unhabitat.org/books/the-challenge-of-slums-global-report-on-human-settlements-2003/

UN-HABITAT, ISSC, UNESCO (2010) Discussion Paper Urban Policies and the Right to the City. Retrieved on 15.11.2010. http://hic-mena.org/documents/UN%20Habitat%20discussion.pdf

United Nations, Department of Economic and Social Affairs, Population Division. (2015). World Urbanization Prospects: The 2014 Revision. (ST/ESA/SER.A/366). New York: United Nations. Retrieved on 02.16.2018, from: https://esa.un.org/unpd/wup/Publications/Files/WUP2014-Report.pdf

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Street Furniture Influence in Revitalizing the Bahraini Identity

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ABSTRACT

"Bab Al Bahrain" Avenue is one of the liveliest streets and its location is in the intermediate of the historical part that gave the avenue a strong historical dimension in the urban context of Manama city, Kingdom of Bahrain. Moreover, the avenue has economic and cultural significance activities. The socio-economic value of "Bab Al Bahrain" and the attached "Gold Market" make the area is the most crowded area in Manama. The existing users of the avenue are variable between residences, local visitors and tourist. Unfortunately, with the rapid urban developing for the Manama City in general and Bab Al Bahrain area, and the changing for the economic base for most of the original families they moved to other suitable places to them while new non-Bahraini replaced them. As a result, the sense of identity and belonging is not considerable. Consequently, the identity for these areas is in its way to disappear. This research analyzed the street furniture condition and focused on the act of street furniture role in revitalizing Bahraini identity in such an area. Moreover, the research draws the point of revitalizing the sense of belonging for the residences, which will influence positively upon the open spaces' conditions and the visual quality.

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1 Introduction

In places that have heritage characteristics (figure 1), it is not easy to design street furniture. Integrating and creating a sense of place by the use of landscape elements in designing these areas is often difficult. In most of the historical areas all over the world, street furniture plays a significant role in presenting the identity and the belonging for the residences, which influence positively upon the open spaces conditions and the visual quality. In Bahrain in general, there is strong emphasis and concern towards the preserving the historical areas. It is focal point as significant alternative for the national economic resources in Bahrain 2030 (National eGovernment Strategy, 2016). In Bab Al Bahrain in particular, respecting sustainability concept, several preservation projects were directed to have the max benefit from such area to enhance the social and economic of the country. Street furniture as one of the major landscape architecture design elements plays significant role in preservation projects by showing

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the identity of the heritage and transfer the senses of belonging to the users and visitors of the area subject (SOM, 2007).

Figure 1: Heritage characteristics for each heritage area (Al-Kubaisy, 2010).

In opposite, in the case of the old part of Manama city, there is inappropriately occurred there, which reflects negatively in the form of the losing of Bahraini identity for users of these areas. However, the challenge is how the design can give the feeling of proud for the users of the city. Moreover, a suitable design for practical functions and specific purposes are part of the challenges as well. Such challenging can open up creating issues for the landscape designers of open spaces within the heritage areas. It may enable them to show the identity of the places and shape spaces that can succeed in achieving the satisfaction of users to enhance the quality of the areas over the long term (Elghonaimy, 2019).

The research problem lies in the absence of a sense of belonging of the users in the area, which led to a low level of the concept of identity in the area. So, the objective of this research is to disclose the loss of identity resulted from the urban changes due to the developing projects, specifically on the example of Bab Al Bahrain Avenue, Manama city (figure 2).

Figure 2: Inspiring the belongings in street furniture design from social and culture elements (Researcher).

While Manama was an administrative and commercial center in the last decades in Bahrain, but it has significantly changed because of the prompt migration from and to the city. These significant changes were in terms of inhabitants' characteristics (socio-economic) and activities. Moreover, in the condition of respecting sustainability, the research is divided into theoretical part to conclude the identity issues. While the second part will analyze the street furniture subject in term of the type of user (social), variation in time and environmental factors and Activity (economic) in Bab Al Bahrain. The research will end by presenting the conclusion and recommendation of the study.

2. Street Furniture and Identity

Lynch, (1960) clarified that the identity in urban spaces is formed by the entire values and characteristics of a city and should reflect the unique feature and individuality of the spaces (Lynch, 1960; Mach, 1993). The concept of identity is subjected to the urban context of the target area with human, expresses diversity and originality issues. Identity is a phenomenon that doesn't exist in similarity and replication place. (Isin & Wood, 1999). Moreover, identity is the sum of different social, economic and environmental features that are used to show and distinguish assets within properties. The specialty of the social, ideology and culture, consistency is a significant concept that should be present in identity. Then, having a triumphant sense of Identity to users, the sustainability of certain conditions is necessary. Figure 3; shows the major four affective factors in creating the identity, which are relating to history (the origin or heritage), Social (considering value and personality of social needs), landscapes architecture (Environment and factors depending on topography), and appropriate technology (Gürsel, 1996).

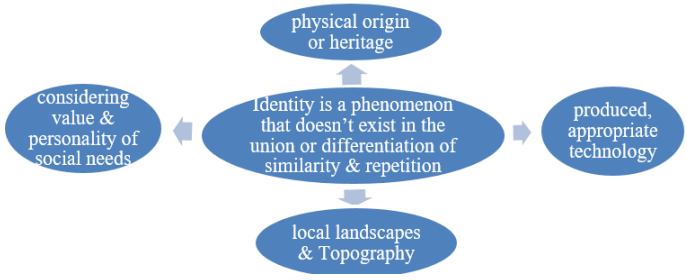


Figure 3: The major four affective elements in forming the identity (Researcher).

Cities with historical dimension, urban area identity can be defined, from the cultural point of view with concerning its history, as it is the complete components distinguishing one city from others (Sirel, 2005). Moreover, in cities with history and heritage, cities' formation depend on the social structure, which reflect the identity of the city. Moreover, historically, the dynamic of the cities continuously changing of the urban structure, (Nalkaya, 2006). In other words, identity in cities is such a significant reliability brought by a progression from the city history to recent time. Other definition for the cities' identity that it is the formation of the urban people and their lifestyle based on the physical, cultural, socio-economic, historical and formational factors. (Çöl, 1998). From the landscape Architecture point of view, identity is the sum of the components, which defines a city and distinguishes it from the others.

The smallest unit constituting of the identity starts

from the landscape architecture of the outdoor spaces, especially street furniture within the neighborhood. The geographical features, and the local traditions, as well as the lifestyles, are the components completing the identity of an area. Emerge time and shape help in forming city' identity, which are arising from the:

a. Natural and manmade environment, which includes the leveling of the area and climate circumstances, vegetation, landmarks and lightweight structures to obtain aesthetic results, and positive result of the environment
b. society' cultural, social behavioural and its social and commercial characteristics
c. Artificial situation (streets, avenues, squares, monumental architectural buildings, examples of civil architecture).

All this is a systematic procedure under certain circumstances to achieve the desired results. (Worldatlas, 2017).

3. Identity in Bahrain

After the Second World War, the identity in Bahraini urban areas and the structure of the building components changed, where many public spaces were added, and others were changed in functions. Therefore, within the recent realization of 'regional identity' in architecture, the role of landscape architecture became more important. It led to further interest in enhancing the urban spaces and emphasis the identity with the landscape design elements. The identity in landscape design in the arid regions provides a design that is suitable for the environment and the culture with low cost and less maintenance. Using native species within natural and semi-natural schemes supports the idea of regional identity (figure 4). It occurs by preserving local visual character, conserving native biodiversity and reducing energy inputs in the landscape design, as well as, providing aesthetic and environmental functions such as shade, reducing glare and heat, retaining moisture in the soil and the air ameliorating wind, dust and soil erosion, and reducing desertification (Elghonaimy, 2011).

The proper integrating with designing street furniture for such historical areas creates the identity and the sense of place around it. This integrating by the use of the street furniture' elements comprising use to facilitate the movements of vehicles and transportation in the areas. Moreover, the use of street islands and the walkways adjacent to street are used to make the road more aesthetically and appealing in urban areas in general and historical spaces in particular. However, in such historical areas, the conceptual design vision for street furniture's has to consider many significant issues. For example, while designing these areas using such, we need to be careful that if placed near intersections especially in the old part of towns with the narrow and crowded streets, may obstruct the view of drivers (Masoud, 2010).

Figure 4. Inspiration the Bahraini identity from heritage elements (Researcher).

In historical urban spaces, the designing of the street furniture has to set up based on site identity and the functional requirements. The historical urban context affects the existing and desired patterns and serves its purpose efficiently. In such areas, most of the street furniture elements are custom made. Identity and following sprite of the site context is significant thought while designing. The furniture matching with site identity is substantial and in high quality, which is not necessarily costly. There are several visions and ways of thinking in designing street furniture as well as selecting the types and materials. For example, there could be a consistent selection, which gives a constant tone to the surrounding historical urban context as well as the streets and walkways. Furthermore, various parts of the streetscape should reflect the culture and social issues. Moreover, it could be designed to work as artworks. Furthermore, multiple elements of the streetscape should reveal the identity of the place and respect the culture and social issues. (Crankshaw, 2008). Al Abdullah (2010) mentioned that in analysing the streets, we need to consider the important type of streets for pedestrians in these areas, which are Destination, Transitional and Passing by. For each type, designers study specific consideration in designing. (Evyapan, et al., 2000).

In general, there are four essential criteria involved in selecting and placing items of street furniture:

a. function (i.e. seeing how necessary an item is and how it can serve its purpose),
b. siting and layout (i.e. deciding where each item should be places),
c. form and appearance (i.e. making sure there a continuity or at least a linkage between the designs of different items),
d. Durability (given expected usage), and cost (Evyapan, et al., 2000).

As well known that streets inside the historic urban areas have always served three interrelation purposes, which are gathering places, sooq and joining place. As a gathering place, the open

spaces provided suitable environment for social exchange in different levels. As a marketplace, the streets within the urban space, it facilitates the commercial accomplishments in different levels. Finally, public spaces allowed the influences between all the functions. (Gehl et al., 2006). However, streets inside the cities show the variety of social characteristics and urban changes, which are depending on the concepts of time and space. (Beyan and Gürkan, 2015). Madinipour (1996), explained that while studying street furniture projects, landscape Architects put Time, Place, and Activities as major considerations in the first stage due to the high value to influence the qualitative performance of the voids and spaces is at the forefront of these considerations.

4. Background about Bab Al Bahrain, Manama, Bahrain

Bahrain is an independent Arab state nation in Western Asia, located on latitude 50.85 East and latitude 26.24 north and consists of 36 islands. The climate of Bahrain is hot and humid weather and the rainfall is very low and irregular (Smith, 1999). Most of Bahrain's population is concentrated in cities, most of them in Manama. Manama has modern buildings and wide, tree-lined roads. The rest of the population lives in ancient parts where one can see the architecture and traditional identity of the Bahraini people. (Countries and their cultures, 2000).

Since 1921, Manama became the capital of Bahrain and was for a long time a trading center in the Gulf area, where traders came to break and trade their products. It means "the place of rest", Manama is home to a very diverse population, from a long time ago Jews, Muslims, Hondo, and Christians lived door to door. Bab Al Bahrain Avenue is one of the busiest streets in Manama (Figure 5), Locals and tourist are filling this area. Bahrain has a strong history of urbanization. It has a respectable history, which created worthy built environments. (Elwazani, et al., 2006). It should be noted that Bab Al Bahrain Avenue has the significance of being Destination, Passing by and Transitional.

Figure 5. Bab Al Bahrain location in the beginning of the busiest streets in Manama.

Bab Al Bahrain Avenue is an excellent example to show the Bahrain identity problem. The area has a strong historical dimension in the urban context; it has economic and cultural significance. The variation between users influenced upon creating diversity in the socio-economic activities. (Nour Al-Nabi, 2012). The physical analyzing for the street will include the revising of the landscape design elements (hardscape and softscape) (figure 6). Therefore, there is a need for accurate detecting about the significant reasons for this current street furniture' design inappropriately for the historical value within such area. A theoretical background about Bab Al Bahrain area that followed by analyzing and surveying the existing condition was considered in the research plan. Special questionnaire for the different types of users was designed considering the variety in time, the different type users and variable activities for this busy area. The target of this stage is to have a clear image from the various users, authority representatives, and the urban expertise about inappropriately dealing with the urban quality in spite of the intense concern from the authority to enhance the urban quality for these areas.

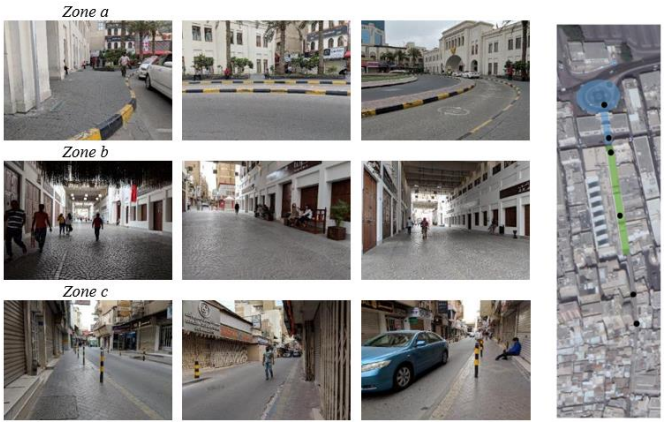


Figure 6. Using the physical landscape design elements (hardscape and softscape) in the 3 sections of Bab Al Bahrain Avenue (Researcher).

5. The Analyses of Bab Al Bahrain Avenue

Historically, the inter area had many developing stages until the existing stage. Physically, the study of the avenue was divided into (figure 6&7);

a. The first consists of the building of Bab Al Bahrain and the surrounding (the fountain - shaded areas where it has seats - the first area is relatively has the constant design for long time.
b. Second, the second area had many developing stages through significant changes, and in the final developing, it had been turned into a pedestrian path with the covered part of the market.
c. Third, we get into the "Gold Market", and it is the uncovered part with a regular street.

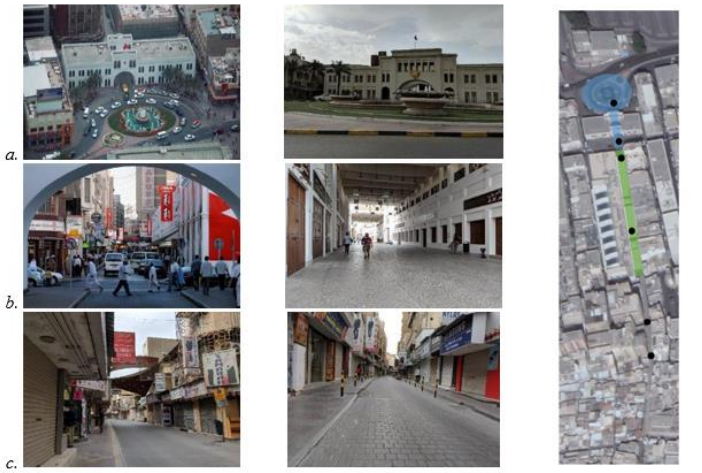
The avenue will be analysis in term of time of using, type users, and the activities.

5.1 Time of Using

From the site visits (figure 8) and documenting the users' activities in term of type and time, it is a busy area with multi-culture users and multi disciplinarians and economic activities.

5.2 Type of Users

Both locals (traders, labours, commercials, and social) and tourist are using the street, as it holds a cultural attraction as well as an economic attraction.



a. b. c.

before the last 2012 renovation El Wazani, S, A., & LERMA, J. L., (2006) | After the last 2012 renovation (researcher) | Dividing the Avenue into 3 main sections

Figure 7. Analysing Bab Al Bahrain Avenue (Researcher).

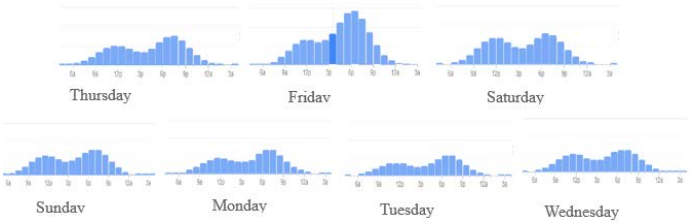


Figure 8. Average Time of Using / week: study of observing for 3 months to show the times where Bab Al Bahrain Avenue is used, afternoon and evening (google, 2018).

5.2 Activities

The avenue has many activities that can be done taking pictures near the second part with the landmark "I (heart) Bahrain", (figure 9) near Bab Al Bahrain, and near the hanging coins. Users can have a rest within the sitting area in the Cafes and the shops in the context; they can sit around and enjoy the space. The above featured an estimation for the use of Bab Al Bahrain Avenue, where there are two times where space is busy used, afternoon and evening, the purpose towards the weekend the usage peaks drastically specifically on Friday afternoons.

Figure 9: Anagrammatic view for the Bab Al Bahrain (zone a the main gate) and main approach of the avenue (zone b in "I love Bahrain" part).

From Table (1), the observation is as follows:

Table 1. The analysis for using the avenue.

a. According to Locals:			
Factor of correlation	**Time**	**Place**	**Activities**
Social, cultural,& aesthetic: Human behavior & resources;	Weekends are busier specially on the afternoon	Zone a & b	cultural attraction
Physical: Urban characteristics and resources ;	Summer	All zones	Sitting area, photo shooting
Environmental via natural resources;	-	-	-
Economic, which affects System of urban management.	Summer (mostly on cruises season)	Zone c mainly because it is more traditional and has more shops	Shopping
b. According to retailers:			
Factor of correlation	**Time**	**Place**	**Activities**
Social, cultural,& aesthetic: Human behavior & resources;	Before and after opening hours and at break times	Mostly foreign retailers in Zone c & Locals in Zone b	Chatting & meeting
Physical: Urban characteristics and resources ;	All day	Zone b & c	Sitting area
Environmental via natural resources;	-	-	-
Economic, which affects System of urban management.	9am – 10pm	New stores in Zone b & old in zone c	Selling
c. According to Tourists			
Factor of correlation	**Time**	**Place**	**Activities**
Social, cultural, & aesthetic: Human behaviour & resources;	Weekends are busier specially on the afternoon	Zone a & b	cultural attraction
Physical: Urban characteristics and resources ;	Summer	All zones	Sitting area, photo shooting
Environmental via natural resources;	-	-	-
Economic, that affects System of urban management.	Summer (mostly on cruises season)	Zone 3 mainly because it is more traditional and has more shops	Shopping

6. The Observation

In the first and second area had highly affected the usage of the space when compared to the third area where it lacks the elements, the first area we have many people in informal gatherings, around the fountain and the shaded vaults, as well as sitting on the plantation retaining walls and the windows. Observing from the analysis of the placement of the physical landscape design elements (hardscape and softscape) in the three sections of Bab Al Bahrain Avenue were as follows:

6.1 Pavement

Several pavement types exist in all different zone and sometimes make it missy:

- Sidewalk on Bab Al Bahrain: 45 degrees Herringbone pavement is used in grey color to indicate the use of it as a pedestrian path.
- Around Planters outside Bab Al Bahrain: Linear brick pattern surrounding the tree pots in both

red and grey colors to create boundary for the plants.
- Pedestrian Walkway under the two pathways of Bab Al Bahrain: small squares bricks differentiating the path under Bab Al Bahrain area.
- Vehicles Road: combination of different size of bricks acting as a road for vehicles. (Figure 10)

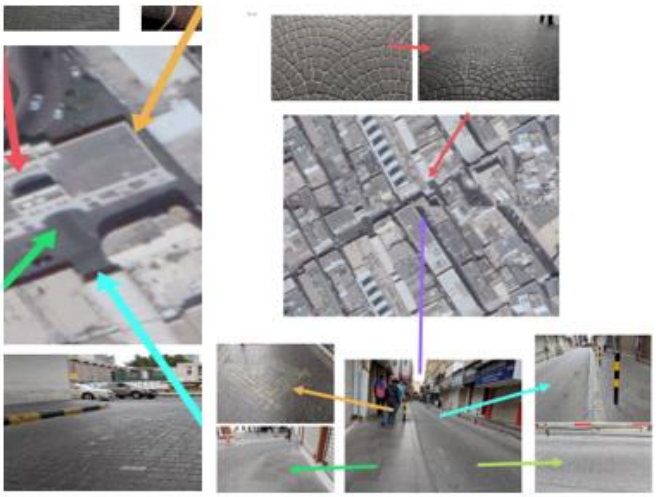


Figure 10. Pavement design and distribution (Researcher).

6.2 Water Feature

The only water feature in the area is the fountain, which is located in the first zone in the middle of the roundabout. It mainly pumps the water then recycle it to the lower pool then back again upwards. This fountain existed there from a very long time ago as it shown in Figure (11). By that, it is acting as a very important node in the area for the locals and the coming tourists.

Figure 11. Water fountain (Researcher).

6.3 Lighting Elements

Many types and functions of lighting exist in this street:
- On ground at zone 1&2: Wash light linear and circular have been placed to light on the edges of Bab Al Bahrain monument.
- Other ones were placed between shops in zone 2 to enlighten the shaded corridor.
- Above the shops in zone 2: shows the Down lights placed above the stores which is sometimes replaced by lanterns.
- Main Lighting inside zone 2: Big downlights are directed to the edges of the middle corridor.
- Hanging down lights in zone 2: There are many lanterns laid on a linear pattern perpendicular to the shaded corridor. LED bulbs suspended from the roof of the two paths in Bab Al Bahrain.
- Above the shops in zone 3: Figure (12) shows different type of LED or Florescent light placed within the on-store billboard to light the front of the stores and by that the narrow street.

6.4 Sitting Furniture
- Group of furniture placed together applying the concept of "BASTA" which is commonly created by Bahraini people in the neighbourhoods for setting and gathering with family or neighbours.
- Three large wooden sofas covered with pillows and a single wooden table used as "Basta".
- This setting area is placed on the right shaded corridor area (or Liwan area) of the main Bab Al Bahrain entrance with wall photo gallery could enjoy while setting in the "Basta".
- This type of landscape furniture used in this cultural street could enhance the culture and relate users with Bahrain's traditions and history.

6.5 Lightweight Structure

Many of light structures could be seen in this avenue, (figure 13:16) some has specific functions, and some are just for aesthetic or enhancing users experience, types of Lightweight structures seen are:

a. Shading structures
b. Barriers
c. Garbage bins
d. Shading structures
e. Other like sculptures
f. hanging materials
g. vending machines
h. Advertising panels.

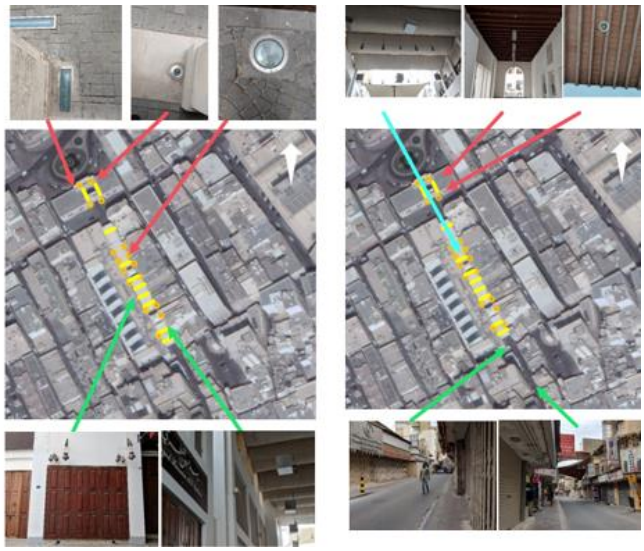


Figure 12. Lighting elements (Researcher).

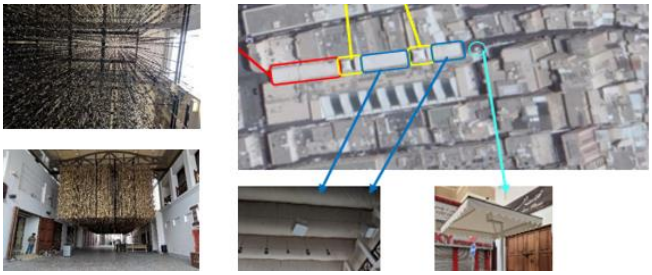


Figure 13. Shading (lightweight structure) as environmental treatment (Researcher).

Figure 14. Street sidewalks and barriers (Researcher).

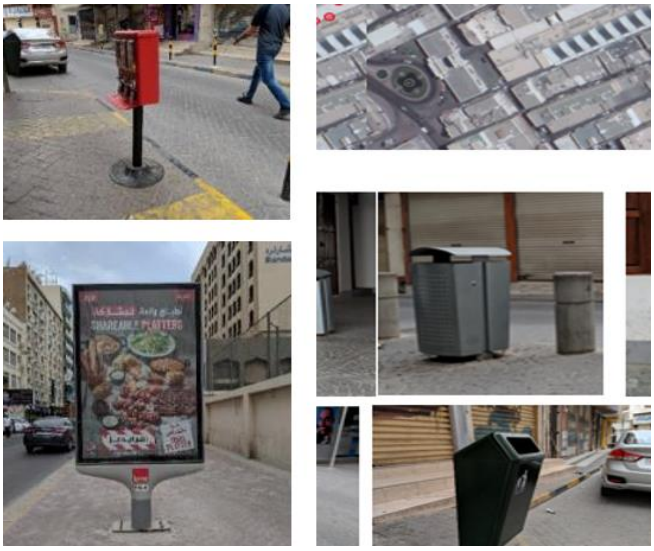


Figure 15. Signs and trash boxes (Researcher).

Figure 16. Services distributions according to users' needs (Researcher).

6.6 Softscape

Softscape scattered (figure 17:19) in low number and small areas as well. It reflects the miss consideration of the value of the greenery in the new renovation projects.

Figure 17: Softscape in low level within the area in front of Bab Al Bahrain building

Date Palm: tree type of palm family, cultivated for its edible sweet fruit, which has many benefits. Can reach up to about 21–23 m height.	Plumeria alba: A 2-8m evergreen shrub that has narrow elongated leaves, with large and strongly perfumed white flowers with a yellow centre.	Sphagneticola trilobata: An ornamental ground cover spreading, mat-forming perennial herb up to 30 cm in height.	Bougainvillea: A thorny ornamental vines, bushes, and trees with flower-like spring leaves near its flowers. It is a pest-free plant that can grow anywhere from 1 to 12 m.	Grass	Shrubs

Figure 18: species of the plants that are in Bab Al Bahrain Avenue.

Figure 19. Softscape in low level within the area.

Green was used as a concept while designing open spaces in old time. Many types and forms in term of palms and species of shrubs were used. as main elements.

7. Findings

In Bab Al Bahrain as one of the important historic urban areas, there is a wonder of the deteriorating of the sense of Bahraini belonging and identity for users of these areas, it was found that:

a. While screening the urban quality of the historical areas in old Manama, it was found a sort of deterioration for understanding the heritage concept for the users in that area in general. The primary indicators showed that most of the users have minor concern towards the heritage values of the area. Moreover, landscape architecture elements in general and street furniture in particular have minor emphasis towards showing the heritage values of this area. Most of the users cannot understand the significance of this area in term of heritage value.
b. Most of the hardscape elements following no identity to the place. Moreover, the softscape elements were weak in designing and locations

in the avenue. The reasons came from the absence of identity and the belongings in street furniture design in term of concept and inspiration, which regularly comes from using elements inspired by the Heritage, History, Culture and the use of landmarks. In addition, were strongly provided but most of them has weak design and lack of unity.

c. Moreover, the identity is missing to the whole areas and small elements were found but in random distributions. While some elements were perfectly designed and enhance the user experience of the place but not following the historic characteristics of the spaces.
d. There is a low level of understanding the know-how of dealing with the identity in streets designs (furniture) as well as controlling the impacts of the current mix use of lands and the disturbing activities. Consequently, the sense of belonging disappeared for residences (infection of careless). Moreover, the identity of Bahrain in these areas are low as well.

Figure 20. Low level of understanding the know-how of dealing with identity (Researcher).

8 Conclusion

After studying the identity subject in the case of Bab Al Bahrain historical urban areas, it is noticed that the old design has been replaced with a modern one. Unfortunately, while designing the street furniture, the use of the landscape architecture elements does not show the Bahraini identity or reflect the local heritage.

Therefore, the characteristics of the Antiquities and the Heritage in Bahrain should be guided, considered, employed and clarified in using the landscape architecture elements that respect the preserving of the heritage to show the identity in the area

The using of street furniture is one of the significance branches to transfer the feeling of belonging in their daily live within heritage intimate spaces while practising the daily activates.

Landscape architecture elements contribute to the development of the country's cultural data. In addition to what the identity adds to the simplicity and significant meanings of the people who live in Bahrain. Therefore, the output of the research recommends adding elements that highlight the identity of the street furniture in Bab Al Bahrain. Moreover, the use of local plants capable of carrying the natural atmosphere and soil

Consequently, the recommended way to revive the sense of identity will occur by considering the following aspects in designing the streets and selecting its furniture elements:

a. *physical elements*
b. *cultural issues*
c. *socio-economic*
d. *historical dimension*
e. *formational factors*
f. *ideology and coherence*

Since Bab Al Bahrain is busy areas with social and economic activities and having different type of users, the selecting of the street furniture elements should emerge in time and shape by coming from the:

a. *Environment (topography, climate and vegetation),*
b. *Society (socio-economic and socio-cultural characteristics),*
c. *Artificial situation (monumental physical landmarks).*

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Conflict of interests

The Authors declare no conflict of interest.

References

Al-Kubaisy, D. F. (2010). *Capacity Building for Enhancement of Urban Governance, Pilot Projects for Traditional Areas in Bahrain: "Conservation and Urban Design Projects for Traditional Areas*". Bahrain: Ministry of Municipalities Affairs & UN Development Program. https://www.iasj.net/iasj?func=fulltext&aId=28825 (accessed on: 17 Feb 2019).

American Association of State Highway and Transportation Officials, Task Force for Roadside Safety Staff (2011). *AASHTO Roadside Design Guide*. 4th ed. p10-13. http://imentaraddod.com/wp-content/uploads/2017/07/AASHTO-Roadside-Design-Guide-4th-ed-2011.pdf (accessed on: 20 January 2019).

Bahrain.bh. Kingdom of Bahrain: *National eGovernment Strategy 2016, eGovernment towards a better life*. Summary. https://www.bahrain.bh/wps/wcm/connect/fc54be3a-a0d6-43ef-9cbe-7ab640c581d3/New+eGovernment+Strategy+2012-2016.pdf?MOD=AJPERES (accessed on: 3 February 2019).

Beyhan, Ş., Gürkan, Ü. (2015, March). Analyzing the relationship between urban identity and urban transformation implementations in historical process: The case of Isparta. *Archnet-IJAR, International Journal of Architectural Research, 9*(1), 158-180. Regular Section. http://www.archnet-ijar.net/index.php/IJAR/article/viewFile/521/pdf_31 (accessed on: 4 January 2019).

Çöl, Ş. (1998). Kentlerimizde Kimlik Sorunu ve Günümüz Kentlerinin Kimlik Derecesini Ölçmek İçin Bir Yöntem Denemesi. Mimar Sinan Güzel Sanatlar Üniversitesi, Fen Bilimleri Enstitüsü, Şehir ve Bölge Planlama Anabilim Dalı, Kentsel Tasarım Doktora Tezi, İstanbul [The Problem of Identity in Our Cities and a Method to Measure the Degree of Identity of Modern Cities. Mimar Sinan Fine Arts University, Institute of Science and Technology, Department of City and Regional Planning, Urban Design PhD Thesis, Istanbul]. https://www.researchgate.net/publication/311653153_TARIHI_KENTLERDE_DIS_MEKAN_KIMLIGI_KILIS_ORNEGI (accessed on: 10 January 2019).

Crankshaw, N. (2008). *Creating Vibrant Public Spaces: Streetscape Design in Commercial and Historic Districts*. 2nd ed. 187-188. Washington: Island Press. https://www.tandfonline.com/doi/abs/10.1080/13574801003638103 (accessed on: 17 February 2019).

Elghonaimy, I. (2011). Impacts of successful experiments in historical preservation projects upon enhancing city urban conditions: Case of Bahrain. *Journal of Al-Azhar University Engineering Sector (JAUES)*

Elghonaimy, I. (2019). Visual pollution phenomena and sensitivity of residences in heritage city centers Case of: Old district of Manama city, Kingdom of Bahrain. *International Journal of Contemporary Urban Affairs*, *3*(1), 175-190. https://doi.org/10.25034/ijcua.2018.4694 (accessed on: 4 March 2019).

Elghonaimy, I., Mohamed, W.M.H. (2019, April) Urban Heat Island in Bahrain: Urban Perspective. *Buildings journal*, *9*(4), 96, 10. ISSN 2075-5309). http://www.mdpi.com/journal/buildings/ https://susy.mdpi.com/user/manuscripts/review_info/871c9b451662f709d4490cdb991bba27 (accessed on: 10 January 2019).

Elwazani, S.A., Lerma, J.L. (2006). Photogrammetric documentation for Muharraq and Manama urban design pilot projects report. Manama, Bahrain: Ministry of Agriculture and Municipal Affairs-United Nations Development Programme. https://www.mun.gov.bh/portal/image/Research/ResearchDoc/UN/ManamaPilotprojectReportA3.pdf (accessed on: 20 December 2018).

Elwazani, S.A., Lerma, J.L. (2006). Recording for urban planning: A case from Manama, Bahrain. XXI International CIPA Symposium, 01-06 October, Athens, Greece (accessed on: 20 April 2019).

Evyapan Gönül Aslanoğlu, Tokol Ayşegül S. (2000). *Landscape design lectures*. METU Faculty of Architecture Press. p81. http://arch.metu.edu.tr/system/files/About/foa_2010.pdf (accessed on: 4 January 2019).

Gehl. J., (2018). Urban Design, how important is it for cities? *EUKN Newsletter*. https://www.eukn.eu/eu-presidencies/danish-eu-presidency/urban-design/urban-design-how-important-is-it-for-cities/ (accessed on: 20 May 2019).

Gürsel, Y. (1996). Değişme Koşullarında Kimlik-Meşrutiyet-Etik, Türkiye Mimarlığı Sempozyumu II: Kimlik-Meşrutiyet-Etik, Ankara Atatürk Kültür Merkezi, 7-8-9 Ekim 1993, TMMOB Mimarlar Odası Yayınları, Ankara. [Conditions change in the identity-Constitutional-Ethics, Turkey Architecture Symposium II: Identity-Constitutional-Ethics, Ankara Atatürk Cultural Center, 7-8-9 October 1993 Chamber of Architects Publications, Ankara]. http://www.archnet-ijar.net/index.php/IJAR/article/viewFile/521/pdf_31 (accessed on: 17 May 2019)

Isin, F.F., Wood, P. K. (1999). *Citizenship and Identity*. 19-24. London: Sage Publications. http://oro.open.ac.uk/15386/ (accessed on: 20 April 2019).

Lynch, K. (1960). *The Image of the City*. Cambridge, Massachusetts, and London, England: the M.I.T. Press, Massachusetts Institute of Technology.

http://www.miguelangelmartinez.net/IMG/pdf/1960_Kevin_Lynch_The_Image_of_The_City_book.pdf (accessed on: 10 Dec 2018).

Madinipour, A. (1996). *Design of Urban Space: An Inquiry into a Socio-Spatial Process*. 117. England: Welly & Sons. https://www.researchgate.net/publication/31701655_Design_of_Urban_Space_An_Inquiry_into_a_Socio-spatial_Process_A_Madanipour (accessed on: 20 April 2019).

Masoud, M. (2010). Compatibility of landscape architecture designs in enhancing urban open spaces of the university campuses, Saudi Arabia. Proceedings of the Second International Conference on Sustainable Architecture and Urban Development, the Center for the Study of Architecture in the Arab Region, Jordan, in collaboration with The University of Dundee, School of Architecture, UK, and Ministry of Public Works and Housing, Jordan, Conference is held under the auspices of CIB, iiSBE and UNEP, 12-14 July, 2010, Amman, Jordan. https://www.preventionweb.net/events/view/14076?id=14076 (accessed on: 27 April 2019).

Nalkaya, S. (2006). Kentsel Dönüşüm ve Kent Kimliği [Urban Conversion and Urban Identity]. http://www.yapi.com.tr/Haberler/kentsel-donusum-ve-kent-kimligi-urban-conversion-and-urban-identity_61111.html (accessed on: 1 March 2019).

Nour Al-Nabi, M. (2012). *The History of Land use and Development in Bahrain*. 1st ed. Vol. 1. Manama, Kingdom of Bahrain: Information Affairs Authority. http://www.housing.gov.bh/en/PublicationsLibrary/6681%20book%20resized.pdf (accessed on: 10 January 2019).

Sirel, A. (2005). Tarihi Kentlerde Kimlik Sorunu: Edirne Örneği I. Uluslararası Mimar Sinan Sempozyumu: Mimar Sinan ve Tarihsel Kimlik, 11–12 Nisan 2005, Trakya Üniversitesi Mühendislik-Mimarlık Fakültesi, Edirne. [The Problem of Identity in Historical Cities: Edirne Case I. International Mimar Sinan Symposium: Mimar Sinan and Historical Identity, 11-12 April 2005, Trakya University, Faculty of Engineering and Architecture, Edirne]. https://www.researchgate.net/publication/311653153_TARIHI_KENTLERDE_DIS_MEKAN_KIMLIGI_KILIS_ORNEGI (accessed on: 29 April 2019)

Smith, C.G. (1999). *State of Bahrain, Encyclopaedia Britannica*. https://www.britannica.com/place/Bahrain#ref45129 (accessed on: 3 June 2019).

SOM Consultancy Project for Bahrain (2007). *Bahrain National Planning Development Strategy*. https://www.som.com/projects/bahrain_national_planning_development_strategy (accessed on: 17 January 2019).

Transport & Regional Affairs Department of the Environment. (2000). *By Design, Urban Design in the Planning System: Towards Better Practice*. p26. Thomas Telford Ltd. https://publications.parliament.uk/pa/cm/cmenvtra.htm (accessed on: 29 April 2019).

World Culture Encyclopaedia (2000). Countries and their cultures. Retrieved from every culture: https://www.everyculture.com/A-Bo/Bahrain.html (accessed on: 20 December 2018).

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A Research on Urban Identity: Sample of Kadıköy District

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ABSTRACT

Cities have idiosyncratic identities composed of the combination of identity elements which are generated by the natural, social or built environments. Due to globalization, neo-liberal approaches and urban branding, cities have lost their unique identities to a significant extent; and resemblances among cities have gradually emerged. Therefore, some research questions occur such as which urban elements are the identity elements that form the unique identity; what are the problems that threaten the identity elements; and which identity features should be emphasized. The aim of this study is to analyze the unique identity and identity elements, and also determine the positive and negative identity features of an urban district. Central Kadıköy, located on the Asian side of Istanbul, was chosen as the experiment area and 117 questionnaires were conducted. The results have revealed that the most frequently defined unique identity element of Central Kadıköy is the Bull Statue; the second one is İskele Square and the third one is the Moda Coast. According to the focal points of this study, relation with nature is an important identity feature that needs to be emphasized; on the other hand, over-urbanization and deterioration of historical identity are the characteristics that should be prevented.

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1. Introduction: Urban Identity

Cities have features and identities of their own similar to every individual. Urban identity is a meaningful entirety that holds unique features in every city; exists in different scales; gets its shape from physical, cultural, socio-economic and historical factors; and is formed by lifestyles of its dwellers (Deniz Topçu, 2011).

Diverge features of cities are explained by the terms *urban identity* and *urban image* (Önem & Kılınçaslan, 2005):

Urban identity is an integrity that is formed by elements that add meaning and value to that city and differentiate that city from others (Birol, 2007). Physical features, natural texture, social structure, historical and cultural heritage define the identity of a city.

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Its geography, history, cultural values, architecture, past civilizations, local traditions, lifestyle, inhabitants, phases from the first settlement to this day, topography, vegetation, geopolitical position, the state of being a southern or western city, maritime and highway connections, the state of being open or closed to other cultures, economic structure, living organisms that it hosts, past occupations and wars, earthquakes, and its state of whether having been a capital city or not are the elements of urban identity. Differences in these features add a unique character to cities (Turan & Yalçıner Ercoşkun, 2017).

On the other hand, *urban image* consists of elements observed in the built environment of a city. In his study based on the definitions of numerous inhabitants of three American cities (Los Angeles, New Jersey and Boston), Lynch (1960/2010) maintained that urban image had five fundamental elements: *paths, districts, borders, nodes and landmarks.*

Elements forming urban identity can be analyzed as being *natural, human, or artefactual* (Önem & Kılınçaslan, 2005).

Natural identity elements are related to natural environment data of the city. These are the features of the city such as general location, topography, climatic conditions, flora and fauna, geological and geomorphological conditions, and aquatic elements. Variations in these features differentiate and define a city, make it unique, and give the city its identity (Kaypak, 2010; Önem & Kılınçaslan, 2005; Turgut et al., 2012).

Human identity elements are the individual and the society. Identity of the individual improves within the environment s/he lives in. Identity elements formed by human environment consist of sub-elements with regard to demographical structure (size, density and structure of population, age groups), corporate structure (political, administrative, juridical, economic), and cultural structure (Önem & Kılınçaslan, 2005).

Furthermore, artefactual identity elements are any arrangements made in a city. The value of a city comes from the memories of its inhabitants. Therefore, the element which exists in the artefactual environment and which holds the highest identity-forming potential is monumental structures and structure groups that have casual significance, and the urban texture they form. Architectural values in a city constitute a remarkable portion of urban identity (Birol, 2007).

When individuals are attached to the place they live, attribute value to this place and make self-sacrifices for these values, that city receives a meaningful identity. For urban dwellers, if the environment they live in is only a place where they earn a living and where certain activities are held; if it does not have meaning except these instrumental features, then that city is determined as an *unidentified city* (Kaypak, 2010).

Duration is needed for urban identity to be formed. As Birol (2007) indicates, Tekeli (1990) sees the formation of urban identity as a historical phenomenon and states that it is actualized by different layers forming a coherent and meaningful integrity in time. Hence, it is difficult to purposefully produce urban identity or replace a new identity instead of one that faced erosion for several reasons. On the other hand, urban identity can redefine itself in time parallel to social, cultural, physical and economic changes that occur by time. Therefore, not the loss but the transformation of urban identity can be noted (Birol, 2007).

In the 1980s, due to globalization and neo-liberal policies, one of the most frequently discussed issues was the loss of urban identity. In order to locate the cities on the map in the global rivalries, urban branding approaches have begun to change, transform and reconsider the urban identity. Due to those interventions, cities had significant losses from their unique identities. Such failures in preserving the unique identity gradually caused resemblances among cities; and as a consequence, they cannot offer diversities to their dwellers. Herein, the necessity of protecting the unique urban identity becomes utterly significant (Aslan & Kiper, 2016; Eraydın, 2016). In this study, the following research questions were examined in order to investigate and preserve the unique urban identity:

- Which urban elements are the identity elements that generate the unique identity of the city?
- What constitutes the unique urban identity?
- What are the problems that threaten the urban identity and/or identity elements?
- What are the features of the unique urban identity and/or identity elements that should be preserved and emphasized?

Kadıköy, located on the Asian side of Istanbul, is a century-old settlement which contains many historical layers and is therefore a palimpsest. It possesses many urban elements which demonstrate the urban identity, and which can be accepted as identity elements. Some of these urban elements are distinctly perceived by the inhabitants; whereas some of them have lost their visibility due to the existing palimpsest pattern. Consequently, a survey was conducted to analyze the existing identity elements of Central Kadıköy and compare them via different user profiles.

1.1 The Aim of the Research

The main aim of this research is to reveal the existing identity elements of the Central Kadıköy. In addition, it is intended to evaluate the variation of the identity elements of Central Kadıköy defined by different groups in a community. For this purpose, the participants were grouped in terms of gender, age, duration of living in Istanbul and frequency of use and analyses were executed with these groups. The other aims of the research are as follows:

- To analyse the unique identity of Central Kadıköy;
- To determine the positive and negative identity features of Central Kadıköy;
- To suggest ideas to urban planners for preserving and emphasizing urban identity.

2. Methodology

The participants, experiment environment, procedure and data analysis of the research will be clarified in this section.

2.1 Participants

This research was conducted with 117 participants that consist of randomly selected citizens while they were dealing with various activities in Central Kadıköy. The table below shows their profile (Table 1).

Table 1. Personal Information of the Participant.

Personal Information	Category	Frequency	(%)
Gender	**Female**	**70**	**59,8**
	Male	47	40,2
Age	**18-25**	**52**	**44,4**
	26-35	37	31,6
	36-45	22	18,8
	46-60	5	4,3
	Over 60	1	0,9
Education Level	Literate	1	0,9
	Primary School	2	1,7
	Secondary School	1	0,9
	High School	19	16,2
	Undergraduate	**80**	**68,4**
	Master's / PhD	14	12,0
Duration of settlement	Less than a year	3	2,6
	1-5 years	16	13,7
	6-10 years	7	6,0
	11-15 years	3	2,6
	More than 15 years	21	17,9
	Born in İstanbul	**67**	**57,3**
Settlement	European Side	23	19,7
	Anatolian Side	**94**	**80,3**
Frequency of visit	Everyday	11	9,4
	Once a week	**26**	**22,2**
	More than once a week	9	7,7
	Once a month	**25**	**21,4**
	More than once a month	20	17,1
	A few times a year	**26**	**22,2**
Intended use	House/residence	5	2,16
	Office/school/course	17	7,35
	Cultural activities (Theatre, concert, exhibitions, etc.)	66	28,57
	Shopping	52	22,51
	Leisure/meeting/chat	**91**	**39,39**

59,8% (n= 70) of the participants, were female and 40,2% (n= 47) of them were male. 44,4% (n= 52) of the participants were 18-25 years of age, 31,6% (n= 37) were 26-35 years of age, 18,8% (n= 22) were 36-45 years of age, and 4,3% (n= 5) were 46-60 years of age. Of the participants 1,7% (n= 2) had primary school education, 0,9% (n= 1) had secondary school education, 16,2% (n= 19) had high school education, 68,4% (n= 80) received graduate level education, and 12% (n= 14) had undergraduate education. According to the data of duration of settlement, 57,3% (n= 67) of the participants were born in Istanbul. Besides, 17,9% (n= 21) of the participants have been living in Istanbul for more than 15 years; and 24,9% (n= 29) of them have been living here for less than 15 years. Of the participants, 80,3% (n= 94) live on the Anatolian side of Istanbul, while 19,7% (n= 23) live on the European side of Istanbul. According to the data of frequency of visit, 22,2% (n= 26) of the participants visit Central Kadıköy a few times a year, 21,4% (n = 25) once a month, and 22,2% (n = 26) once a week. Eventually, participants were asked about their intended use of Central Kadıköy; and they were allowed to specify more than one answer. Hereunder, 91 participants visit Central Kadıköy for leisure, meeting, chatting, and 66 participants do so for cultural activities such as theatre, concert, or exhibitions, while 52 participants visit Central Kadıköy for shopping (Table 1).

2.2 Experiment Environment: The center of **Kadıköy**

Located on the Anatolian side of İstanbul, Kadıköy District is surrounded by Maltepe District in the east, Üsküdar and Ümraniye Districts in the north, The Bosphorus in the west and Marmara Sea in the south (Figure 1).

Figure 1. Kadıköy's Location within Istanbul (Developed by Author).

The historical core that forms Central Kadıköy's settlement is between the surroundings of Haydarpaşa Bay and Moda Cape. Central settlement consists of Osman Ağa and Cafer Ağa Neighborhoods which include historical areas such as Yeldeğirmeni, Moda and Kadıköy Historical Bazaar. The neighborhoods selected for the study are Osman Ağa and Cafer Ağa, which are described as "Central Kadıköy". These neighborhoods and their locations are shown in the figure below (Figure 2).

Figure 2. Settlement of Central Kadıköy (Developed by Author).

Although Kadıköy was founded in 685 B.C., Central Kadıköy had not made much progress until the 17th century; and onwards, essential historical buildings began to be built. Osmanağa Mosque was built in 1612, and Surp Takavor Armenian Church was built in 1721 (Türkmen, 2018). In the 19th century, inhabited by Muslim and Greek populations, Kadıköy was a village which consisted of four neighborhoods with a total of 516 stores and 1915 households (Çelik, 1986/2010). The ferry transportation began in 1846. The grocery stores, bakeries, and taverns which were located on the İskele [Pier] Street, and whose customers were mostly the Greeks, gradually revived the commercial life of Central Kadıköy. By the fire in 1860, 250 buildings -three quarters of Kadıköy- were completely destroyed (Alus, 1995/2019). In the beginning of the 20th century, there were five sea baths (a closed beach established on the sea), 31 pharmacies and 25 bakeries. Haydarpaşa Train Terminal was opened in 1908; and was closed in 2012 after the fire in 2010. Haldun Taner Theater was constructed in 1927 as a marketplace; and was converted into a theater in 1989. The Apollon Cinema, which was built in the beginning of the 20th century, was later named "Hale" and finally "Rexx Cinema". Süreyya Opera House was opened in Bahariye Street in 1927. Kadıköy-Moda tramline was opened in 1934. In the 1950s, there were in total 37

tramlines, 30 of which were in Istanbul and 7 of which were in Kadıköy (Türkmen, 2018). In brief, there are many identity elements in Central Kadıköy that can clearly be perceived by its users or/and have lost their visibility due to the existing palimpsest pattern. Therefore, Central Kadıköy, which contains the historical bazaar, was chosen as the experiment environment for the discussions on urban identity.

2.3 Procedure

117 copies of the survey consisting of open-ended and multiple-choice questions were executed in a week in January 2019 for this study at different hours of different days. The participants were from varying groups in terms of gender, age, or level of education. Before the survey stage, participants were informed in detail about the study. The first section consisted of demographic questions like age, gender and level of education of the participants. Later on, their inhabitancy in Istanbul and place of settlement were asked in addition to their usage frequency and intended use of Central Kadıköy. Questions about gender, age, and inhabitancy in Istanbul and usage frequency provided data for groups for which comparative tables would be formed.

In the next stage, participants were asked questions about urban identity. Especially, they were asked to indicate urban elements that appealed to and affected them in Central Kadıköy. This was an open-ended question that required three elements from the participants. They were free in their answers; there was no guidance. In the following question, unique identity of Central Kadıköy was examined. The researcher formed various options, allowing the participants to indicate more than one choice. Also, the researcher listed positive and negative features of Central Kadıköy and finally asked them to number three features they favored and three features they did not favor in the order of significance. The main purpose of this survey is to understand participants' perception of Central Kadıköy and their positive and negative opinions so as to infer the urban identity of Central Kadıköy.

In the assessment of close-ended questions of the survey, descriptive statistics such as frequency and arithmetic mean were used. Whereas in open-ended ones questioning identity elements, data were carefully examined; same data and data with close meaning were brought together and the frequency values (number of repetitions) were calculated. Frequency values were presented and interpreted in tables.

3. Data Analysis

The participants were asked to define three urban elements such as square, fountain, roof or façade in Central Kadıköy which were noticeable, memorable, and which existed in their mind. In the survey conducted with 117 participants, 269 identity elements in total were determined; yet, those with frequency values less than 5 were excluded from the analysis. The results revealed that the most defined identity element of Central Kadıköy is the Bull Statue by 14,8% (n=40); the second one is İskele Square by 11,5% (n=37) and the third one is the Moda Coast by 8,5% (n=23) (Table 2). As a consequence, the researcher created the identity map of Central Kadıköy with regard to identity data provided (Figure 3).

Table 2. General Assessment of Surveys.

	Category	F	(%)
Identity elements of Central Kadıköy	**Bull Statue**	**40**	**14,8**
	İskele square	31	11,5
	Moda coast	23	8,5
	Tramline	17	6,3
	Haldun Taner Theatre	16	5,6
	Bahariye Street	12	4,4
	Haydarpaşa Terminal	12	4,4
	Beşiktaş-Adalar ferry station	12	4,4
	Süreyya Opera House	10	3,7
	Surp Takavor Armenian Church	7	2,6
	Street of craftsmen	7	2,6
	Cinema Rexx	6	2,2
	Osmanağa Mosque	5	1,8
Unique identity of Central Kadıköy	**Socio-cultural functions and activities**	**95**	**39,2**
	Its history, past	59	24,3
	Commercial functions	38	15,7

	Natural environment and open spaces	19	7,8
	Visual quality of the buildings	16	6,6
	Educational functions	15	6,1
Positive features	1. Its relation with the sea and ferries add a unique identity to Central Kadıköy.	64	54,7
	2. Tramline adds a meaning and identity to Central Kadıköy.	28	23,9
	3. Spending time Central Kadıköy creates a sense of belonging.	22	18,8
Negative features	1. There is no relation with nature; everywhere is full of buildings.	48	41
	2. Kadıköy lost its historical identity with the increasing number of retail shops.	18	15,3
	3. Kadıköy is a comfortless, crowded and insecure environment.	32	27,3

In the next stage, the question "What determines the identity of Central Kadıköy?" was asked, allowing the participants to indicate more than one option. In total, 242 unique identity descriptions were made. 39,2% (n=95) of the participants determined the unique identity of Central Kadıköy by socio-cultural functions and organizations whereas 24,3% (n=59) indicated its history and past, and 15,75% (n=38) mentioned commercial functions (Table 2).

In the following stage, the participants were asked to list three features they liked and three features they disliked in Central Kadıköy in the order of importance. According to 54,7% (n=64) of the participants, creating a unique identity of Kadıköy by the relation with the sea and the ferries was the most positive feature of Central Kadıköy. As the second positive feature 23,9% (n=28) of the participants indicated that Moda-Kadıköy tramline added meaning and identity to Central Kadıköy. As the third positive feature, 18,8% (n=22) of the participants stated that spending time in Central Kadıköy created a sense of belonging (Table 2).

On the other hand, according to 41% (n=48) of the participants, its lack of relation with nature and its over-urbanization was the most negative feature of Central Kadıköy. The second negative feature was the loss of historical identity with the increasing number of retail shops, indicated by 15,3% (n=18) of the participants. The third negative feature was that Kadıköy was a comfortless, crowded and insecure environment with a percentage of 27,3 (n=32) (Table 2).

Figure 3. Identity Map Created by the Researcher Based on the Answers of the Survey (Developed by Author).

In line with the results of the survey, comparative analyses based on gender, age, duration of settlement in Istanbul and frequency of use were established and presented in the tables below.

Table 3. The Analysis of Identity Elements via Variable of Gender.

	Category	F	(%)		Category	F	(%)
Identity elements of central Kadıköy (female/ 70)	**Bull statue**	**24**	**34,2**	**Identity elements of central Kadıköy (male / 47)**	**Bull statue**	**16**	**34,0**
	İskele square	**19**	**27,1**		**İskele square**	**12**	**25,53**
	Moda coast	17	24,2		Moda coast	6	12,76
	Haldun Taner Theatre	13	18,5		Haldun Taner Theatre	3	6,38
	Tramline	9	12,8		Tramline	8	17,02
	Beşiktaş-Adalar ferry station	8	11,4		Beşiktaş-Adalar ferry station	4	8,51
	Bahariye Street	6	8,5		Bahariye Street	6	12,76
	Surp Takavor Armenian Church	6	8,5		Surp Takavor Armenian Church	1	2,12
	Haydarpaşa Terminal	6	8,5		Haydarpaşa Terminal	6	12,76
	Süreyya Opera House	6	8,5		Süreyya Opera House	4	8,51
	Cinema Rexx	5	7,1		Cinema Rexx	1	2,12
	Street of craftsmen	4	5,7		Street of craftsmen	3	6,38
	Osmanağa Mosque	3	4,2		Osmanağa Mosque	2	4,25

As seen in Table 3, the most defined identity element by women and men is the "Bull Statue". It can be seen that 34% of 47 male participants defined Bull Statue, while this percentage was 34.2% for 70 female participants. Another highly-defined identity element was İskele Square of which 27.1% of the female participants and 25.53% of the male participants specified. Moda Coast and Haldun Taner Theatre were not defined with a high percentage by male participants, while the percentages for female participants were 24,2 and 18,5 in respectively (Table 3).

Table 4. The Analysis of Identity Elements via Age Variable.

	Category	F	(%)		Category	F	(%)		Category	F	(%)
Identity elements of central Kadıköy (18-25 years of age/ 52)	**Bull Statue**	**26**	**50**	**Identity elements of central Kadıköy (26-35 years of age / 37)**	Bull Statue	8	21,6	**Identity elements of central Kadıköy (35- 60 years of age/ 27)**	Bull Statue	6	22,2
	İskele square	15	28,84		**İskele square**	**9**	**24,32**		İskele square	7	25,9
	Moda coast	11	21,15		Moda coa	3	5,7		**Moda coast**	**9**	**33,3**
	Haldun Taner Theatre	10	19,23		Haldun Taner Theatre	5	9,6		Haldun Taner Theatre	1	3,7
	tramline	7	13,46		tramline	5	9,6		tramline	5	18,51
	Beşiktaş-Adalar ferry station	6	11,53		Beşiktaş-Adalar ferry station	3	5,7		Beşiktaş-Adalar ferry station	3	11,11
	Bahariye Street	5	9,6		Bahariye Street	2	3,8		Bahariye Street	5	18,51
	Surp Takavor Armenian Church	4	7,6		Surp Takavor Armenian Church	1	1,9		Surp Takavor Armenian Church	2	7,4
	Haydarpaşa Terminal	4	7,6		Haydarpaşa Terminal	2	3,8		Haydarpaşa Terminal	6	22,2
	Süreyya Opera House	5	9,6		Süreyya Opera House	2	3,8		Süreyya Opera House	3	11,11
	Cinema Rexx	4	7,6		Cinema Rexx	2	3,8		Cinema Rexx	0	0
	Street of craftsmen	2	3,8		Street of craftsmen	3	5,7		Street of craftsmen	2	7,4
	Osmanağa Mosque	1	1,9		Osmanağa Mosque	2	3,8		Osmanağa Mosque	2	7,4

As seen in Table 4, identity elements defined according to age groups vary. The identity element, defined by 50% of the 52 participants between the ages 18-25, was the Bull Statue. On the other hand, 24.32% of 37 participants between the ages 26-35 defined İskele Square; and 33.3% of 27 participants at the age level of 35- 60 defined Moda Coast as the identity element of Central Kadıköy (Table 4).

The participants were grouped in three categories based on the duration of settlement in İstanbul: born in İstanbul, living more than 15 years in İstanbul, and living fewer than 15 years in İstanbul.

Table 5. The Analysis of Identity Elements via Variable of Duration of Settlement.

Identity elements of central Kadıköy (Born in İstanbul / 67)				Identity elements of central Kadıköy (More than 15 years / 21)				Identity elements of central Kadıköy (More than 15 years / 28)			
	Category	**F**	**(%)**		**Category**	**F**	**(%)**		**Category**	**F**	**(%)**
	Bull Statue	**22**	**32,8**		**Bull Statue**	**7**	**33,3**		Bull Statue	11	39,2
	İskele square	16	23,8		**İskele square**	**7**	**33,3**		İskele square	7	25
	Moda coast	3	4,4		Moda coast	4	19,4		**Moda coast**	**16**	**57,1**
	Haldun Taner Theatre	14	20,8		Haldun Taner Theatre	1	4,7		Haldun Taner Theatre	1	3,5
	tramline	11	16,4		tramline	2	9,5		tramline	4	14,2
	Beşiktaş-Adalar ferry station	5	7,4		Beşiktaş-Adalar ferry station	0	0		Beşiktaş-Adalar ferry station	7	25
	Bahariye Street	6	8,9		Bahariye Street	4	19,4		Bahariye Street	2	7,1
	Surp Takavor Armenian Church	1	1,4		Surp Takavor Armenian Church	1	4,7		Surp Takavor Armenian Church	5	17,8
	Haydarpaşa Terminal	7	10,4		Haydarpaşa Terminal	3	14,2		Haydarpaşa Terminal	2	7,1
	Süreyya Opera House	4	5,9		Süreyya Opera House	3	14,2		Süreyya Opera House	3	10,7
	Cinema Rexx	2	2,9		Cinema Rexx	2	9,5		Cinema Rexx	2	7,1
	Street of craftsmen	1	1,4		Street of craftsmen	1	4,7		Street of craftsmen	5	17,8
	Osmanağa Mosque	2	2,9		Osmanağa Mosque	0	0		Osmanağa Mosque	3	10,7

As seen in table 5, 32.8% of 67 participants who were born in İstanbul stated that Bull Statue was the identity element of Central Kadıköy. 33.3% of the 21 participants, living more than 15 years in İstanbul defined Bull Statue, and the other 33.3% of the 21 participants defined İskele Square as the identity element of Central Kadıköy. On the other hand, 57,1% of 28 participants, living fewer than 15 years in İstanbul, defined Moda Coast as the identity element (Table 5).

From the data of participants' frequency of use of Central Kadıköy, the highest three values were chosen, and assessments were conducted via these three groups: Once a week, once a month, and once a year.

Table 6. The Analysis of Identity Elements via Variable of Usage Frequency.

Identity elements of central Kadıköy (Once a week/ 26)				Identity elements of central Kadıköy (Once a month / 25)				Identity elements of central Kadıköy (Once a year / 26)			
	Category	**F**	**(%)**		**Category**	**F**	**(%**		**Category**	**F**	**(%)**
	Bull Statue	**9**	**34,6**		**Bull Statue**	**10**	**40**		Bull Statue	3	11,5
	İskele square	6	23,7		İskele square	6	24		**İskele square**	**9**	**34,6**
	Moda Coast	7	26,9		Moda Coast	6	24		Moda Coast	2	7,6
	Haldun Taner Theatre	3	11,5		Haldun Taner Theatre	2	8		Haldun Taner Theatre	2	7,6
	tramline	4	15,3		tramline	4	16		tramline	4	15,3
	Beşiktaş-Adalar ferry station	0	0		Beşiktaş-Adalar ferry station	1	4		Beşiktaş-Adalar ferry station	1	3,8
	Bahariye Street	4	15,3		Bahariye Street	2	8		Bahariye Street	2	7,6
	Surp Takavor Armenian Church	2	7,6		Surp Takavor Armenian Church	1	4		Surp Takavor Armenian Church	0	0
	Haydarpaşa Terminal	1	3,8		Haydarpaşa Terminal	2	8		Haydarpaşa Terminal	4	15,3
	Süreyya Opera House	2	7,6		Süreyya Opera House	3	12		Süreyya Opera House	1	3,8
	Cinema Rexx	0	0		Cinema Rexx	2	8		Cinema Rexx	0	0
	Street of craftsmen	1	3,8		Street of craftsmen	3	12		Street of craftsmen	1	3,8
	Osmanağa Mosque	3	11,5		Osmanağa Mosque	0	0		Osmanağa Mosque	0	0

As seen in the table 6, the Bull Statue was defined as an identity element by 34,6% of 26 participants who visited Central Kadıköy once a week and by 40% of 25 participants who visited central Kadıköy once a month. On the other hand, 34,6% of 26 participants who visited Central Kadıköy once a year indicated İskele Square as an identity element (Table 6).

4. Discussions

The Bull Statue, defined as a unique identity element of Central Kadıköy, is a landmark with an aesthetic design. It is located at the junction point of four roads, three of which are open to vehicle traffic and one of which is open to only pedestrians. The Bull Statue, having a historical significance, is a meeting and waiting point of Kadıköy, and with its imposing appearance, attracts the attention of inhabitants and visitors of Kadıköy.

The second most defined identity element of Central Kadıköy is a square. İskele square hosts several meetings, festivals, open-air exhibitions, and publicity organizations. Moreover, it is a juncture for transportation options such as ferries, subway, and buses. Therefore, its memorability is high.

Moda Coast, the third most defined identity element of Central Kadıköy, is in fact a walking and recreational axis, and can be accepted as both a path and a border. It is noticeable in terms of being a recreation axis connected to the sea.

Kadıköy – Moda tramline, which is another defined identity element, is a nostalgic symbol evoking the history of Kadıköy. The tramline, which was opened in 1934, lost its identity over time and was revived again in 2003. The 2,6 kilometer long tramline, since it provides movement, can be accepted as a path. However, what the participants indicate in this research is the existence of Kadıköy – Moda tramline by means of the red Tatra GT-6 model tramcar. The tramline remained in the minds of the participants with the red tramcars. If data were gathered by cognitive mapping, then tramline could have confronted us as a path. Nevertheless, in this study, Kadıköy – Moda tramline has transformed to a landmark with red tramcars.

Bahariye Street and the Street of Craftsmen, defined as an identity element, are both paths. However, what was intended to be defined here is the functions on these paths. Their memorability depends on neither movements nor connections they provide. Bahariye Street draws attention with its shopping function whereas the Street of Craftsmen does so with the handcrafts, bibliopoles, and unique cafes.

It has been observed that landmarks were plentiful in identity elements. Especially Haldun Taner Theatre, Süreyya Opera House and Cinema Rexx with their meeting, waiting, and cultural functions; Surp Takavor Armenian Church and Osmanağa Mosque, with their religious function; Beşiktaş – Adalar Ferry Station and Haydarpaşa Terminal, with their transportation function, were landmarks indicated as identity elements. The reasons for the memorability of these identity elements can be summarized as follows: Haldun Taner Theatre and Beşiktaş - Adalar Ferry Station are both located reciprocally in the İskele Square and they are singular historical structures that draw the eastern and western borders of the İskele Square as well as being significant meeting and waiting points for the inhabitants and visitors. Süreyya Opera House draws attention as a singular building among the attached constructions. It is the only structure of art among commercial function and the high number of users in its front show that it is an important meeting point. Likewise, the Armenian Church and Osmanağa Mosque draw attention as religious structures surrounded by commercial function. In addition, Haydarpaşa Terminal is a historical transportation building that provided the railway connection between İstanbul and Anatolia between 1908 and January 2012. This magnificent building which can be clearly seen from the coast of Central Kadıköy has been the subject of several movies and documentaries.

There are several characteristics that form the unique identity of Central Kadıköy. Within this study, the participants indicated that unique identity was socio-cultural functions and activities. Significant structures with cultural function such as Haldun Taner Theatre, Süreyya Opera House, Street of Craftsmen, and Cinema Rexx were the identity elements indicated for Central Kadıköy, supporting this conclusion. Moreover, Kadıköy hosts various social and cultural activities, and festivals with many venues such as Moda Stage, Barış Manço House, Duru Theatre, and Oyun Atölyesi (Play Atelier).

The most positive features of Central Kadıköy were described as its relation with the sea and ferries. Relation with nature was observed to positively affect the urban identity. An element of natural water that could be watched, approached, touched, and smelled was seen among the positive identity elements. In addition, inhabitants could watch movements of these ferries, and be involved to this movement by traveling on the ferries. On the other hand, elements of casual life such as tramline, ferries, seagulls and Turkish bagels had a symbolic feature and affected urban identity. Tramline, having been indicated as identity element of Central Kadıköy, enhances this claim. Possessing of Kadıköy by its users and sense of belonging were positively evaluated in terms of urban identity.

The most negative features of Central Kadıköy were its lack of relation with nature and its over-urbanization. It was observed in this research that elements flourishing from natural environment were not indicated within the identity elements. All

the defined identity elements originated from the built environment. Over-urbanization deported urban identity from nature and had a negative impact on identity elements. The increase of commercial buildings in Central Kadıköy led to the disappearance of historical texture, and affected urban identity negatively due to the polychromy, advertising signboards, vivacity and polyphony that was brought by commercial buildings. This has led to an increase in human density and congestion. Crowdedness, congestion and redundant human movement affected urban identity negatively as far as less human density (desolation). Central Kadıköy has been perceived as a comfortless, crowded and insecure environment, and therefore received a negative identity.

According to Kadriye Deniz Topçu (2011), the perception of urban identity varies due to personal characteristics such as age, gender, profession, and income in addition to being whether a tourist or a inhabitant in town. Therefore, even though the two most defined identity elements for Central Kadıköy were the same for both women and men, women later gave priority to identity elements related to recreation and culture. İskele Square and Bull Statue, being meeting and waiting points and transfer nodes in Central Kadıköy, were defined as an identity element by inhabitants living in İstanbul for more than 15 years. On the other hand, Moda coast, which was a recreation and walking axis, was defined as an identity element by inhabitants living in İstanbul for less than 15 years. Bull Statue was defined as an identity element by participants whose usage frequency of Central Kadıköy was more than once a month. It can be stated that participants who often visited Central Kadıköy adopted Bull Statue, which was located at the starting point of Bahariye Street, as a meeting and waiting point. On the other hand, İskele Square, which was the junction point of transportation such as collective taxies, ferries, and buses besides hosting several socio-cultural organizations, was defined by the participants who visited Central Kadıköy once a year. It can be said that participants who visited Central Kadıköy less often adopted İskele Square as an identity element due to using it as a transfer node.

5. Conclusion

In this study, the unique identity and identity elements have been analyzed along with the comparisons of identity elements of different user groups and the determination of the positive and negative identity features of an urban district. The focal points of this research provided in detail in the discussion section are summarized below:

- The urban elements which are perceived most in the existing urban pattern and adopted by inhabitants are identified as identity elements that generate the urban identity.
- The location, historical value and aesthetic features of an urban element strengthen its perception as an identity element.
- Nostalgic symbols of the cities are perceived as identity elements.
- The urban areas where urban identity is perceived most intensively and/or the urban areas which are identified as identity elements are listed as follows:
  - Meeting, waiting, and transfer points and squares that are used frequently,
  - The urban areas with strategic importance throughout the city,
  - The urban areas with elements that differ in image, function and location,
  - Recreation areas where individuals can socialize,
  - Urban areas with special functions such as shopping street, art street etc.
  - Historical buildings,
  - Buildings that differ within the urban order with their function (such as religious, cultural or transportation building), structure, architectural features, or façade details.
- The possibilities and functions that the city offers to its inhabitants are efficient in defining the unique urban identity. For instance; unique urban identity of Central Kadıköy was defined as socio-cultural functions and organizations due to several social-cultural buildings and activities it had.
- Direct relation with the nature, natural identity elements such as forest, sea, coastline or stream, nostalgic symbols of the city, and the inhabitant's sense of belonging are the features that positively affect the urban identity, and so they should be emphasized.
- Not having a relation with the nature and destruction of natural identity elements, over-urbanization, deterioration of historical identity, human density and crowdedness, and security problems are the features that negatively affect urban identity; therefore they should immediately be prevented.
- Urban identity varies depending on the gender variable. For instance; women give priority to socio-cultural featured identity elements.
- Urban identity is influenced by the duration of the settlement. Individuals who live in the city for more than 15 years identify the meeting and waiting areas, transfer nodes and squares that they visit frequently, and the landmarks located in and around these areas as identity elements. On the other hand, individuals who live in the city for less than 15 years identify the recreation areas as identity elements.
- Urban identity is influenced by the usage frequency. Individuals who visit the city more

than once a month determine the landmarks as identity elements while those who visit that city once a year determine nodes or squares that function as meeting and waiting areas, and transfer nodes to be identity elements.

In the light of the general conclusions above, some suggestions for local governments, professionals, and non-governmental organizations are generated and listed below:

- Over-urbanization should be avoided in order not to destroy natural identity elements. Attention should be paid to preserve the relation with the natural environment.
- Traces of historical periods should be restored and preserved, regarding the negative impact of the disappearance of historical texture on urban identity.
- Recently-constructed modern buildings and spaces which are significant in public memory should also be preserved with the same careful approach.
- The prerequisites for the protection of urban identity are to stop the unplanned urbanization, uncontrolled building development and standardization; to eliminate anomalous developments, and to ensure convenience with the existing environmental values in new constructions.
- Missing identity elements should be revived.
- The unique identity elements that begin to depreciate should be preserved, and be transferred to the next generations with the same worth and significance.

In this research, the data relevant to the urban identity and identity elements were obtained by the questionnaire method. Furthermore, cognitive map drawings can further be used in analyzing the identity elements, and also in evaluating the variation of the identity elements defined by different user groups. The influences of transformations and gentrifications on urban identity can be discussed. The extent to which these transformations and gentrifications are known and adopted by the inhabitants can be investigated. As a consequence, this study can be considered as an example of other research studies to be carried out on similar subjects.

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Conflict of interests

The author declare no conflict of interest.

References

Alus, M. S. (2019). *Istanbul Kazan Ben Kepçe [I Left no Stone Unturned in Istanbul.]* (2nd ed.). İstanbul: Kırmızı Kedi Yayınevi. ISBN: 978-605-298-469-7 (*Original work published 1995*) https://books.google.com.tr/books?id=MyOqwgEACAAJ&dq=%C4%B0stanbul+Kazan+Ben+Kep%C3%A7e&hl=tr&sa=X&ved=0ahUKEwiD_Y3fmNDjAhUBqIsKHWLiB_sQ6AEIlzAB

Aslan, S. & Kiper, P. (2016). Kimlik ve bellek sorunu sarmalında kentler: Amasra kenti örneğinde fırsatlar ve tehditlerin değerlendirilmesi. İdealkent Kent Araştırmaları Dergisi [Urban Identity and Memory Problems: An Evaluation of Opportunities and Threats in a Case Study of Amasra], *Journal of Urban Studies,* 7(20), 881-905. Retrieved December 12, 2018, from: http://dergipark.org.tr/idealkent/issue/36856/420018

Birol, G. (2007). Bir kentin kimliği ve Kervansaray Oteli üzerine bir değerlendirme. Arkitekt Dergisi [Identity of a City and a Review on Kervansaray Hotel], *Arkitekt Journal,* 514, 46-54. Retrieved March 11, 2019 from: https://docplayer.biz.tr/6984773-Bir-kentin-kimligi-ve-kervansaray-oteli-uzerine-bir-degerlendirme.html

Çelik, Z. (2010). *19. Yüzyılda Osmanlı Başkenti Değişen İstanbul [The Remaking of Istanbul Portrait of an Ottoman City in the Nineteenth Century]* (3th ed.) (S. Deringil, Trans.). Istanbul: Türkiye İş Bankası Kültür Yayınları. ISBN: 987-605-332-466-9 (*Original work published 1986)* https://www.pandora.com.tr/kitap/degisen-istanbul-19-yuzyilda-osmanli-baskenti/439577

Deniz Topçu, K. (2011). Kent kimliği üzerine bir araştırma: Konya örneği. Uluslararası İnsan Bilimleri Dergisi [A Research on Urban Identity: Sample of Konya], *International Journal of Human Sciences,* 8(2), 1048-1072. Retrieved December 28, 2018, from: https://j-humansciences.com/ojs/index.php/IJHS/article/view/2000

Eraydın, Z. (2016). Kentsel markalaşma stratejilerinin kent belleği ve kent imgesi üzerine etkileri: Ankara örneği. İdealkent Kent Araştırmaları Dergisi [Impacts of Urban Branding Strategies on Urban Identity and Collective Image: The case of Ankara], *Journal of Urban Studies,* 7(20), 830-855. Retrieved December 12, 2018, from: http://dergipark.org.tr/idealkent/issue/36856/420013

Kaypak, Ş. (2010). Antakya'nın kent kimliği açısından irdelenmesi. Mustafa Kemal Üniversitesi Sosyal Bilimler Enstitüsü Dergisi [Examination of Antakya in Terms of Urban Identity], *Mustafa Kemal University Journal of Social Sciences Institute,* 7(14), 373-392. Retrieved January 02, 2019, from:

http://sbed.mku.edu.tr/article/view/1038000647/1038000427

Lynch, K. (2010). *Kent İmgesi [The Image of the City]* (2nd ed.) (İ. Başaran, Trans.). Istanbul: Kültür Yayınları. ISBN: 978-994-488-948-3 (*Original work published 1960)* https://books.google.com.tr/books?id=4qffYgEACAAJ&dq=Kent+%C4%B0mgesi&hl=tr&sa=X&ved=0ahUKEwjV1tTCmdDjAhXLwMQBHbmHDQQQ6AEIKTAA

Önem A. B., & Kılınçaslan İ. (2005). Haliç bölgesinde çevre algılama ve kentsel kimlik. İTÜ Dergisi / A, Mimarlık, Planlama ve Tasarım [Urban Identity and Environmental Perception in Haliç], *ITU Journal / A, Architecture, Planning and Design*, 4 (1), 115-125. Retrieved March 11, 2019, from: http://itudergi.itu.edu.tr/index.php/itudergisi_a/article/viewFile/947/873

Tekeli, İ. (1990). Bir Kentin Kimliği Üzerine Düşünceler, Marmara Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi [Notions on the Identity of a City], *Marmara University Journal of Economic and Administrative Sciences*, 7(1-2), 251-259. Retrieved June 19, 2019, from: http://dosya.marmara.edu.tr/ikf/iib-dergi/1990/22-tekeli.pdf

Turan, S., & Yalçıner Ercoşkun, Ö. (2017). Meydanlardaki isim değişikliklerinin kent belleğine etkisi: Ankara örneği. Süleyman Demirel Üniversitesi Mimarlık Bilimleri ve Uygulamaları Dergisi [The Impact of Name Changes on the Urban Memory: A Case Study on Ankara], *Süleyman Demirel University Journal of Architecture Sciences and Applications*, 2(1), 55-68. https://doi.org/10.30785/mbud.337234

Turgut, H., Yavuz Özalp, A., & Erdoğan, A. (2012). Artvin ilinde doğal çevrenin kent kimliğine etkileri. SDÜ Orman Fakültesi Dergisi [Effects of Natural Environment on Urban Identity in Artvin], *SDU Faculty of Forestry Journal*, 13(2), 172-180. Retrieved January 02, 2019, from: http://dergipark.org.tr/tjf/issue/20899/224424

Türkmen, N. F. (2018). *Kadıköy Kronolojisi [The Chronology of Kadıköy]*. Istanbul: Yeditepe Yayınevi. ISBN: 978-605-2070-47-5 https://www.pandora.com.tr/kitap/kadikoy-kronolojisi/647814

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Mitigating Environmental Sustainability Challenges and Enhancing Health in Urban Communities: The Multi-functionality of Green Infrastructure

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ABSTRACT

Green Infrastructure (GI) facilities have capacity to enhance health and mitigate Environmental Sustainability Challenges (ESC). However, the extent of the mitigation and health benefits is unclear in developing countries. This study examined the impact of GI on ESC and Perceived Health (PH) of urban residents in Lagos Metropolis, Nigeria. Multi-stage sampling technique was used to select 1858 residents of Lagos Metropolis who completed semi-structured questionnaires. Descriptive statistics and chi-square test were used to explore data distributions and assess association of the availability of GI with resident's PH and ESC. Odds ratio with 95% confidence interval (OR;95%CI) were estimated for good health and ESC mitigation. Participants were mostly men (58.9%) and younger than 50 years old (86.3%). Good health (20.5%) and high mitigation of ESC (collection and disposal of waste-52.7% and official development assistance-63.9%) were reported where GI is mostly available. Participants were more likely to report good health (OR:1.40; 95%CI:1.02-1.92) and high mitigation of ESC [water quality (OR:1.42; 95%CI:1.12-1.81) passenger transport mode (OR:1.41; 95%CI:1.06-1.89)] where GI are mostly available. Availability of Green infrastructure is supporting health and mitigating environmental sustainability challenges in the study area. Green infrastructure should be provided in urban areas where environmental sustainability is under threat.

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1. Introduction

Urban sprawl, rapid depletion of forest areas and urban degradation among others has constituted daunting challenges to the environment in recent time. In addition, other more wide-spread land-uses, such as agriculture and industrial activities, have split up valuable landscapes, intensified the use of more energy, fertilizer and water (Jongman, 2003; Gutman, 2007).

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This uncurbed urbanisation and shift from forest systems to mechanized and grey infrastructure laden environment has resulted in the reduction of species' richness and weakened the capacity of ecosystems for natural food production, rejuvenation of human health, maintenance of aquatic and terrestrial resources, regulate micro-climate and air quality in the built environment (Tzoulas *et al.*, 2007; Ward Thompson, 2011). To ameliorate some of these negative consequences of urbanization, strategies of green infrastructure was proposed as solution to tackle environmental sustainability and human well-being especially in rapidly developing urban centres (Pakzada & Osmonda, 2016).

Green infrastructure (GI) is a network of multi-functional green space facilities that can increase connectivity between existing natural areas, encourage ecological coherence while improving the quality of life and well-being. Various research efforts in the built environment are currently geared towards improving ecosystem services through the development of GI (Wolch, Byrne & Newell, 2014; Maes *et al.*, 2015), mostly as a strategy to cope with divers' environmental sustainability challenges. However, in spite of the numerous benefits of the green infrastructure, rapid population growth and changes in land uses have put these facilities under pressure. This poses questions regarding the quantity and types of GI within a neighbourhood/community which are required to mitigate environmental sustainability challenges and enhance human health (Maes *et al.*, 2015; Ward Thompson *et al.*, 2016).

Specifically, empirical evidences show that activities or living around green spaces promotes physical health, psychological well-being, and the general public health of users (Takano, Nakamura, Watanabe, 2002; Wolch *et al.*, 2014; Maes *et al.*, 2015). Exposure to street trees, vegetation, green parks, gardens and other green spaces in urban areas has been connected with multiple health benefits, including reduced mortality, morbidity, mental fatigue, stress, and being more physically active (Takano *et al.*, 2002; de Vries *et al.*, 2003; Maas *et al.*, 2009). Other environment-related benefits range from carbon sequestration, improved air and water quality, control of air pollution to urban heat island effect (Gómez-Mu˜noza, Porta-Gándarab & Fernándezc, 2010).

In addition, studies from Australia (Humpel *et al.*, 2004; Sugiyama, Leslie, Giles-Corti & Owen, 2008) have identified that the quality of parks and landscapes in people's neighbourhood may contribute to more active lifestyles. Similar studies in Netherlands demonstrated the benefits of green spaces near homes and their impact on stress and other patterns of morbidity associated with accessing distance green spaces (Maas, Verheij, Spreeuwenberg & Groenewegen, 2008; Maes *et al.*, 2015). Apart from that, in a recent study among poor black and minority ethnic (BME) communities in the UK, result suggested that health and recreation policy in the UK needs to create more opportunities and green facilities closer to BME communities in order to address the health inequalities experienced by these groups (Roe, Aspinall, & Ward Thompson, 2016; Ward Thompson *et al.*, 2016). Also, availability of green spaces has been reported to enhance factors such as community cohesion and revitalization, improved housing conditions, neighbourhood pedestrian corridors, job availability, and more active youths in productive ventures (Jennings, Baptiste, Jelks & Skeete, 2017).

In general, green infrastructure has the capacity to enhance health and mitigate environmental sustainability challenges (Pakzada & Osmonda, 2016; Jennings *et al.*, 2017), but the aspect or dimension of the challenges, the extent of the mitigation and the effect that these will have on the health of urban residents in developing nations like Nigeria is unclear. The present study therefore, examined the mitigating effects of GI on selected environmental sustainability issues as well as the extent to which availability of GI can enhance self-reported (perceived) health of urban residents in Lagos Nigeria.

2. Methods

2.1. Participants and procedure

A total of 1858 residents of Lagos state, Nigeria participated in this study. Participants were household heads or adult representative who can and were willing to provide the needed information. The sampling frame consisted of the 16 Local Government Areas (LGAs) in Lagos Metropolis. Selected LGAs were sub-divided into participants' neighbourhood defined by Enumeration areas (EAs). In each EA, households were systematically sampled from the list of numbered houses (households) until the required sample size allocated to the EA was reached. Consenting participants (household heads) were given the study questionnaire to complete in English language. Ethical approval (with number MOE/OES/7250/52) for this study was obtained from the Lagos State Ministry of Environment Ethical Review Committee.

2.2. Measures

Demographic information

The study used a semi-structured questionnaire to collect data on participant's demography. Some of the information in the socio-demographic section of the questionnaire included gender, age, family size, marital status, household size,

ethic group, religion, occupation and rank in occupation/income level.

Availability of green infrastructure

Preliminarily, participants were asked to specify if green infrastructure is available in their neighbourhood, the approximate distance of the GI facilities from their location, the type of GI facilities available in their neighbourhood, reasons for visiting GI sites and other related questions. To measure the availability of GI in the neighbourhood; the literature was used to ascertain GI types (Takano *et al.*, 2002; Wolch *et al.*, 2014) while the authors verified and documented all available GI types in the study area. The available GI in the study areas were grouped into four namely: Green spaces GI, Tree features GI, Water features GI and other spaces green infrastructure *(consisting of green infrastructure facilities that cannot be categorised into any of the first three groups).* Respondents were required to identify from the list of GIs in each group, all GI facilities present in their neighbourhood.

2.2.3. Health Benefits of Green Infrastructure (HBGI).

The Health Benefits of Green Infrastructure (HBGI) was measured with the 12-item General Health Questionnaire (GHQ) developed by Goldberg. This (GHQ) instrument is a measure of current mental health of participants. The GHQ has been previously used and validated in different nations, settings and cultures with very reliable results (Goldberg, 1992). Originally, the questionnaire was developed as a 60-item instrument but shortened versions of the questionnaire were later developed in response to some criticisms of the instrument. Such versions include GHQ-30, the GHQ-28, the GHQ-20, and the GHQ-12. The scale assessed recent experiences of respondents on a particular symptom or behaviour. Each item is rated on a 4-point scale *(1=less than usual, 2=no more than usual, 3=rather more than usual and 4=much more than usual)* (Golderberg et al., 1998). Examples of items include "been able to enjoy your normal day to day activities", "been able to concentrate on what you're doing" etc (Supplementary Table S1). In the present study, HBGI of the participants was measured in relation to whether or not they visit green infrastructure sites over the past 4 weeks. This selected duration (one-month) was considered sufficient to assess the health impacts of GI on users based on recommendations of the British Heart Foundation National Centre (Milton, Bull & Bauman, 2011). The 12-item GHQ has been used to assess health benefits in some settings with reasonable coefficient of reliability. In particular, Montazeri et al. (2003) reported an alpha coefficient of 0.87 for the GHQ scale in a study conducted in Iran, to assess the reliability and validity of the 12-item instrument.

2.2.4. Environmental Sustainability Challenges

Five facets measuring general environmental sustainability challenges were extracted from 27 facets of sustainability in a Report of the Joint UNECE/OECD/Eurostat working group on statistics for sustainable development. (UNECE/OECD/Eurostat, 2008). The five facets were selected (for their relevance to the issues of environmental sustainability in the study setting) for the present study: Air Pollution (APL), Collection and Disposal of Waste (CDW), Water Quality (WQT), Passenger Transport Mode (PTM) and Official Development Assistance (ODA). Literature informed indicators or items relevant to the selected facets were used to measure sustainability challenges related to the facet (SCI, 2012; Müller et al., 2009; Bonaiuto et al., 2003). Participants were required to show their agreement or disagreement to the 21 indicators (arranged within 5 facets) on a 7-point scale ranging from 1 = *strongly disagree* to 7 = *strongly agree*. Examples of indicators include "residents' health in this neighbourhood is threatened by air pollution" and "residents have access to clean drinkable water in this neighbourhood" (Supplementary Table S2).

2.3. Data Management and Statistical Analysis Techniques

Initially, frequency tables and cross tabulations were used to explore the distribution of the data and to enhance data cleaning/editing. Total raw score was calculated for each group of the GI type [i.e Total Green spaces GI (TGRS), Total Tree Features GI (TTRF), Total Water Features GI (TWTF) and Total Other Spaces GI (TOTH)] as the sum of GI facilities available in the area as indicated by the respondent. A GI availability index was created using the total raw score as a percentage of the total GI facilities listed in the group. An overall GI index was created for each respondent as a total of the group specific indices. The four groups of GI availability indices (TGRS, TTRF, TWTF, TOTH), were categorized into 3 using the mean (M) and the standard deviation (SD) as follows: *poorly available* (if score < M+SD), *moderately available* (if M-SD $\leq$ score $\leq$ M+SD), and *mostly available* (if score > M+SD). Similarly, the total score for the Health Benefits of GI (HBGI) was categorized into 3 using the mean (M) and the standard deviation (SD) as follows: *poor health* (if score < M+SD), *fair health* (if M-SD $\leq$ score $\leq$ M+SD), and *good health* (if score > M+SD). Each facet of the Environmental Sustainability Challenges were also categorized

into 3 using the mean (M) and the standard deviation (SD) as follows: *low mitigation* (if score < M+SD), *moderately mitigation* (if M-SD ≤ score ≤ M+SD, and *high mitigation* if ≥ M+SD (Issa & Bayeiwu, 2006; Akpa & Bamgboye, 2015).

The Chi-square test was used to assess whether level of mitigation of the environmental sustainability challenges and good health benefit were associated with availability of GI facilities in the study area. The categories of the HBGI and each facet of the Environmental sustainability challenges were further dichotomized by combining the two upper categories so as to form only two outcomes. Binary logistic regression analysis (Adjusted and unadjusted analyses) was performed to estimate the odds ratio (OR) and their respective 95% Confidence Intervals (CI) for factors associated with HBGI and each facet of environmental sustainability challenges. Covariates were included in the logistic regression depending on whether or not, there significant in the bivariate (Chi-sqaures) test. All analysis were performed using IBM SPSS statistics version 20 with significance level set at 5%.

3. RESULTS

3.1. **Participants' Demography and Social** Factors

More than half (58.9%) of the participants are men while 41.1% of them are women. Participants are mostly younger than 50 years (86.3%) and approximately 57% of them are married. Although most of them had completed tertiary education (59.9%), 12% of them did not complete secondary education. About 43% of the participants were self-employed, 28.2% were employees of public/private organizations while 11.9% of them are unemployed (Table 1).

Table 1: Socio-demographics Characteristics of Respondents (N=1858)

Variables		Frequency	Percentage (%)
Sex			
	Male	1095	58.9
	Female	763	41.1
	Total	1858	
Current Age			
	<30	699	37.6
	30-49	905	48.7
	>=50	222	11.9
	Not Reported	32	1.7
	Total	1858	
Marital Status			
	Never Married	711	38.3
	Married	1049	56.5
	Formerly Married	85	4.6
	Not Reported	13	0.7
	Total	1858	
Household Size			
	<=4	1063	57.2
	>4	786	42.3
	Not Reported	9	0.5
	Total	1858	
Ethnic Group			
	Yoruba	1298	69.9
	Others	559	30.1
	Not Reported	1	0.1
	Total	1858	
Highest Educational Qualification			
	Less than Secondary Education	223	12.0
	Secondary Education	516	27.8
	Tertiary Non Degree Education	604	32.5
	Tertiary Degree/Postgraduate Education	510	27.4
	Not Reported	5	0.3
	Total	1858	
Occupation			
	Unemployed	221	11.9
	Self Employed	797	42.9
	Private/Public Employees	524	28.2
	Students & Others	316	17.0
	Total	1858	
Rank in Occupation/Income Level			
	Junior Staff	478	25.7
	Senior Staff	275	14.8
	Management Staff/Business Owners	597	32.1
	Not Reported	508	27.3
	Total	1858	

3.2. **Factors associated with participants'** perceived Health Benefits of Green Infrastructure

The proportion (20.5%) of participants reporting perceived good health was significantly higher among those reporting that GI (overall) is mostly available in their neighbourhood. Also, the proportion of younger participants, aged <50 years (85.1%) reporting perceived good health was significantly higher compared to participants aged > 50 years (14.8%). Participants who have completed tertiary education (58.8%) reported perceived good health than those who did not have more than secondary school education (41.1%). Poor health was mostly reported among participants who were not yet married (23.6%) (Table 2).

Table 2: Factors associated with perceived Health Benefits of Green Infrastructure

		% with poor health	% with fair health	% with good health	P
Green Space GI					0.04
	Poorly Available	33(17.0)	119(61.3)	42(21.6)	
	Moderately Available	206(22.7)	559(61.5)	144(15.8)	
	Mostly Available	136(19.3)	421(59.9)	146(20.8)	
Tree Feature GI					0.59
	Poorly Available	120(20.3)	369(62.4)	102(30.7)	
	Mostly Available	255(21.0)	730(60.1)	230(69.3)	
Water Feature GI					0.48
	Moderately Available	220(19.7)	691(61.8)	208(81.6)	
	Mostly Available	57(22.9)	145(58.2)	47(18.4)	
Other Spaces					0.22
	Moderately Available	204(21.6)	580(61.4)	160(48.2)	
	Mostly Available	171(19.8)	519(60.2)	172(51.8)	
Overall GI index					0.03
	Poorly Available	72(25.5)	174(61.7)	36(12.8)	
	Moderately Available	131(20.1)	403(61.9)	117(18.0)	
	Mostly Available	172(19.7)	522(59.8)	179(20.5)	
Participants' Demography					
Sex					0.29
	Male	221(20.3)	679(62.4)	189(56.4)	
	Female	168(22.1)	447(58.7)	146(43.6)	
Current Age					0.01
	<30	173(24.9)	405(58.3)	117(35.3)	
	30-49	164(18.2)	572(63.5)	165(49.8)	
	>=50	45(20.3)	128(57.7)	49(14.8)	
Marital Status					0.009
	Never Married	166(23.6)	410(58.3)	127(38.4)	
	Married	194(18.5)	666(63.5)	189(57.1)	
	Formerly Married	27(31.8)	43(50.6)	15(4.5)	
Household Size					0.34
	<=4	233(22.0)	644(60.8)	182(54.5)	
	>4	156(19.9)	475(60.7)	152(45.5)	
Ethnic Group					0.98
	Yoruba	270(20.9)	787(61.0)	234(69.9)	
	Others	119(21.3)	338(60.6)	101(30.1)	
Highest Educational Qualification					0.04
	Less than Secondary	41(18.5)	128(57.7)	53(15.9)	
	Secondary	97(18.9)	332(64.7)	84(25.2)	
	Tertiary Non Degree	138(22.9)	348(57.7)	117(35.1)	
	Tertiary Degree/Postgrad	112(22.1)	316(62.3)	79(23.7)	
Occupation					0.17
	Unemployed	59(26.8)	119(54.1)	42(12.5)	
	Self Employed	149(18.7)	506(63.6)	140(41.8)	
	Private/Public Employees	113(21.6)	318(60.7)	93(27.8)	
	Students & Others	68(21.9)	183(58.8)	60(17.9)	
Rank in Occupation					0.32
	Junior Staff	92(19.3)	296(62.1)	89(38.0)	
	Senior Staff	56(20.4)	180(65.5)	39(16.7)	
	Management Staff	135(22.7)	355(59.6)	106(45.3)	

Note: *percentages were calculated based on the row total of the the 3 categories of each facet of the Environmental Sustainability challenges*
GI*-Green Infrastructure*

The results of the logistic regression analyses are presented as adjusted and unadjusted odd ratios (OR and aOR) with their respective 95% confidence intervals (CI) in Table 3. The odds of reporting good health was higher for participants in areas where GI (overall) are mostly available (OR: 1.40; 95%CI: 1.02-1.92). Similarly, the odds of reporting good health was higher among participants that are aged 30-49 years (OR: 1.49; 95%CI: 1.17-1.90) compared to participants that are less than 30 years of age. Being formerly married (OR: 0.47; 95%CI: 0.28-0.81) and aged 30-49 years (OR: 1.39; 95%CI: 1.06-1.61) are independently associated with perceived health benefits of GI (Table 3).

Table 3: Association of Green Infrastructure with Perceived Health benefit of GI

Factors		Odds of Good Health (95% CI)	Adjusted Odds of Good Health (95% CI)
Green Space GI			
	Poorly Available	-	-
	Moderately Available	0.70(0.47-1.05)	0.64(0.42-0.99)
	Mostly Available	0.86(0.56-1.30)	0.72(0.46-1.13)
Overall GI Index			
	Poorly Available		
	Moderately Available	1.36(0.98-1.89)	1.39(0.98-1.96)
	Mostly Available	1.40(1.02-1.92)	1.37(0.95-1.97)
Current Age			
	<30	-	
	30-49	1.49(1.17-1.90)	1.39(1.06-1.61)
	>=50	1.30(0.90-1.89)	1.24(0.83-1.85)
Highest Educational Qualification			
	Less than Secondary	-	
	Secondary	0.97(0.65-1.46)	0.85(0.55-1.32)
	Tertiary Non Degree	0.76(0.52-1.13)	0.67(0.44-1.02)
	Tertiary Degree/Postgrad.	0.80(0.54-1.19)	0.67(0.44-1.03)
Marital Status			
	Never Married	-	-
	Married	1.36(1.08-1.72)	1.19(0.91-1.55)
	Formerly Married	0.66(0.41-1.08)	0.47(0.28-0.81)

3.3. Adjusted Effects of Green Infrastructure on Environmental Sustainability Challenges and **Participant's Health**

Proportion reporting high mitigation of CDW (52.7%) and ODA (63.9) challenges were significantly higher in areas were GI (overall) are mostly available. High mitigation was equally reported for WQT (48.0%) and ODA (65.0%) challenges where tree features and green spaces GI were respectively mostly available in the study area (Table 4).

Table 4: Association between Availability of GI and Environmental Sustainability challenges

Green Infrastructure	Air Pollution % reporting High mitigation	*P*	Collection and Disposal of waste % reporting High mitigation	*P*	Water Quality % reporting High mitigation	*P*	Passenger Transport Mode % reporting High mitigation	*P*	Official Development Assistance % reporting High mitigation	*P*
Green Space GI		0.16		0.52		0.80		0.71		0.03
Poorly Available	97(50.0)		102(52.6)		91(46.9)		111(57.2)		114(58.8)	
Moderately Available	474(52.1)		470(51.6.2)		437(48.0)		524(57.8)		520(57.4)	
Mostly Available	327(46.2)		384(54.2)		340(48.0)		387(55.0)		457(65.0)	
Tree Feature GI		0.89		0.25		0.007		0.78		0.76
Poorly Available	288(48.7)		327(55.3)		281(47.5)		333(56.6)		360(61.2)	
Mostly Available	610(50.0)		629(51.5)		587(48.1)		689(56.7)		731(60.2)	
Water Feature GI		0.33		0.33		0.38		0.99		0.49
Moderately Available	565(50.4)		583(52.0)		556(49.6)		647(58.1)		688(60.0)	
Mostly Available	119(48.0)		139(56.0)		112(45.2)		144(58.1)		159(64.1)	
Other Spaces		0.77		0.82		0.21		0.05		0.30
Moderately Available	473(49.9)		505(53.3)		468(49.4)		532(56.4)		563(59.7)	
Mostly Available	425(49.2)		451(52.2)		400(46.3)		490(57.0)		528(61.4)	
Overall GI Index		<0.001								
Poorly Available	158(55.8)		130(45.9)	0.02	142(50.2)	0.45	172(61.2)	0.23	161(57.3)	0.02
Moderately Available	323(49.5)		364(55.8)		312(47.9)		365(56.2)		372(57.3)	
Mostly Available	417(47.5)		462(52.7)		414(47.2)		485(55.6)		558(63.9)	

Note: *percentages were calculated based on the row total of the 3 categories of each facet of the Environmental Sustainability Challenges*
GI- *Green Infrastructure*

The results of the logistic regression further show that the odds of reporting high mitigation of water quality challenges was higher in areas where tree feature GI are mostly available (OR: 1.42; 95%CI: 1.12-1.81) than where they are poorly available. Similarly, the odds of reporting high mitigation of challenges relating to passenger transport mode (transportation systems in the cities) was higher in neighbourhoods where other spaces GI are mostly available (OR: 1.41; 95%CI: 1.06-1.89) than where they are moderately available (Table 5).

Table 5: Association of Green Infrastructure with Mitigation of Environmental Sustainability Challenge

	Odds of APL (95% CI)	Odds of CDW (95% CI)	Odds of WQT (95% CI)	Odds of PTM (95% CI)	Odds of ODA (95% CI)
Green Space GI					
Poorly Available					-
Moderately Available					0.92(0.58-1.45)
Mostly Available					0.96(0.59-1.55)
Tree Feature GI					
Poorly Available			-		
Mostly Available			1.42(1.12-1.81)		
Other Spaces					
Moderately Available				-	
Mostly Available				1.41(1.06-1.89)	
Overall GI					
Poorly Available	-	-			-
Moderately Available	0.44(0.29 -0.68)	1.08(0.75-1.54)			1.34(0.91-1.99)
Mostly Available	0.63(0.41- 0.97)	1.29(0.91-1.82)			1.42(0.94-2.16)

GI-*Green Infrastructure,* ***APL-****Air Pollution,* ***CDW-*** *Collection and Disposal of waste,* ***WQT-****Water Quality,* ***PTM-*** *Passenger Transport Mode,* ***ODA-****Official Development Assistance*

4. Discussions

In this study, we report comparative results for the mitigating effects of GI on selected environmental sustainability variables. We as well measured the extent of self-reported improvement on health of urban residents in Lagos Metropolis, in relation to the availability and access to green infrastructure. This study was premised on the literature (Takano et al., 2002; Tzoulas *et al.*, 2007; Pakzada & Osmonda, 2016; Ward Thompson *et al.*, 2016; Jennings *et al.*, 2017) addressing links between access to GI facilities and health, particularly levels of reported good health in areas with green spaces and poor health induced by environmental sustainability challenges in urban centres. We explored potential mitigating effects of GI on selected environmental sustainability issues as well as the extent to which availability of GI can enhance self-reported (perceived) health of urban residents in Lagos Nigeria.

First, we attempted to discover the socio-demographical factors associated with perceived health benefits of GI facilities so as to isolate the independent capacity of GI to impact health in the study area. A number of socio-demographic characteristics of the study participants were found to impact perceived health. For instance, health benefit of GI was reported mostly among younger participants and individuals who have completed tertiary education. In particular, more of participants aged 30-49 years reported health benefit of GI than any other age group. Actually, the links between socio-economic and demographic status and health are well ascertained (e.g. Dunn & Hayes, 2000; Ross, 2000; Tzoulas *et al.*, 2007). The 30-39 years age group consists of energetic and productive individuals compared to ages below or above the range. Consequently, participants within this age group have higher opportunity and possibly better emotional and social orientations to enjoy access to green infrastructure facilities in their neighbourhood compared to other individuals (Conedera et al., 2015). When controlled for age, sex, marital and socio-economic status, among older adults, past studies have provided evidence of a positive association between self-reported health (including longevity) and green space (de Vries *et al.*, 2003; Takano *et al., 2002*).

Although we also observed that married participants and those who were formerly married reported health benefit of GI than those who had never being married, we are unable to provide any immediate explanation for this. However, this result seems to suggest that people are more likely to benefit from their recreation/outdoor activities and access to GI facilities when they engage in such activities with other people than doing so alone. This finding is not alien to the literature as previous studies have reported evidences of the positive effect gained by nearby green spaces since this provides a place of contact between people and nature, increases the potential of meeting neighbours, and enables social well-being and social cohesion (Kuo, Bacaicoa & Sullivan 1998; Wolch *et al.*, 2014).

Furthermore, we found that availability of street trees, green garden and parks, private garden or allotment, fountain, streams and other GI facilities even when available moderately, have provided improved health to residents in the study area. The link between green spaces and health has been demonstrated in a number of studies. For instance, Payne et al. (1998) found that park users reported better general perceived health, higher levels of activity and improved ability to relax than non-users. Also, it has been shown in previous studies that those who visit green spaces at least once a month in winter reported significantly better health than those who refused to visit green spaces (Ward Thompson *et al.*, 2016). In fact, research has also been focussed on the effect of nearby trees and grass visible from apartment buildings on residents' effectiveness in facing major life problems including intra-family aggression by enhancing mental health (Kuo & Sullivan, 2001; Tzoulas et al., 2007). However, it must be acknowledged that, even though these and other related studies were controlled for possible confounders, it is impossible to completely exclude the possibility of confounding factors; especially in relation to lifestyle that may inform health in neighbourhoods/communities near parks.

The impact of green infrastructure on environmental sustainability in the present setting is unclear. Participants in the present study reported high mitigation of environmental sustainability challenges (including collection and disposal of waste, poor water quality, passenger transport mode and official development assistance) in neighbourhoods where green infrastructure are moderately or mostly available. Previous studies in this area/direction confirmed that green infrastructure helps to maintain a healthy urban environment by using trees and other vegetations to screen and providing clean air, improving the urban climate and preserving the delicate balance of nature (Tzoulas *et al.*, 2007; Nowak, Crane & Stevens, 2006). It is therefore not surprising to found in the present study, that participants from areas where tree feature GI are mostly available where 42% more likely to report high mitigation of water quality challenges than where they are poorly available. There are many evidences in the literature supporting our findings. Tavakol-Davani et al. (2015) reported that GI facilities can reduce the amount of storm water entering urban drainage systems and thus improve

water quality at urban centres. Many other studies have also evaluated the roles of various types of GI on storm water management, carbon sinks and emission controls (Liu, Chen & Peng, 2014; Liu *et al.*, 2015). The roots of some trees have also been reported to serve as filters for underground water and thus improving the quality of drinking water. (Dong, Guo & Zeng, 2017). Also, participants from areas where other spaces GI (such as non green open spaces, non green Parks, school yards etc) are mostly available were 41% more likely to report high mitigation of challenges relating to passenger transport mode (transportation systems in the cities) than where they are moderately available. Similarly, recent studies have advocated for more street trees to create tree corridors where pedestrian can treck or cycle to various destination in the city (Singh, 2016; Thaiutsa *et al.*, 2008). This measure has been suggested as a mitigation strategy against environmental challenges related to passenger transport mode or the transportation systems within the cities. The approach is seen as a sustainable transport mode that can eventually encourage sustainability in the cities.

5. Strengths and limitations

The present study is a strong and comprehensive contribution to literature on the impact of GI availability on health and environmental sustainability challenges from this study setting. The epidemiological nature of the study provides a great opportunity for targeted policy and intervention strategies. The major limitation of this study may be the self-administered nature of the questionnaires which might have introduced some biases. Also, the GHQ-12 version of the General Health Questionnaire adopted for this study may equally provide a limitation to the robustness of our findings as we considered no criteria in our selection of the GHQ-12 among several other versions (GHQ-60, GHQ-30, GHQ-28, GHQ-20) of the scale. There were no local studies with which to immediately compare our findings, this may confer some contextual limitations on the conclusion of the present study.

6. Conclusion

Green infrastructure plays an integral role in supporting health in the urban communities studied, through the provision of environmental, social and economic benefits. There are also evidences that green infrastructure mitigates environmental sustainability challenges in the urban communities studied. In particular, green infrastructure improves the liveability of the built environment through maintenance of ecosystems, storm water reduction, improved air, water and habitat quality and enhances landscape connectivity for urban flora and fauna.

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Conflict of Interest

The authors have no conflict of interest to report for this research.

References

Akpa, O. M., & Bamgboye, E. A. (2015). Correlates of the Quality of life of Adolescents in families affected by HIV/AIDS in Benue State, Nigeria. *Vulnerable Child Youth Studies, 10*(3), 225–242. https://doi.org/10.1080/17450128.2015.1066914

Bonaiuto, M., Fornara, F., & Bonnes, M. (2003). Indexes of perceived residential environment quality and neighbourhood attachment in urban environments: A confirmation study on the city of Rome. *Landscape and Urban Planning, 65,* 41-52. https://doi.org/10.1016/s0169-2046(02)00236-0

Conedera, M., Biaggio, A. D., Seeland, K. Morettia, M., & Home, R. (2015). Residents'preferences and use of urban and peri-urban green space in a Swiss mountainous region of the Southern Alps. *Urban Forestry and Urban Greening 14*, 139–147. https://doi.org/10.1016/j.ufug.2015.01.003

de Vries, S. ,Verheij, R. A., Groenewegen, P. P., & Spreeuwenberg, P. (2003). Natural environments—healthy environments? *Environmental Planning 35,* 1717–1731. https://doi.org/10.1068/a35111

Dong, X., Guo, H., & Zeng, S. (2017). Enhancing future resilience in urban drainage system: Green versus grey infrastructure, *Water Research, 4*(7), 12-33, https://doi.org/10.1016/j.watres.2017.07.038

Dunn, J. & Hayes, M. (2000). Social inequality, population health, and housing: a study of two Vancouver neighbourhoods. *Soc. Sci. Med. 51*, 563–587. https://doi.org/10.1016/S0277-9536(99)00496-7

Gutman, P. (2007). Ecosystem services: foundations for a new rural urban compact. *Ecological Economics, 62*(3–4), 383–387. https://doi.org/10.1016/j.ecolecon.2007.02.027

Goldberg, D. (1992). *General Health Questionnaire (GHQ-12*). Windsor, UK: NFER-Nelson. www.sciepub.com/reference/128768

Golderberg, D., & Williams, P. (1988). *A user's guide to the General Health questionnaire.* Windsor, UK: NFER-Nelson. www.scirp.org/(S(351jmbntvnsjt1aadkposzje))/reference/ReferencesPapers.aspx?

Gómez-Mu˜noza, V. M., Porta-Gándarab, M. A., & Fernándezc, J. L. (2010). Effect of tree shades in urban planning in hot-arid climatic regions.

Landscape and Urban Planning. 94, 149–157. https://doi.org/10.1016/j.landurbplan.2009.09.002

Humpel, N., Owen, N., Iverson, D., Leslie, E., & Bauman, A. (2004). Perceived environment attributes, residential location, and walking for particular purposes. *Am. J. Prev. Med. 26*(2), 119–125. https://doi.org/10.1016/j.amepre.2003.10.005

Issa, B. A., & Baiyewu, O. (2006). Quality of life of patients with Diabetes mellitus in a Nigerian Teaching Hospital. *Hong Kong Journal of Psychiatry, 16*, 27–33 academicjournals.org/journal/JDE/article-full-text-pdf/A5CF86C46816

Jennings, V., Baptiste, A. K., Jelks, N. O., & Skeete, R. (2017). Urban Green Space and the Pursuit of Health Equity in Parts of the United States. *International Journal of Environmental Research and Public Health, 14,* 1432-1449. https://doi.org/10.3390/ijerph14111432

Jongman, R. H. G. (2003). Ecological networks and greenways in Europe: Reasoning and Concepts. *Environmental Sciences, 15*(2), 173-181. assets.cambridge.org/97805218/27768/frontmatter/9780521827768_frontmatter.pdf

Kuo, F. E., Bacaicoa, M., & Sullivan, W. C. (1998). Transforming inner-city neighborhoods: trees, sense of safety, and preference. *Environment and Behaviour*, *30*, 28–59. https://doi.org/10.1177/0013916598301002

Kuo, F. E., & Sullivan,W. C., (2001). Aggression and violence in the inner city. Effects of environment via mental fatigue. *Environment and Behaviour, 33,* 543–571. https://doi.org/10.1177/00139160121973124

Liu, W., Chen, W., & Peng, C. (2014). Assessing the effectiveness of green infrastructures on urban flooding reduction: A community scale study. *Ecology Modelling, 291,* 6-14. https://doi.org/10.1016/j.ecolmodel.2014.07.012

Liu, W., Chen, W., & Peng, C. (2015). Influences of setting sizes and combination of green infrastructures on community's stormwater runoff reduction. *Ecology Modelling, 318*, 236-244. https://doi.org/10.1016/j.ecolmodel.2014.11.007

Maas, J., Verheij, R.A., Spreeuwenberg, P., & Groenewegen, P. P. (2008). 'Physical activity as a possible mechanism behind the relationship between green space and health: a multilevel analysis'. *BMC Public Health, 8,* 206. https://doi.org/10.1186/1471-2458-8-206

Maes, J., Barbosa, A., Baranzelli, C., Zulian, G., Silva, F. B., Vandecasteele, I. et al. (2015). More green infrastructure is required to maintain ecosystem services under current trends in land-use change in Europe. *Landscape Ecology, 30,* 517–534. https://doi.org/10.1007/s10980-014-0083-2

Milton, K., Bull, F.C., & Bauman, A. (2011). Reliability and validity testing of a single-item physical activity measure. *British Journal of Sports Med., 45,* 203–208. doi: https://doi.org/10.1136/bjsm.2009.068395

Montazeri, A., Harirchi, A. M., Shariati, M., Garmaroudi, G., Ebadi, M., & Fateh, A. (2003). The 12-item General Health Questionnaire (GHQ-12): translation and validation study of the Iranian version. *Health and Quality of Life Outcomes, 1*(66), 1-14. https://doi.org/10.1186/1477-7525-1-66

Müller, M. M., Kals, E., & Pansa, R. (2009). Adolescents' emotional affinity toward nature: A cross-societal study. *Developmental Processes, 4*(1), 59-69. http://citeseerx.ist.psu.edu/viewdoc/citations;jsessionid=F42C17D3468186157F77C8716652BF3F?doi=10.1.1.465.963

Nowak, D., Crane, D., & Stevens, J. (2006). Air pollution removal by urban trees and shrubs in the United States. *Urban Forestry and Urban Greening, 4,* 115–123. https://doi.org/10.1016/j.ufug.2006.01.007

Pakzada, P., & Osmonda, P. (2016). Developing a sustainability indicator set for measuring green infrastructure performance. *Procedia - Social and Behavioural Sciences*, *216,* 68–79. https://doi.org/10.1016/j.sbspro.2015.12.009

Payne, L., Orsega-Smith, B., Godbey, G., & Roy, M. (1998). Local parks and the health of older adults: results from an exploratory study. *Parks Recreation, 33*(10), 64–71. https://pdfs.semanticscholar.org/2537/2b65cb1c15a253d43304e43cbe56e14ae9b7.pdf

Roe, J., Aspinall, P. A., & Thompson, C. W. (2016). Understanding Relationships between Health, Ethnicity, Place and the Role of Urban Green Space in Deprived Urban Communities. *International Journal of Environmental Research and Public Health, 13,* 681-702. https://doi.org/10.3390/ijerph13070681

Ross, C. (2000). Walking, exercising and smoking: Does neighbourhood matter? *Soc. Sci. Med. 51,* 265–274. https://doi.org/10.1016/s0277-9536(99)00451-7

Singh, R. (2016). Factors affecting walkability of neighborhoods. *Procedia - Social and Behavioural Sciences 216,* 643 – 654. https://doi.org/10.1016/j.sbspro.2015.12.048

Sugiyama, T., Leslie, E., Giles-Corti, B., & Owen, N., (2008). Associations of neighbourhood greenness with physical and mental health: do walking, social coherence and local social integration explain the relationships? *Epidemiology and Community Health,* 62, (e9). https://doi.org/10.1136/jech.2007.064287

Sustainable Cities International (2012). Indicators for Sustainability. How cities are monitoring and evaluating their success. Retrieved September 16, 2018, http://www.grida.no/graphicslib/detail/dp

sirframework-for-state-of-environment reporting_379f#.

Takano, T., Nakamura, K., & Watanabe, M. (2002). Urban residential environments and senior citizens' longevity in mega-city areas: the importance of walkable green space. *Epidemiology and Community Health, 56* (12), 913–916. http://dx.doi.org/10.1136/jech.56.12.913

Tavakol-Davani, H., Burian, S. J., Devkota, J., & Apul, D. (2015). Performance and cost-based comparison of green and gray infrastructure to control combined sewer overflows. *Sustainable Water and Built Environment, 2*(2), 19-27. https://ascelibrary.org/doi/full/10.1061/JSWBAY.0000805

Thaiutsa, B., Puangchit. L., Kjelgren, R., & Arunpraparut, W. (2008). Urban green space, street tree and heritage large tree assessment in Bangkok, Thailand. *Urban Forestry and Urban Greening 7,* 219–229. https://doi.org/10.1016/j.ufug.2008.03.002

Tzoulas, K., Korpela, K., Venn, S., Yli-Pelkonen, V., Ka´zmierczak, A., Jari Niemela, J., & James, P. (2007). Promoting ecosystem and human health in urban areas using Green Infrastructure: A literature review. *Landscape and Urban Planning*, *81*, 167–178. https://doi.org/10.1016/j.landurbplan.2007.02.001

UNECE/OECD/Eurostat (2008) Working Group on Statistics for Sustainable Development titled Measuring Sustainable Development. Retrieved January 10, 2019, http://unstats.un.org/unsd/broaderprogress/pdf/Measuring_sustainable_development%20(UNECE,OECD,Eurostat).pdf Pp 33-34.

Ward Thompson, C., Aspinall, P., & Montarzino, A. (2008). The childhood factor: adult visits to green places and the significance of childhood experience. *Environment and Behaviour 40*(1), 111–143. https://doi.org/10.1177/0013916507300119

Ward Thompson, C. (2011). Linking landscape and health: The recurring theme. *Landscape and Urban Planning, 99*, 187–195. https://doi.org/10.1016/j.landurbplan.2010.10.006

Ward Thompson, C. Aspinall, P., Roe, J., Robertson, L., & Miller, D. (2016). Mitigating Stress and Supporting Health in Deprived Urban Communities: The Importance of Green Space and the Social Environment. *Int. J. Environ. Res. Public Health*, *13,* 1-24. https://doi.org/10.3390/ijerph13040440

Wolch, J, R., Byrne, J., & Newell, J. P. (2014). Urban green space, public health, and environmental justice: The challenge of making cities 'just green enough.' *Journal Landscape and Urban Planning, 125*, 234–244. https://doi.org/10.1016/j.landurbplan.2014.01.017

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Supplementary Tables

Table S1: Health Benefits of Green Infrastructure

Item	Less than usual (%)	No more than usual (%)	Rather more than usual (%)	Much more than usual (%)
Been able to concentrate on what you're doing?	238(12.9)	339(18.3)	671(36.3)	602(32.5)
Lost much sleep over worry?	922(49.8)	480(25.9)	306(16.5)	142(7.6)
Felt that you are playing a useful part in things?	160(8.6)	354(19.1)	791(42.8)	545(29.5)
Felt capable of making decisions about things?	141(7.6)	273(14.8)	779(42.1)	655(35.5)
Felt constantly under strain?	791(42.8)	545(29.5)	327(17.7)	187(10.1)
Felt you couldn't overcome your difficulties?	717(38.8)	581(31.4)	310(16.8)	242(13.1)
Been able to enjoy your normal day to day activities?	214(11.6)	256(13.8)	821(44.4)	559(30.1)
Been able to face up to your problems?	188(10.2)	305(16.5)	764(41.3)	593(32.0)
Been feeling unhappy or depressed?	770(41.6)	598(32.3)	292(15.8)	190(10.3)
Been losing confidence in yourself?	790(42.7)	669(36.2)	229(12.4)	162(8.7)
Been thinking of yourself as a worthless person?	788(42.6)	624(33.7)	285(15.4)	153(8.3)
Been feeling reasonably happy, all things considered?	160(8.6)	242(13.1)	736(39.8)	713(38.4)

Table S2: General Environmental Sustainability

STATEMENT	Strongly disagree (%)	Disagree (%)	Undecided (%)	Agree (%)	Strongly agree (%)
Air pollution (APL)					
Residents' health is threatened by air pollution in this neighbourhood	417(22.5)	581(31.3)	314(16.9)	319(17.2)	223(12.0)
The air in this neighbourhood is clean i.e free from automobiles, industry or farming pesticides and chemicals pollution.	570(30.7)	377(20.3)	381(20.5)	396(21.3)	130(7.0)
The heavy traffic in this neighbourhood is very annoying	292(15.7)	733(39.5)	360(19.4)	288(15.5)	182(9.8)
Air pollution caused by cars is very heavy in this neighbourhood	333(18.0)	739(39.8)	336(18.1)	269(14.5)	178(9.6)
Air pollution caused by industry is very noticeable in this neighbourhood	191(10.3)	557(30.1)	430(23.2)	401(21.7)	271(14.6)
Air pollution caused by pesticides and chemicals used in farming is very noticeable in this neighbourhood	123(6.6)	285(15.4)	476(25.6)	494(26.6)	478(25.8)
Collection and disposal of waste (CDW)					
Residents in this neighbourhood avoid dirtying the environment	159(8.6)	289(15.6)	265(14.3)	773(41.6)	370(19.9)
In this neighbourhood, residents find personal solution to their waste management	136(7.3)	226(12.2)	326(17.6)	824(44.4)	344(18.5)
We have proper provision for waste disposal and management in this neighbourhood	125(6.7)	217(11.7)	287(15.5)	848(45.7)	379(20.4)
Residents make good use of the neighbourhood waste collection effort effectively	138(7.4)	205(11.0)	289(15.6)	834(44.9)	390(21.0)
Water quality (WQT)					
Residents have access to clean drinkable water in this neighbourhood	136(7.3)	245(13.2)	411(22.1)	638(34.4)	426(23.0)
Available water in this neighbourhood is not clean enough for drinking	137(7.4)	327(17.6)	618(33.3)	404(21.8)	370(19.9)

Many residents have to make personal bore holes to get clean drinkable water in this neighbourhood	350(18.9)	648(34.9)	422(22.7)	261(14.1)	175(9.4)
The underground water in this neighbourhood is contaminated	151(8.1)	264(14.2)	649(35.0)	368(19.8)	424(22.8)
Passenger transport mode (PTM)					
The quality of public transportation is poor in this neighbourhood	162(8.8)	285(15.4)	289(15.7)	526(28.5)	584(31.6)
In this neighbourhood, there are specific and adequate provisions for cycling routes.	663(35.9)	539(29.2)	341(18.5)	221(12.0)	82(4.4)
There are enough tree corridors under which people can treck on sunny days	706(38.2)	469(25.4)	352(19.1)	223(12.1)	96(5.2)
If you like cycling, this neighbourhood is not suitable	720(39.0)	693(37.5)	217(11.8)	128(6.9)	88(4.8)
Many residents in this neighbourhood support the use of public transport (such as public bus) instead of constantly driving their private cars	92(5.0)	124(6.7)	259(14.0)	689(37.3)	682(36.9)
Official development assistance (Government support) (ODA)					
Government support for green infrastructure facilities is noticeable in this neighbourhood	464(25.1)	611(33.1)	472(25.6)	200(10.8)	99(5.4)
The Local Government in this area should strive to increase greenery in all neighbourhoods	41(2.2)	115(6.2)	223(12.1)	898(48.6)	569(30.8)
Government to ensure sustainability as the future of all environmental projects	38(2.1)	81(4.4)	162(8.8)	806(43.7)	759(41.1)
Government should regularly orient citizens about benefits of green infrastructure	42(2.3)	57(3.1)	133(7.2)	703(38.1)	911(49.3)

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Socio-Psychological Effects of Urban Green Areas: Case of Kirklareli City Center

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ABSTRACT

Urban open green spaces have an important role in today's health problems and the necessity for the urban health to create green areas that have high accessibility for all citizens. Acceleration of urbanization in recent decades decays balance of green areas and impervious surfaces in cities because of rent seeking society. The main problem associated with adequate provision of green area and fair access for residents. According to the "Spatial Planning Policy Framework" the green area per capita in urban area (10 m²), Kırklareli doesn't provide green space per capita. The aim of the study is to identify the socio-psychological effects of the green areas in the Kirklareli. Objectives of the study is to determine the correlation between socio- psychological criterias with green space accesiblity, per capita and visiting time and to discuss the findings rationale. The following hypothesis was proposed "urban green areas on inhabitants have positive effects on human health, quality of life and stress". In this context, a survey was conducted to analyze the socio-psychological effects of urban green spaces in Kirklareli. Expected outcome of the study is that green areas are associated with positive emotions, green space per capita and accessibility that can assist to decrease inequalities in health.

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1. Introduction

Historically, from the beginning of the 20th century, there has been an awareness of the importance of green space in urban planning (Verheij et al., 2008). However, the population growth rates have been increasing exponently, natural and semi-natural areas (agriculture, pasture, forest and urban green areas) are under pressure in urban fringe (Martinez-Gonzalez et al., 2001). As a result of this situation, green space per capita and accessibility to urban green space decrease, therefore presence of open and green areas is needed more than ever before. Due to the adverse effects of the decline in the areal size of urban green space in the urban areas, studies on the effects of green areas on urban health have started to be carried out (Cicea and Pîrlogea, 2011).

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Today, physical inactivity has become a global health problem that the World Health Organization emphasizes as a risk factor. Although life-styles vary from region to region, in some countries the rate of inactivity is about 80%. However, regular physical activity is associated with heart disease, diabetes, breast-cancer risk, mental health and quality of life. For that reason, it is vital that all nations should provide the opportunity of safe and accessible environments to be physically active in their daily lives in order to improve their personal and social health to ensure their social, economic and cultural development. In this context, the world health organization has identified the draft global vision for 2018-2030 as "more active people for a healthier world". One of the action plans to achieve this goal has been identified as strengthening the access chances of all individuals of all ages to high quality public and open green areas, recreation areas, sports facilities (WHO, 2018). Urban green areas are considered as the main environment providing opportunities for various physical activities for cities (Koohsari et al., 2015).

In the zoning regulation, green areas are defined as green spaces that include the playpen, playground, resting, walking, picnic and recreational areas, which are reserved for society to benefit (Planned Areas Zoning Regulation, 2017). The urban green and open areas are designed in a certain hierarchy according to their variety and qualities. These can be listed as; children's playground, small scale neighborhood unit park, neighborhood and urban parks, regional parks and national parks. The neighborhood parks could have children's playgrounds, parks, sports areas and passive green space activities (Ersoy, 2015). Urban open and green areas should be accessible to pedestrians at neighborhood and subscales (Ersoy, 2015; Aydemir, 2004). The areal size should be suitable for their intended use, and they should be ergonomic, safe, aesthetic and accessible to all layers of society, (Aydemir, 2004). The level of physical activity, asphalt roads, playgrounds (Kaczynski et al., 2008), woodland areas, water elements (Kaczynski et al., 2008; Schipperijn et al., 2013), lighting, walking and cycling routes, bicycle parking, beautiful landscape, the size of the green area (Schipperijn et al., 2013), safety (Maas et al., 2009).

Studies on the positive effects of open and green areas on individuals gain importance (Martinez-Gonzalez et al., 2001). The quality of life in cities mostly depends on the availability of attractive and accessible green areas. There is a common consensus on the necessity of urban green areas for the health and happiness of individuals (Cicea and Pîrlogea, 2011).

Green area and health has a positive relationship (Ersoy, 2015; Maas et al., 2009). Studies have pointed out that relation between green areas and human health affect quality of life and stress-reduction. The use of green areas contributes positively to coping with stress and green areas play a key role in designing healthy environments in cities. In the last thirty years, it has been exposed that the healing effect of urban green areas has been found in terms of public health and it has been observed that there is a positive correlation to decline stress and mental exhaustion between how often individuals use green areas and how much time they spend in green areas (Grahn et al., 2003; Nielsen and Hansen, 2007; Stigsdotter et al., 2010).

In general, the benefits of green areas;

Socially; provides social interaction (Ersoy, 2015; Cicea and Pîrlogea, 2011; Maas et al., 2009; Verheij etal., 2008; Aydemir, 2004; Oktay, 1998), opportunity to meet with nature (Kremer et al., 2016), physical activity (Verheij et al., 2008), promotes public health (Ersoy, 2015; Cicea and Pîrlogea, 2011), stress-reducement (Honold et al., 2016 ; Ersoy, 2015; Cicea and Pîrlogea, 2011; Verheij et al., 2008; Kaplan, 2001), prevents from depression (Bratman et al., 2015), helps to get rid of fatigue (Verheij et al., 2008), aesthetic to the built environment (Cicea and Pîrlogea, 2011; Aydemir, 2004), activities for recreation and entertainment and the chance to escape the city life (Aydemir, 2004).

Moreover it has many ecological benefits. These benefits include oxygen production, dust and bacteriological treatment of the atmosphere (Ersoy, 2015; Cicea and Pîrlogea, 2011), reduction of gases causing air pollution (Ersoy, 2015), shading areas, noise reduction (Cicea and Pîrlogea, 2011), climatic control (Shishegar, 2014; Cicea and Pîrlogea, 2011, Aydemir, 2004; Oktay, 1998), preservation and maintenance of local vegetation (Cicea and Pîrlogea, 2011, Aydemir, 2004; Oktay, 1998), and regulation of ecosystem services (Shishegar, 2014, Roberts et al., 2019).

Green areas add economic identity to the city (Cicea and Pîrlogea, 2011; Aydemir, 2004), attracts investment, increases the value of urban space and housing (Cicea and Pîrlogea, 2011), makes positive contributions such as attracting tourists (Cicea and Pîrlogea, 2011; Aydemir, 2004). The interaction between man and nature is beneficial for the health and happiness of individuals (Fuller and Gaston, 2009; Roberts et al., 2019). Being in natural environments positively affects blood pressure, cholesterol and stress reduction, and has a positive specific relationship with mental health and cardiovascular diseases (Bedimo-Rung et al., 2005). Interaction with nature can take place by watching a natural landscape or by being in a

natural environment (Huynh et al., 2013). Urban green areas in cities have many benefits in terms of health (Fuller and Gaston, 2009; Roberts et al., 2019; Lee and Maheswaran, 2010; Alcock et al., 2014; Soga and Gaston, 2016) and well-being (Fuller and Gaston, 2009; Soga and Gaston, 2016; Roberts et al., 2019), and it is found that living in a close proximity to the green area has a reducing effecton heart and respiratory diseases (Villeneuve, et al., 2012; Tamosiunas et al., 2014) and there is a positive relationship between the higher level of physical activity (Cohen et al., 2007; Toftager et al., 2011) and the frequency of green areas usage (Cohen et al., 2007; Akpınar, 2014; Nielsen and Hansen, 2007). The potential benefits from open green areas are becoming vital in cities where green areas are threatened by urbanisation (Dallimer et al., 2011).

There are various evidences that areal size of green space near residential area is clearly correlated with physical activity (Bancroft et al., 2015; Paquet et al., 2013) among individuals with low stress levels (Fan et al., 2011), mental health (Gascon et al., 2015; Van den Berg, et al., 2015) happiness, and general health (Maas, 2006; Verheij et al., 2008). The areal size of green space also has a positive influence on loneliness, social support, especially for children, the elderly and individuals with low level economic status (Maas et al., 2009). There is a positive link between how often the green areas are visited, how much time is spent and the healing / decrease of stress and depression symptoms (Bedimo-Rung et al., 2005).

It is determined that there was a direct relationship with the green area in terms of quality of life and health (Grahn et al., 2003; Nielsen and Hansen, 2007; Stigsdotter et al., 2010). People living in the green area more than 1 kilometer closeness use open and green areas to do excercises less than the individuals living in the green area less than 300 meters (Toftager et al., 2011). It is determined that the individuals who has an accessibility to green areas within a radius of 1-3 kilometers feel themselves healthier compared to individuals living far away from green areas (Maas, 2006; Verheij et al., 2008). Spatial planning regulation states that urban open and green spaces such as playgrounds, sports areas, and urban parks should be planned with in the service area of 500 meters, which is accessible unit for pedestrians (Spatial Planning Regulation, 2014).

%92 of the total population lives in urban areas according to the Turkish Statistical Institution data of 2018. Therefore, urban areas have dense population which lead destructive pressure on urban green areas throughout the cities. The aim of this study is to determine the socio-psychological effects of the functions and areal size of open green areas in Kirklareli, and to discuss the current status after the spatial analysis. In other words, the functional uses of the green areas and their spatial qualification were measured in Kırklareli. In the considerations of urban open and green areas, although the open and green area standard in the current zoning legislation green area per capita should be 10 m², it was calculated in the present settlement areas in Kırklareli are less than 10 m² and the green areas are not sufficient and qualified in terms of size and reinforcement. In this context, the aim of this study is to analyze the possible psychosocial consequences and to develop socio-spatial approaches.

In this context, the following correlations were examined;

- the proximity and the visiting time in the green area
- the frequency of green space usage and mood
- satisfaction of size of green area and the frequency of green area usage and visiting time

The following hypotheses were tested.

- The frequency of use and spending time rises as the areal size of green area increases
- Emotionally positive feelings rise as the time spending increases

User profiles and needs of these urban green areas were defined by the survey study. Spatial analysis were conducted and spatial suggestions were developed to increase the use of green areas in the city center by considering the user satisfaction and needs.

2. Study Area

Kirklareli Province is located in transition area of the southern Thrace Region of Turkey. The province has borders with Bulgaria to the north, Black Sea to the east, Istanbul to the southeast, Tekirdag to the south and Edirne to the west (Figure 1). It has a land area of 6550 km² with an altitude of 203 meters above the sea level, a continental climate system and a total population of 351 684 (TURKSTAT, 2016). Kırklareli city center, which is chosen as the study area, is located in the central part of Kırklareli province between 41 ° 50 'North Latitudes and 27 ° 20' East Longitude (Figure 1). The amount of build up area in 2018 is about 868 hectares.

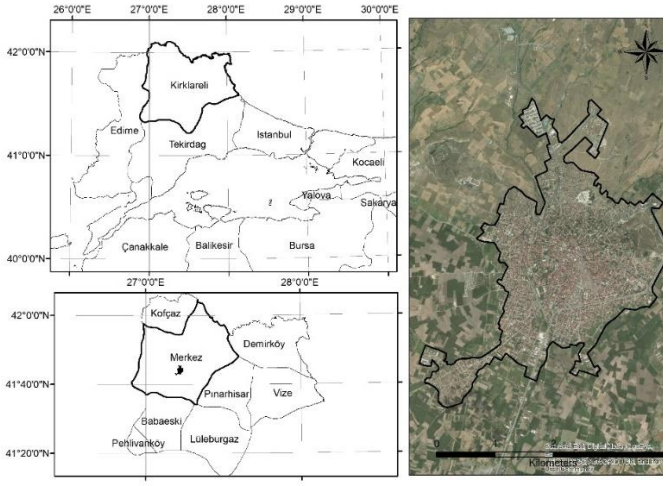


Figure 1. Location Map of Study Area.

Kirklareli Central District has a populated by 79 093 people according to 2018 census data. The population of the central district has been growing steadily since 1965 (Figure 2).

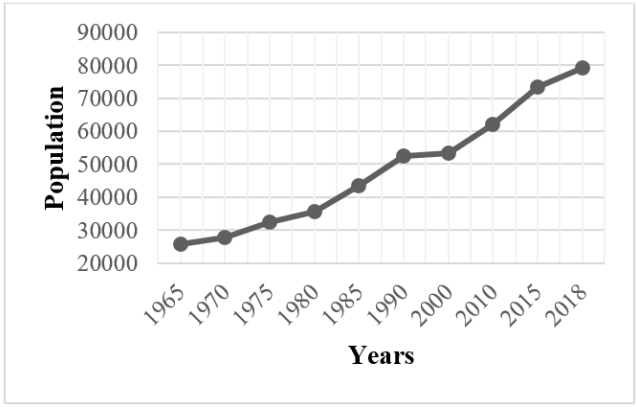


Figure 2. Population Growth by Years.

Total open and green areas were determined as 64.705 hectares within the built up areas in Kırklareli city center of 2018. The distribution of these areas in urban space is shown in Figures 3 and 4. Urban green and open areas compromised; the city's parks, squares, district sports areas, children's playgrounds and active open and green areas available to public use as specified in the spatial plans production regulation. The amount of open and green areas per capita was calculated as 0.8 m^2. In this respect, it is seen that open and green areas per capita is 10 m^2 which is specified in the same regulation.

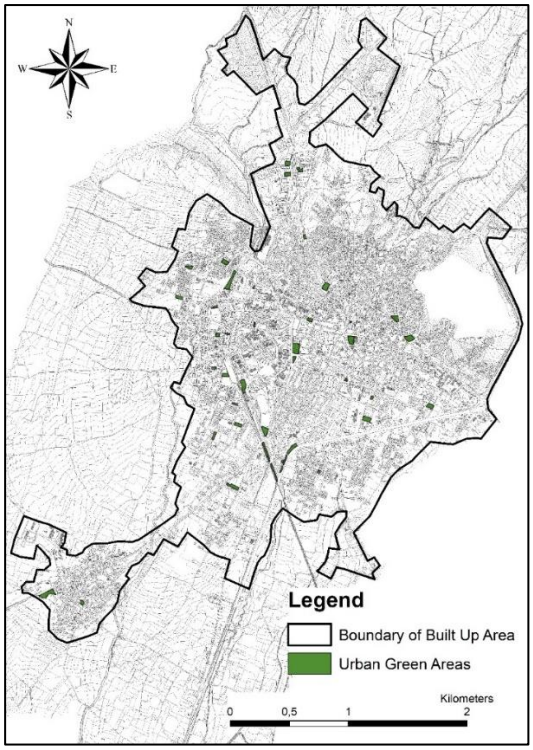


Figure 3. Urban Green Areas.

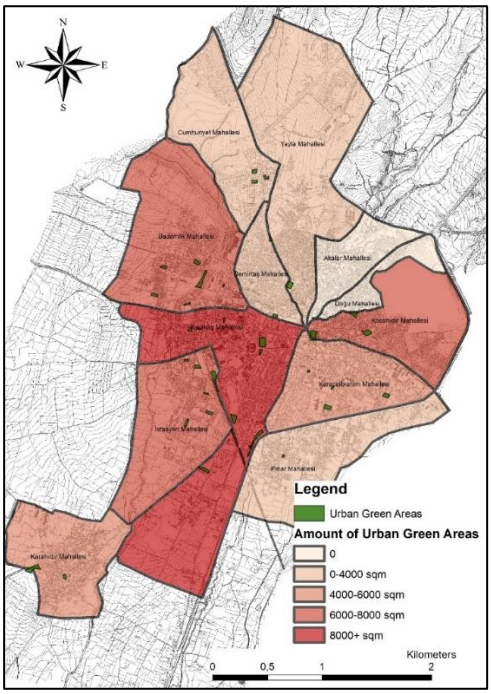
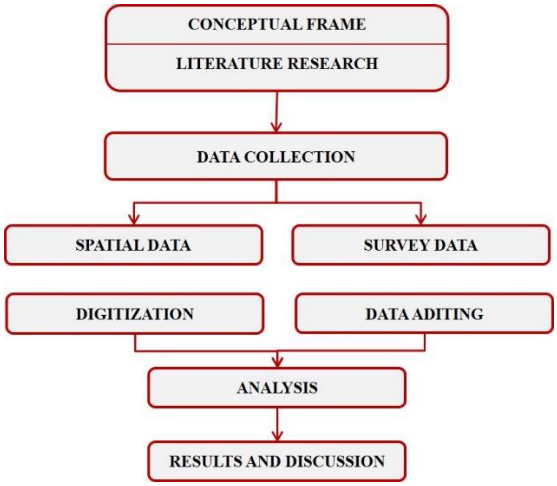


Figure 4. Amount of Urban Green Areas by Neigbourhood.

3. Method

The study consists of three sections; literature study, survey application and spatial analysis (Figure 5). In the conceptual framework of the study, the literature has been extensively investigated. As a result of this study, survey questions were prepared. Frequency, crosstab and Pearson Correlation analyses were applied to the survey questions. The flowchart of the study is shown below.



Figurel 5. Flowchart of the study.

3.1 Survey Application

A survey was conducted to define the socio-psychological effects of urban green areas and user satisfaction. The population of Kırklareli city center is 77226 in 2017 based on Turkey Statistical Institute (TSI) Address Based Population Registration System Data (ABPRS). Accordingly, the distribution of population and number of surveys by neighborhoods is as follows (Table 1). A total of 770 survey were applied in 4% sample size and 95% confidence level (Table 1, App. 1). The number of surveys to be conducted in neighborhoods was determined in proportion of population.

Table 1: Kırklareli City Center Neighborhood Population and Number of Surveys Applied in the Scope of the Study.

#	Neighbourhood	2017 – Population Data	Number of Surveys	%
1	Akalar	3802	36	5
2	Bademlik	6987	66	9
3	Cumhuriyet	3539	35	5
4	Demirtaş	3589	36	5
5	Doğu	1292	18	2
6	İstasyon	10111	98	13
7	Karacaibrahim	12151	118	15
8	Karahıdır	2278	18	2
9	Karakaş	16510	185	24
10	Kocahıdır	4762	46	6
11	Pınar	5988	57	7
12	Yayla	6217	57	7
Total		**77226**	**770**	**100**

The highest and lowest survey percentanges in the neighborhoods are Karakas with 24% of surveys, Karacaibrahim with 15% of surveys and Dogu and Karahidir with 2% (Figure 6).

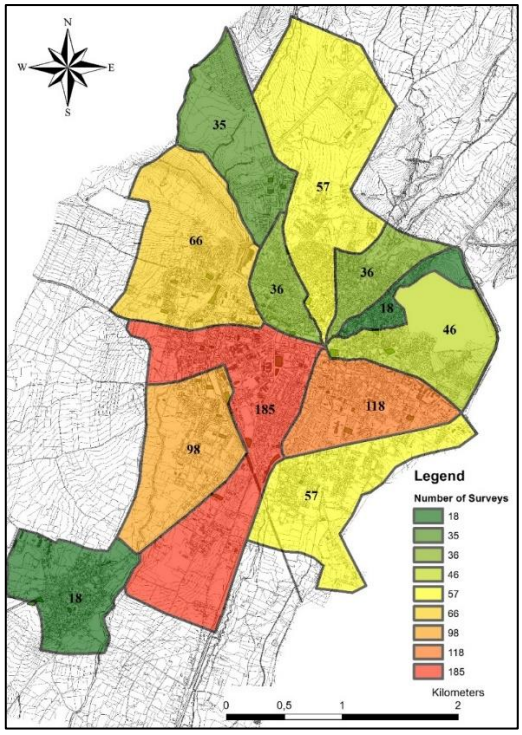


Figure 6. Number of Surveys per Neigbourhood.

The questions were prepared within the scope of the study were grouped in three main category, in accordance with the literature review presented in the previous chapters. In the first category, questions were intended for evaluating users' profile. In the second category, questions were inquired about the duration of the existing park use, the purposes of use, the demands for close proximity to the parks and the factors affecting the positive / negative effects of the park use. In the third category, questions comprised about health problems and emotions. The questions in the survey were generally arranged on a closed-ended and triple Likert scale. According to the answers given to the survey about health problems, participants with mental disorders were the main focus group of the study. The other participants were evaluated as control group.

The responses of the main group and the control group were evaluated in frequency and Pearson correlation analysis. Pearson Correlation analysis is a method of statistical evaluation used to examine the strength of a relationship between two, numerically measured, continuous variables. Pearson Product Moment correlation coefficient (abbreviated as p in text) is the measurement of correlation and ranges (depending on the correlation) between +1 and -1. +1 indicates the strongest positive correlation possible, and -1 indicates the strongest negative correlation possible (for the correlation coefficients between 0.00 and 0.25 means "too weak", the value between 0.26 and 0.49 means "weak", the value between 0.50 and 0.69 means "medium", between 0.70 and 0.89 the value means "high" and the

value between 0,90 and 1,00 means "too high"). But only correlations that are significant at sigf < 0.05 or 0.01 should be considered (abbreviated as sigf in text) (Zaid, 2015:4-12)

3.2 Spatial Analysis

In the study, GIS and Remote Sensing technologies were used for spatial representation of green areas. Aerial photographs have a significant place in urban planning and are an important tool for meeting the changing economic, social and recreational needs of the society and for monitoring of urban development. In order to get fast and accurate results in physical planning studies, it is necessary to use aerial photographs frequently. Therefore, as a quick method and providing reliable information, aerial photographs lead to interpretations for the future in various disciplines.

In this context, satellite images of 2015, obtained from the General Directorate of Mapping, were rectified according to the relevant external orientation parameters and made available for operation (Fig. 7). These maps were digitized for analyzing green areas distribution in the city. As a result of this qualitative and qualitative inquiries made about the use of urban green spaces and related spatial formation processes. Survey data were entered into the GIS environment and spatial representations were made.

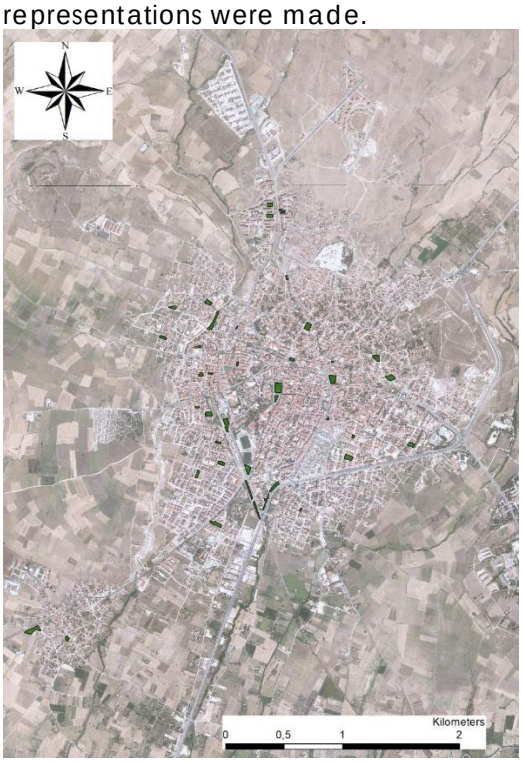


Figure 7. Urban parks in Kırklareli city center

4. Results and Reviews

Survey undercovered the current mood of the users, the mood in the park and the present health problems were determined.196 people responded positively to the question whether they had a health problem (See App-1, Question no: 36) (Table 2, Figure 8).

Table 2. Frequency Analysis of Survey

Disease	Frequency	Ratio (%)
Tension	6	3
Respiratory	57	29
Psychological	31	16
Orthopedic	51	26
Internal	36	18
Others	15	8
Total	196	100

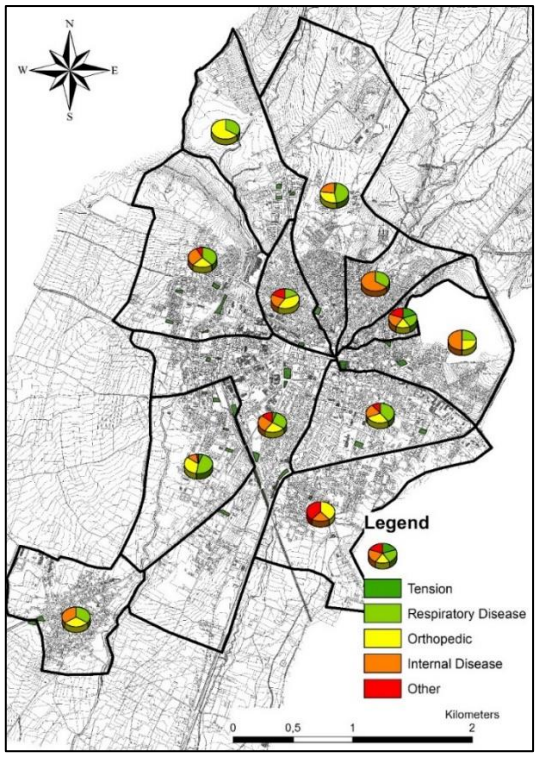


Figure 8. Disease reates by Neigbourhood

According to the survey data, users (31 persons) who stated that they had psychological disorder were identified as the main group to determine the user profile, user satisfaction and socio-psychological effects of the parks and the other users defined as the control group (739 persons). In the following sections, the results will be reported in detail in the frequency tables, cross-tables and correlation evaluations.

In the study, user satisfaction and socio-psychological parameters, frequency analysis were obtained and correlation tests were applied to measure the relationship strength between the factors affecting the user satisfaction and socio-psychological change. (App-1). According to this; In terms of user profile;

- The main and the control group is between the ages of 18-64 and has the

education at the secondary and higher education level. The mean age of main group is lower than the control group.

In terms of user satisfaction;

- The main group predominantly lives in Karacaibrahim (25,8%), Karakas (22,6%) and Yayla (19,6%) Neighborhoods.
- The main group can access to the urban parks in the city by 5-10 minutes walking time. In the correlation test, there is a high positive relationship between the distance to the nearest green area and the time spending in the park (sigf: 0.000, p: 0.683).
- In the control group, it is seen that this distance is up to 15 minutes. In the correlation test, there is a positive relationship between the proximity to the nearest green area and the time spending in the park (sigf: 0.000, p: 0.577).
- There is a negative low-level relationship (sigf: 0.000, p: -0.275) among the responses given that distance to the nearest green area or accessibility are positively impacted on park use.
- The intended use of parks for main group is limited to recreational activities. On the other hand it was seen that there was a multilayered use in recreational, social and sports activities for control group. The main explanations for the usage of urban open and green areas are social activity in the Karahıdır neighborhood and recreation in other neighborhoods. The proximity of the parks is among the last reasons for useage (Figure 9).

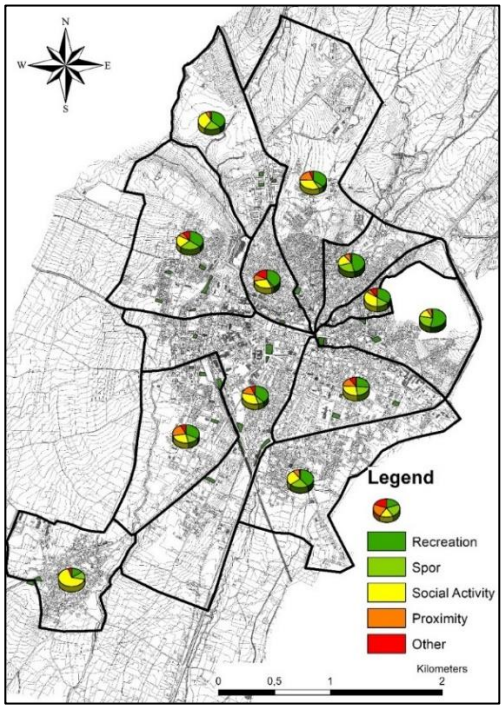


Figure 9. Urban Green Areas Usage.

- The usage frequency of urban open and green areas becomes more prominent once a week and more than once a week in all neighborhoods of the city. Daily park visiting is quite low throughout the city (Figure 10-11).
- The main group spends time in parks once a month or several times a week. However control group visits parks several times a week. Similarly, the main group usually uses parks less than 15 minutes, while the control group spends 15-30 minutes. In the correlation test, it is seen that the main group have a positive relationship between visiting timein the park and the accessibility, which is negatively affected by the park use (sigf: 0.027, p: -0.411). In the control group, there is a negative low-level relationship (sigf: 0.000, p: -0.284) between the time spending in the park and the positive effect of accessibility to the parks.
-

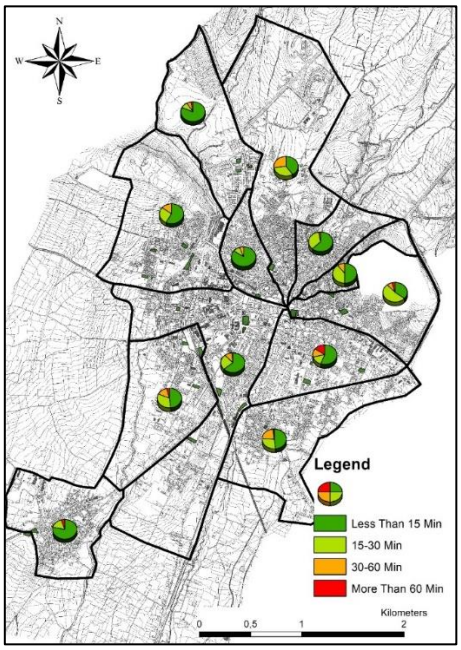


Figure 10. Duration of Urban Green Space Usage.

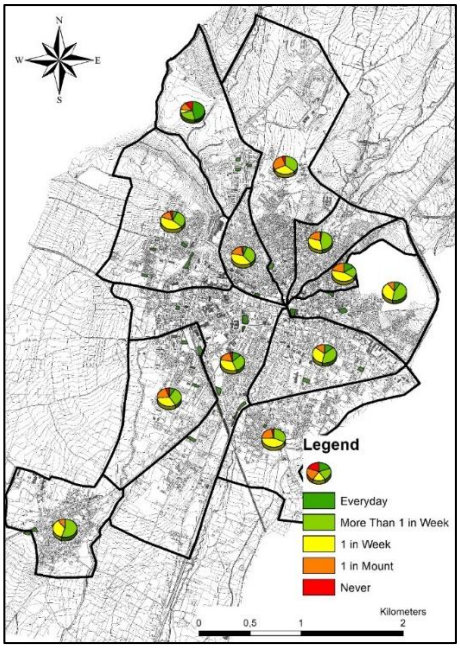


Figure 11. Urban Green Space Usage.

- Both groups choose the same equipments such as buffet and food and beverage units which positively effect the use of the parks, the main group differently consider about lighting and insecurity which negatively affect the use of the parks. In the correlation test, it is seen that there is a high level of negative relationship (sigf: 0.000, p: -0.688) between the time spent in the park and the lack of night lighting. In the control group, the changes in the user profile of the evening is seen as the main criterion.
- When the cross-examination table (Table 3) was observed for the change between the current feeling and feeling in the park;
- In both groups, the users, who stated that they are depressed, tired and stressed in the last period, specified that they are happy, calm and peaceful in the park. In addition, the correlation test was performed for the main group, there was a positive, medium level relationship (sigf: 0.02, p: 0.410) between feeling in the park and landscape elements positively affect the use of parking.

Table 2: Cross-Table in Main Group and Control Group for Current Feelings and Feelings in the Park.

Main group							
Mood	**Feeling In The Park**						**Total**
	Energetic	**Tired**	**Happy**	**Depressed**	**Calm and Peaceful**	**Stressed**	
Energetic	1	0	1	0	0	0	2
Tired	1	1	1	1	5	0	9
Happy	1	0	1	0	0	0	2
Depressed	0	1	3	1	3	0	8
Calm and Peaceful	0	0	1	1	2	0	4
Stressed	1	0	0	0	4	1	6
Total	4	2	7	3	14	1	31
Control group							
Mood	**Feeling In The Park**						**Total**
	Energetic	**Tired**	**Happy**	**Depressed**	**Calm and Peaceful**	**Stressed**	
Energetic	54	4	21	4	56	5	144
Tired	38	13	33	11	107	1	203
Happy	26	10	38	5	64	3	146
Depressed	6	4	12	8	25	5	60
Calm and Peaceful	18	5	25	8	52	6	114
Stressed	8	3	7	7	28	6	59
Total	150	39	136	43	332	26	726

3. Conclusion

One of the main parameters of equaility is accessibility to open green spaces that brings healtier communities. In other words, every inhabitants of a city have equal rights to utilize green space and to live a healty life. Maintaining community green spaces enable health benefits for inhabitants such as resting, relieving stress, and

other psychological effects that also decrease environmental and health inequalities by supplying them equal opportunities to use and benefit from green spaces, such as preserving from air pollution and noise. Many studies have proved relations between green areas in close proximity to residential areas and health profits affirming that spending time in green space can affect health benefits regardless of the level of physical activity. Planning, designing and managing open green spaces or network play superior roles to provide vital new chances for societies. Our study aimed to expose the correlations between the designing, planning, accessibility, mobility and well-being due to the open green space organization in Kırklareli. The study involves three parts; literature study, survey application and spatial analysis. Surveys signified that green space and health has a positive relationship and pointed out that green space affected human mental health and stress-reduction.

According to the survey and spatial analysis results, the green area per capita was calculated as 0,8 m² which is very low due to the planning zone regulation. On the other hand, according to the survey results, parks have a positive psychological effect on the urban users and parks could only offer recreational aim for users with mental disorders. Although all users spend long time in parks and visit them frequently. There are common negative evaluations such as change of user profile at nights, lack of lighting, noise and pollution. In this respect, the literature framework of the study is constant with the presented information. In addition, the number and size of parks should be increased and spatial quality should be improved in order to improve urban health.

In this regard, although the parks provide supportive results for the users to have a psychologically positive effect on the users; it is possible to say that parks of Kırklareli have a simple usage characteristic especially for users with psychological problems and do not satisfy them for socialization and social activities. Despite the limited use of parks in terms of the duration and type of usage for users with mental disorders, it is seen that the factors such as accessibility, lighting and landscaping elements related to the parks are more sensitive than the control group and the correlation between those factors is medium and high level. In the control group, there is no similar sensitivity level and the relations are generally low level. Therefore, it is possible to say that the design interventions in parks can influence the users with psychological disorders in terms of socio-psychological aspects and usage profile.

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Conflict of interests

The authors declare no conflict of interest.

References

Akpınar, A. (2014). Kullanıcıların kentsel yeşil yolları kullanım sebepleri, algıları ve tercihlerinin Aydın/Koşuyolu örneğinde incelenmesi. [Investigation of the reasons, perceptions and preferences of users for urban green roads in Aydın / Koşuyolu case.]*Journal of the Faculty of Forestry Istanbul University*, 64(2), 41-55. https://dx.doi.org/10.17099/jffiu.31281

Alcock, I., White, M.P., Wheeler, B.W., Fleming, L.E., & Depledge, M.H. (2014) Longitudinal effects on mental health of moving to greener and less green urban areas. *Environmental Science Technology*, 48(2), 1247-55. https://doi.org/10.1021/es403688w

Aydemir, S.E., (2004). *Kentsel Açık ve Yeşil Alanlar-rekreasyon. Kentsel Alanların Planlanması ve Tasarımı* [Urban Open and Green Areas-recreation. Planning and Design of Urban Areas](pp. 285-290), Akademi Kitabevi, Trabzon.

Bancroft, C., Joshi, S., Rundle, A., Hutson, M., Chong, C., Weiss, C. C., Genkinger, J., Neckerman, K., Lovasi, G. (2015). Association of proximity and density of parks and objectively measured physical activity in the United States: A systematic review. *Social Science & Medicine*, 138, 22-30. https://doi.org/10.1016/j.socscimed.2015.05.034

Bedimo-Rung A.l., Mowen A.J., & Cohen D.A. (2005). The significance of parks to physical activity and public health. a conceptual model. *Preventive Medicine*, 28(2),159-68. https://doi.org/10.1016/j.amepre.2004.10.024

Bratman, G.N., Hamilton, J.P., Hahn, K.S., Daily, G.C., & Gross, J.J. (2015). Nature experience reduces rumination and subgenual prerontal cortex activation. *Proceedings of the National Academy of Sciences*, 112 (28), 8567-72. https://doi.org/10.1073/pnas.1510459112

Cicea, C., Pîrlogea, C. (2011). Green spaces and public health in urban areas. *Theoretical and Empirical Researches in Urban Management,* 6(1), 83-92. Retrieved From: https://www.researchgate.net/publication/227

490457_Green_spaces_and_public_health_in_urban_areas

Cohen, D.A., McKenzie, T.L., Sehgal, A., Williamson, S., Golinelli, D., & Lurie, N. (2007). Contribution of public parks to physical activity. *American Journal of Public Health*, 97(3), 509–514. https://doi.org/10.2105/AJPH.2005.072447

Dallimer, M., Tang, Z., Bibby, P., Brindley, P., Gaston, K.J., Davies, Z.G. (2011). Temporal changes in greenspace in a highly urbanized region. *Biology Letters,* 7(5), 763-766. Retrieved From: https://www.researchgate.net/publication/50831298_Temporal_changes_in_greenspace_in_a_highly_urbanised_region

Ersoy, M. (2015). Kentsel Planlama Standartlar [Standards in Urban Planning], *Ninova Yayıncılık*, İstanbul.

Fan, Y., Das, K.V., & Chen, Q. (2011). Neighborhood green, social support, physical activity, and stress: Assessing the cumulative impact. *Health & Place*, 17(6), 1202-1211. https://doi.org/10.1016/j.healthplace.2011.08.008

Fuller, R., Gaston, K. (2009). The scaling of green space coverage in European cities. *Biology Letters* 5(3), 352-355. https://doi.org/10.1098/rsbl.2009.0010

Gascon, M., Triguero-Mas, M., Martinez, D., Dadvand, P., Forns, J., Plasencia, A., & Nieuwenhuijsen, M. J. (2015). Mental health benefits of long-term exposure to residential green and blue spaces: a systematic review. *International Journal of Environmental Research and Public Health*, 12 (4), 4354-4379. https://doi.org/10.3390/ijerph120404354

Grahn P., Stigsdotter, U.A. (2003). Landscape planning and stress. *Urban Forestry & Urban Greening*, 2(1), 1-18. https://doi.org/10.1078/1618-8667-00019

Honold, J., Lakes, T., Beyer, R., & van der Meer, E. (2016). Restoration in urban spaces: Nature views from home, greenways, and public parks. Environment and Behavior, 48(6), 796-825. Retrieved From: https://doi.org/10.1177/0013916514568556

Huynh, Q., Craig, W., Janssen, I., & Pickett, W. (2013). Exposure to public natural space as a protective factor for emotional well-being among young people in Canada. *BMC Public Health*, 13, 407-21. https://doi.org/10.1186/1471-2458-13-407

Kaplan, R. (2001). The nature of the view from home: psychological benefits. *Environment & Behavior*, 33, 507–542. https://doi.org/10.1177/00139160121973115

Kaczynski, A.T., Potwarka, L.R., & Saelens, B.E. (2008). Association of park size, distance and features with physical activity in neighborhood parks. *American Journal of Public Health*, 98(8), 1451–1456. https://doi.org/10.2105/AJPH.2007.129064

Koohsari, M.J., Mavoa, S., Villanueva, K., Sugiyama, T., Badland, H., Kaczynski, A.T., Owen, N., & Giles-Corti, B. (2015). Public open space, physical activity, urban design and public health: concepts, methods and research agenda. *Health Place*, 33, 75–82. https://doi.org/10.1016/j.healthplace.2015.02.009

Kremer, P., Hamstead, Z., Haase, D., McPhearson, T., Frantzeskaki, N., Andersson, E., Kabisch, N., Larondelle, N., Rall, E.L., Voigt, A., Baró, F., Bertram, C., Gómez-Baggethun, E., Hansen, R., Kaczorowska, A., Kain, J.H., Kronenberg, J., Langemeyer, J., Pauleit, S., Rehdanz, K., Schewenius, M., van Ham, C., Wurster, D., & Elmqvist, T. (2016). Key insights for the future of urban ecosystem services research. *Ecology and Society,* 21(2), 29. http://dx.doi.org/10.5751/ES-08445-210229

Lee, A.C.K., & Maheswaran, R. (2010). The health benefits of urban green spaces: a review of the evidence. *Public Health*, 33(2), 212-22. https://doi.org/10.1093/pubmed/fdq068

Maas, J., Verheij, R., A., Groenewegen, P., P., Vries, S., & Spreeuwenberg, P. (2006). Green space, urbanity, and health: how strong is the relation?. *Journal of Epidemiology and Community Health*, 7(60), 587-592. https://doi.org/10.1136/jech.2005.043125

Maas, J., Spreeuwenberg, P., van Winsum-Westra, M., Verheij, R.A., de Vries, S., & Groenewegen, P.P. (2009). Is green space in the living environment associated with people's feelings of social safety?. *Environment and Planning A*, 41, 1763-1777. https://doi.org/10.1068/a4196

Martinez-Gonzalez, M.A., Varo, J.J., Santos, J.L., De Irala, J., Gibney, M., Kearney, J., & Martínez, J.A. (2001). Prevalence of physical activity during leisure time in the European Union. *Medicine &*

Science in Sports & Exercise, 33(7), 1142-6. Retrieved From: https://www.ncbi.nlm.nih.gov/pubmed/11445761

Mekansal Planlar Yapım Yönetmeliği [Spatial Plans Construction Regulation.]. (2014, 14 June). (Regulation No: 29030). Retrieved From: http://www.resmigazete.gov.tr/eskiler/2014/06/20140614-2.htm

Nielsen, T. S., & Hansen, K. B. (2007). Do green areas affect health? results from a Danish survey on the use of green areas and health indicators. *Health & Place*, 13(4), 839-850. https://doi.org/10.1016/j.healthplace.2007.02.001

Oktay, D. (1998). Green spaces and the ecological quality of housing: the case of Cypriot settlements. *Ekistics*, 391/392/393(65), 283-291. Retrieved From: https://www.jstor.org/stable/43623310?seq=1#metadata_info_tab_contents

Paquet, C., Orschulok, T.P., Coffee, N.T., Howard, N.J., Hugo, G., Taylor, A.W., Adams, R.J., & Daniel, M. (2013). Are accessibility and characteristics of public open spaces associated with a better cardiometabolic health? *Landscape and Urban Planning*, 118, 70–78. https://doi.org/10.1016/j.landurbplan.2012.11.011

Planlı Alanlar İmar Yönetmeliği [Planned Areas Zoning Regulation.] (2017, 3 July). (Regulation No: 30113). Retrieved From: http://www.resmigazete.gov.tr/eskiler/2017/07/20170703-8.htm

Roberts, H., Sadler, J., & Chapman, L. (2019). The value of twitter data for determining the emotional responses of people to urban green spaces: a case study and critical evaluation. *Urban Studies*, 56(4), 818–835. https://doi.org/10.1177/0042098017748544

Schipperijn, J., Bentsen, P., Troelsen, J., Toftager, M., & Stigsdotter UK. (2013). Associations between physical activity and characteristics of urban green space. *Urban Forestry & Urban Greening*, 12,109–116. https://doi.org/10.1016/j.ufug.2012.12.002

Shishegar, N. (2014). The impact of green areas on mitigating urban heat island effect: a review. *The International Journal of Environmental Sustainability*, 9(1), 119-30. Retrieved From: https://www.researchgate.net/publication/271206461_The_Impacts_of_Green_Areas_on_Mitigating_Urban_Heat_Island_Effect_A_Review_Published_in_2014

Soga, M., Gaston, K. (2016). Extinction of experience: the loss of human-nature interactions. *Frontiers in Ecology and the Environment*, 14(2), 94-101. https://doi.org/10.1002/fee.1225

Stigsdotter, U., Ekholm, O., Schipperijn, J., Toftager, M., Kamper-Jørgensen, F., & Randrup, T,B. (2010). Health promoting outdoor environments – associations between green space, and health, health-related quality of life and stress based on a Danish national representative survey. *Scandinavian Journal of Public Health*, 38, 411-417. https://doi.org/10.1177/1403494810367468

Tamosiunas, A., Grazuleviciene, R., Luksiene, D., Dedele, A., Reklaitiene, R., Baceviciene, M., Vencloviene, J., Bernotiene, G., Radisauskas, R., Malinauskiene, V., Milinaviciene, E., Bobak, M., Peasey, A., & Nieuwenhuijsen, M.J. (2014). Accessibility and use of urban green spaces and cardiovascular health: findings from a Kaunas cohort study. *Environment Health,* 13:20-31. https://doi.org/10.1186/1476-069X-13-20

Toftager, M., Ekholm, O., Schipperijn, J., Stigsdotter, U., Bentsen, P., Grønbæk, M., Randrup, T.B., & Kamper-Jørgensen, F. (2011). Distance to green space and physical activity: a Danish national representative survey. *Journal of Physical Activity and Health,* 8, 741-749. Retrieved From: https://www.ncbi.nlm.nih.gov/pubmed/21832288

Türkiye İstatistik Kurumu [Turkish Statistical Institute]. (2019). Retrieved From: http://www.tuik.gov.tr/PreTablo.do?alt_id=1059

Van den Berg, M., Wendel-Vos, W., van Poppel, M., Kemper, H., van Mechelen, W., & Maas, J. (2015). Health benefits of green spaces in the living environment: a systematic review of epidemiological studies. *Urban Forestry & Urban Greening*, 14, 806-816. https://doi.org/10.1016/j.ufug.2015.07.008

Verheij, R., A., Maas, J., & Groenewegen, P., P. (2008). Urban–rural health differences and the availability of green space. *European Urban and Regional Studies*, 15(4), 307–316. https://doi.org/10.1177/0969776408095107

Villeneuve, P.J, Jerrett, M., Su, G.J., Burnett, R.T., Chen, H., Wheeler, A., & Goldberg, M.S. (2012). A cohort study relating urban green space with mortality in Ontario, Canada. *Environment Research,* 115,51-8. https://doi.org/10.1016/j.envres.2012.03.003

World Health Organization. (2018). Physical activity for health: more active people for a healthier world: draft global action plan on physical activity 2018–2030. *Seventy-First World Health Assembly Provisional Agenda Item 12.2.* Retrieved From: http://apps.who.int/gb/ebwha/pdf_files/WHA71/A71_18-en.pdf

Zaid, M.A. (2015). Correlation and Regression Analysis, SESRIC:Turkey, 4-12. http://www.oicstatcom.org/file/TEXTBOOK-CORRELATION-AND-REGRESSION-ANALYSIS-EGYPT-EN.pdf

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Appendix 1: Survey Frequency Analysis Table for Main and Control Group.

Survey evaluation by other users			**Survey evauation by users that answered the "do you have any discomfort?" (see question 36) " as "psychological discomfort"**		
I. User Profile					
Age Groups	**Frequency**	**Percent (%)**	**Age Groups**	**Frequency**	**Percent (%)**
Young (0-17)	24	3.2	Young (0-17)	2	6.5
Adult (18-64)	*689*	*93.2*	*Adult (18-64)*	*28*	*90.3*
Elderly (65+)	26	3.5	Elderly (65+)	1	3.2
Total	739	100.0	Total	31	100.0
Minimum Age: 12			Minimum Age: 16		
Maximum Age: 85			Maximum Age: 67		
Average Age: 32			Average Age: 26		
Gender	**Frequency**	**Percent (%)**	**Gender**	**Frequency**	**Percent (%)**
Male	429	58.1	Male	23	74.2
Female	310	41.9	Female	8	25.8
Total	739	100.0	Total	31	100.0
Education Status	**Frequency**	**Percent (%)**	**Education Status**	**Frequency**	**Percent (%)**
Literate	101	13.7	Literate	2	6.5
Illiterate	25	3.4	Elementary school	7	22.6
Elementary school	109	14.7	*Secondary school*	*6*	*19.4*
Secondary school	*206*	*27.9*	*University*	*16*	*51.6*
University	*298*	*40.3*	Total	31	100.0
Total	739	100.0			
II. User Satisfaction					
Walking Time To Nearest Park	**Frequency**	**Percent (%)**	**Walking Time To Nearest Park**	**Frequency**	**Percent (%)**
5 minutes	*278*	*37.6*	*5 minutes*	*10*	*32.3*
6-10 minutes	*178*	*24.1*	*6-10 minutes*	*10*	*32.3*
11-15 minutes	*125*	*16.9*	11-15 minutes	4	12.9
16-20 minutes	86	11.6	16-20 minutes	2	6.5
20 minutes and more	71	9.6	20 minutes and more	5	16.1
Total	739	100.0	Total	31	100.0

Purpose of Park Usage	**Frequency**	**Percent (%)**	**Purpose of Park Usage**	**Frequency**	**Percent (%)**
Rekreation	*256*	*35.4*	*Recreation*	*17*	*54.8*
Spor	122	16.9	Spor	5	16.1
Social activities	*253*	*28.0*	*Social activities*	3	9.7
Closeness to the place where they live	88	12.2	Closeness to the place where they live	1	3.2
Socialization	50	6.9	Others	5	16.1
Others	5	.7	Total	31	100.0
Total	724	100.0			
Frequency of Park Usage	**Frequency**	**Percent (%)**	**Frequency of Park Usage**	**Frequency**	**Percent (%)**
Never	27	3.7	Never	1	3.2
Once in mount	127	17.3	Once in mount	*8*	*25.8*
Once in week	*261*	*35.6*	*Once in week*	7	22.6
More than one in week	*251*	*34.2*	*More than one in week*	*9*	*29.0*
Everyday	67	9.1	Everyday	6	19.4
Total	733	100.0	Total	31	100.0
Spending Time in a Park	**Frequency**	**Percent (%)**	**Spending Time in a Park**	**Frequency**	**Percent (%)**
15 minutes and less	*396*	*57.6*	*15 minutes and less*	*19*	*61.3*
15-30 minutes	*176*	*25.6*	15-30 minutes	6	19.4
30-60 minutes	87	12.6	30-60 minutes	4	12.9
60 minutes and more	29	4.2	60 minutes and more	2	6.5
Total	688	100.0	Total	31	100.0

II.I. Question 27. Do the following have a positive impact on the use of the nearby park / green area? (Prominent 3 answers)

Urban Furniture	**Frequency**	**Percent (%)**	**Accesibility**	**Frequency**	**Percent (%)**
Yes	311	42.1	Yes	15	48.4
No	428	57.9	No	16	51.6
Total	739	100.0	Total	31	100.0
Facilities	**Frequency**	**Percent (%)**	**Urban Furniture**	**Frequency**	**Percent (%)**
Yes	309	41.8	Yes	12	38.7
No	430	58.2	No	19	61.3
Total	739	100.0	Total	31	100.0
Landscape Elements	**Frequency**	**Percent (%)**	**Landscape Elements**	**Frequency**	**Percent (%)**
Yes	253	34.2	Yes	8	25.8
No	486	65.8	No	23	74.2
Total	739	100.0	Total	31	100.0

II.II. Question 28. Do the following have a negative impact on the use of the nearby park / green area? (Prominent 3 answers)

Pollution	**Frequency**	**Percent (%)**	**Pollution**	**Frequency**	**Percent (%)**
Yes	384	52.0	Yes	13	41.9
No	355	48.0	No	18	58.1
Total	739	100.0	Total	31	100.0
Noise	**Frequency**	**Percent (%)**	**Noies**	**Frequency**	**Percent (%)**
Yes	347	47.0	Yes	10	32.3
No	392	53.0	No	21	67.7
Total	739	100.0	Total	31	100.0
User Profile Change for Night Time	**Frequency**	**Percent (%)**	**Lack of Lighting in Evening / Insecurity (two different answers at the same rate)**	**Frequency**	**Percent (%)**
Yes	241	32.6	Yes	9	29.0
No	498	67.4	No	22	71.0
Total	739	100.0	Total	31	100.0

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Automobile Trips to School and Safety Perspectives of Unplanned Lokoja Metropolis in North Central Nigeria

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ABSTRACT

Many studies on transport research did not consider the consequences of high reliance on automobile trip to schools which frequently resulted to road traffic crashes, traffic delay, and late arrival to school, injuries and sometimes death of victims especially students. As a result this research examines the consequences of automobile trip to school among secondary school students in Lokoja metropolis. It aims to investigate the safety of the use of automobile in an unplanned city like Lokoja, with the specific objectives of ascertaining the number of pupils who embark on different automobile trips; the safety measures, and the casualty cases. Three hundred students were selected for questionnaire administration across six selected secondary schools in the city. Data on students' road traffic crashes were obtained from archives. Descriptive and inferential statistics were employed for analyses. Findings reveal that more than 70% of students rely on automobile to travel to schools. Car trips to schools were more among students of private secondary schools. Students in private secondary schools rely more on the use of a school bus. It was also discovered that students were involved more in traffic crashes along major roads. The study concludes on the use of school bus by students instead of relying on private cars.

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1. Introduction

Within the last two decades the number of registered vehicles in Nigeria has increased tremendously from 349, 417 in 1999 to 13, 214, 019 in the year 2017. Motor vehicles increased from 222, 507 to 7, 928, 132 for the same period, while motorcycles increased from 126, 910 to 5, 285, 887 (Federal Road Safety Corps, 2017). According to reports in the Nigeria Bureau of Statistics (2017), an approximately 4,656,725 vehicles are owned by individuals for their day to day transaction, while 6,749,461 vehicles are registered as public transport services for both passengers and freight transport services in the country. The data suggests that the total number of Nigeria's vehicle per person is 0.06.

This can be interpreted as very low compared to what is obtainable in some of the developed countries of the world where more than 0.70 vehicles are accessible for every person in Finland,

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Italy, USA, Austria to mention but a few (The World Health Organisation's Global Status Report on Road Safety, 2015). Incessant increase in the importation of fairly used vehicles in some developing countries such as Nigeria to meet their travel needs such as trip to work, journey to schools, shopping and recreational activities has created serious bottlenecks for people because of inadequate road networks to accommodate vehicular movement (Ogunsanya, 2004). High automobile travel demand creates challenges that include traffic delay, road traffic crashes, fatigue and emission of toxic substances into the atmosphere that are harmful to human health (Kopnina, Williams, 2012).

Until recently, research on children demand for automobile trip to schools was very scanty in the literature compared to work or health care trips. This apparent gap in the field of transport research is unwarranted for any country striving to achieve a sustainable transport policy in the 21st Century. Studies in different parts of the world have shown that trip to school is one of the most important trip generation in any urban centre in the world. This is because it involves the children and their parents that accompany their wards to school (Baker., Basu., Copper., Lall., Takeuch, 2005: p. 20; Department for Transport, 2013). Detailed information on journey to school is highly essential because pupils can be trained to travel on their own and also because school trips generate problems such as traffic crashes, emission of toxic substances and fatigue (Goeverden and Boer, 2013). Studies have also shown that car congestion around schools during the peak times of arrival and departure create a dangerous environment for children that walk, cycle or use public transport service to and from schools (Collins and Kearns, 2001 as cited in Badri, 2013). Similarly, traffic congestion along routes connecting schools create delay and late arrival to schools (Crowford, 2006, as cited in Badri, 2013).

Furthermore, studies have shown that an increase in average distance from home to school in recent decades has resulted in high reliance on motorised modes of transportation such as car, and public transport services of all forms such as tricycle, motorcycle, taxi, bus and mass transit (Easton and Ferrari, 2015). The use of automobile, particularly private car, is often associated with air pollution, carbon dioxide emission, traffic congestion, road traffic crashes and other environmental health challenges (Kopnina, Williams, 2012). Short distance trips to school will promote walking and cycling and this will enhance sustainable transport to school (Kim, 2014., Goever and Boer, 2013). In an assessment of journey to school in U.S, Centre for Disease Control and Prevention (2012) reported that children do not get adequate physical activities and this contributes to their health problems. It therefore recommended an average of 60 minutes physical activity per day for each student. In another case, an assessment of mode choice to schools in some of the developed countries, the socio-economic characteristics of the parents such as gender, employment status and level of educational qualifications determined the mode choice of their children to school. Women were more involved in escorting their wards to school (Kim, 2014). Studies on the mode choice to school in the developing world particularly in Nigeria emphasised that the location of schools relative to the residence of the students are the major determinants of mode choice (Olawole and Olaposi, 2016., Ipingbemi and Aiworo, 2013). Some of these studies did not consider the health implications of high demand for automobile trip to school. These health implications include children traffic crashes and congestion that have resulted in public concern in some major and emerging cities in the developing world, Nigeria inclusive. According to the Federal Road Safety Corps (2017), the percentage of children injured in road traffic crashes on roads in Nigeria is 6 %, while the percentage of children killed in road traffic crashes is 7% (FRSC, 2017). In the same report, 39.8% of private vehicles were involved in road traffic crashes, 58.9% were commercial vehicles, while only 1.3% of the vehicles involved in the crashes were government owned (FRSC, 2017). It is interesting to note that many of these vehicles were conveying children to school (Badri, 2013). It is on this note that this study seeks to examine the mode choice of transportation of children to school and the implications of high demand of automobile trips to school in the emerging city of Lokoja. This will give an avenue to propose a sustainable transport policy for school trips in the emerging city of Lokoja in north central Nigeria.

2. Study Area

Lokoja metropolis is the study area. The city is located on latitude 7^0 45' 27.56" - 7^0 51' 04.34" N of the Equator and longitude $6^0$41' 55.64" - $6^0$45' 36.58" E of the Prime Meridian by the confluence of Rivers Niger and Benue (see figure 1), with a total land coverage of about 63.82 sq. km. (Adeoye, 2012). Lokoja built up area comprises seven localities such as Lokoja Core Area, Adankolo, Lokongoma, Felele, Zango Daji, Army Barracks and Ganaja Village (NPC, 2006). These smaller localities which were formally separated from one another now merged together to become larger Lokoja which constitute a major city in Kogi State (Olawepo, 2009). Shortly after Lokoja became the capital of Kogi State in 1991, the city witnessed rapid

development as a result of influx of people from neighbouring towns and villages.

Like many other cities in Nigeria, three types of road networks are found in Lokoja metropolis. These include Trunk A- Federal Roads (highways), Trunk B- State Roads, and Trunk C- Local Government Roads. The Trunk A Roads comprise the federal highways that connect Lokoja to other towns and states of the federation. The Trunk B-State Roads are the intra urban road networks. Many of these roads are poorly designed with non-pedestrian walk ways. This has discouraged many pedestrians particularly children to walk to and from school because of heavy traffic in the city. Many Trunk B roads are narrow, poorly maintained and connect few residential area., many public transport services such as tricycles, taxis and mass transits are forced to use the federal highways in the city (Adetunji, 2017: P.2). This has led to incessant road traffic congestions and traffic crashes within the metropolis. The last categories of urban route in Lokoja metropolis are Local Government Roads that link low density residential parts of the city. Many of these roads are earth surfaced with poor transport facilities. Some of the children that live on the outskirts of Lokoja have less access to public transport services to school.

Studies have also shown that the pattern of distribution of secondary schools in Lokoja is not evenly distributed (Adetunji and Aloba, 2018). Virtually all public secondary schools in the city are located in High and Medium density areas of Lokoja. The inability of government to provide educational facilities for the fast growing population of Lokoja has led to the proliferation of substandard secondary schools at the outskirts of the city. The preference for quality education has forced many parents to allow their wards to cross the city landscape, travelling long distances in order to access educational facilities located outside their localities (Adetunji and Aloba, 2018). Many of these children rely on automobile to and from school.

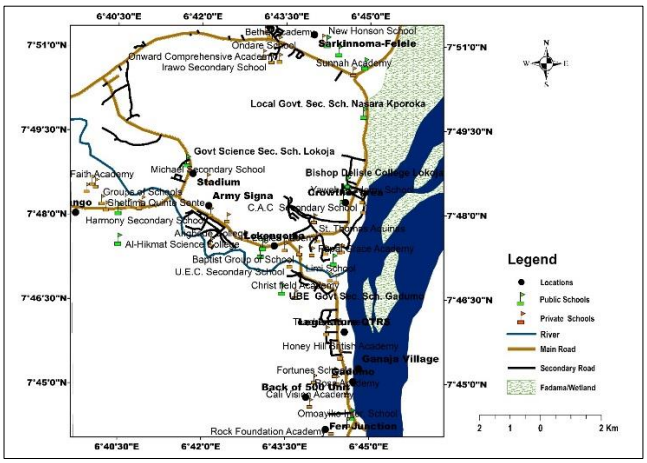

Figure 1. Distribution of Schools and Road Networks in Lokoja
Adapted From: (Adetunji and Aloba, 2018)

3. Materials and Methods

Primary and secondary data were utilised for this study. Three sets from the primary data were required for the study. The first category of data was based on socio-economic characteristics of secondary school children and their travel patterns such as mode choice of transportation, distance travelled and type of school attended. The second set of data focussed on parents' decisions on school attended by their wards and the number of children attending school in their family. The last group of data was based on children traffic crashes. Three public and private secondary schools with students' enrolment of more than 1000 population were purposively selected for the study. A structured questionnaire that was divided into two sections (parent decision on school choice for their wards and children mode preference to school) was designed to elicit information on mode trips to school. In each of the schools selected, an average of 40 children/students was selected using a table of random numbers across the junior and senior secondary schools in the city. The administration of questionnaire to the students was done with the assistance of the principals of the selected schools. The questionnaires were given to the students and were taken home to be completed and returned the next day. Data on children (students) road traffic crashes were obtained from the archive of the Federal Road Safety Corps and Federal Medical Centre (2017) in Lokoja metropolis. Descriptive and inferential statistics were employed to analyse the data.

4. Results and Discussion

The principal mode of transport to secondary schools in Lokoja is by foot particularly when a short distance is involved. Table 1 reveals that 29.9% of secondary school students walk to schools in the city. This is at variance with the study carried out in Mission Hill School by Kim (2014), where 15% of children engaged in walking to school (Kim, 2014). The use of private cars for school trip was ranked second (23.7%) of the modal split in Lokoja. Approximately 16.6% and 17.1% of the sampled students rely on tricycle and motorcycle for trip to schools respectively. The result of this analysis reveals that more than 70% of the sampled students rely on automobile for their journey to school. The use of school bus for trip to school is ranked lowest (12.8%) among the children / students in Lokoja metropolis. This is contrary to the findings in a study of mode choice of transportation to schools in Abu Dhabi, the capital of United Arab Emirate. In the findings, Badri (2013) reported that 45% of children travel to school by car, while 38.1% rely on school buses. However, the use of school bus for journey to school in some of

the advanced countries has been considered to be safer than the use of private cars to school (The Car Crash Detective, 2018).

Table 1: Mode of choice to secondary schools in Lokoja

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Walk	63	23.1	29.9	29.9
	School bus	27	9.9	12.8	42.7
	Tricycle	35	12.8	16.6	59.2
	Motor cycle	36	13.2	17.1	76.3
	Car	50	18.3	23.7	100.0
	Total	211	77.3	100.0	
Missing	System	62	22.7		
Total		273	100.0		

The mode choice of transportation of children to school varies according to the type of school attended. Private secondary school children rely more on car trip to school compared to public secondary school children. Table 2 reveal that 32 % of private secondary school children depend on car trip to school while 16% of public school children rely on car trip. Further analysis shows that more than 30% of public secondary school children walk to school in contrast to 27.7% of private secondary school children. Similarly, the use of school bus for school trip is more pronounced among the children of private secondary schools (15%) in comparison with public secondary school children (10.3%).

Table 2: Mode Choice of Transportation to Different Type of School in Lokoja

Mode Choice		Type of school attended by your children				Total
		Private secondary school		Public secondary school		
		No	%	No	%	
Mode of choice to school	Walk	28	27.7	35	32.7	63
	School bus	15	14.9	11	10.3	26
	Tricycle	17	16.8	18	16.8	35
	Motor cycle	9	8.9	26	24.3	35
	Car	32	31.7	17	15.9	49
Total		101	100.0	107	100.0	208

The decisions of parents to allow their ward to walk to school varies with: (1) No. of students attending school in the family, F= 8.985,<P.00; (2)Distance of Residence to School, F=7.376 <P.01;(3) Route connected to the location of the school attended by student, F=8..699< P.00; (4)Type of School attended by students, F= 1.960< P.17(see Table 3). In many communities in Africa where many families are polygamous in nature, there is the tendency for children to walk to school particularly where many students are of school age. Also, children whose schools are located in their neighbourhoods may likely walk to school in contrast to children with schools outside their localities. The route leading to the location of a school attended by the children also determines to a large extent whether the children walk or rely on automobile to school. The provision and availability of pedestrian walk ways and location of schools away from heavy traffic may encourage parents to allow their wards to walk to schools rather than rely on automobile for trip to schools.

Table 3: Variables that Determine whether Children Walk to School in Lokoja

ANOVA

		Sum of Squares	Df	Mean Square	F	Sig.
No of students attending school in the family	Between Groups	4.410	1	4.410	8.985	.003
	Within Groups	48.100	98	.491		
	Total	52.510	99			
Type of school attended by your children	Between Groups	.490	1	.490	1.960	.165
	Within Groups	24.500	98	.250		
	Total	24.990	99			
Distance of your residence to school	Between Groups	4.255	1	4.255	7.376	.008
	Within Groups	54.234	94	.577		
	Total	58.490	95			
Route connected to the location of the school attended by your children	Between Groups	5.813	1	5.813	8.699	.004
	Within Groups	62.145	93	.668		
	Total	67.958	94			
Sex of the student	Between Groups	.423	1	.423	1.687	.197
	Within Groups	24.538	98	.250		
	Total	24.960	99			

It is pertinent to note that many parents prefer their wards to travel to school by automobile as a result of the consideration of many factors. For instance, Table 4 indicates that 42.5% of parents considered convenience as the most priority for their wards to travel using automobiles. More than 50% of parents considered safety as important factor for allowing their wards to travel by automobile to school because many secondary schools in Lokoja are located on major roads where traffic is heavy during the peak periods.

Table 4: Parent Preference on Automobile Trips to School

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Convenience	99	36.3	42.5	42.5
	Safety	120	44.0	51.5	94.0
	Weather condition	14	5.1	6.0	100.0
	Total	233	85.3	100.0	
Missing	System	40	14.7		
Total		273	100.0		

Studies have shown that high demand for automobile trip to school has serious implications on student's health in terms of air pollution around the school premises, traffic congestion and road traffic crashes that result in injuries and deaths of children who are the leaders of tomorrow (Kim, 2014; Goeverden and Boer, 2013). In the last twelve months, thousands of children who are of school age have been involved in road traffic crashes in Nigeria. Table 5 indicates that 1765 children were injured in road traffic crashes in 2017 in Nigeria. Kaduna State has the highest number (225) of children injured in road traffic crashes. This is closely followed by Kano State with a total number of 142 children. Akwa Ibom and Cross River States recorded the lowest number of children injured in road traffic crashes with 2 and 5 respectively. Kaduna State recorded the highest number of children that died in road traffic crashes. Bauchi State was ranked second in terms of children who lost their lives in road traffic crashes in 2017 in Nigeria.

Table 5: Number of Children involved in Road Traffic Crashes on State Basis in 2017

State	Number of Children Injured on Road Traffic Crashes	Children Killed
Abia	11	0
Adamawa	12	2
Akwa Ibom	2	4
Anambra	16	8
Bauchi	128	23
Bayelsa	4	4
Benue	49	12
Borno	6	4
Cross River	5	0
Delta	15	7
Ebonyi	21	11
Edo	56	19
Ekiti	11	1
Enugu	61	6
FCT	102	9
Gombe	46	6
Imo	19	3
Jigawa	66	12
Kaduna	225	53
Kano	142	18
Katsina	114	11
Kebbi	19	2
Kogi	62	18
Kwara	34	10
Lagos	22	5
Nasarawa	106	10
Niger	82	20
Ogun	67	7
Ondo	52	20
Osun	88	15
Oyo	84	8
Plateau	48	8
Total	1765	

Source: Federal Road Safety Corps, 2017

The situation in which children are involved in road traffic crashes in Lokoja metropolis is not at variance with what occurs in other states of Nigeria. For instance, Table 6 reveals that 136 children were involved in road traffic crashes in Lokoja in 2011. As high as 28 children were involved in road traffic crashes in the month of December, 2011. This period coincided with the festive period when the flow of vehicular traffic is heaviest in the city. The number of children involved in road traffic crashes reduced from 136 in 2011 to 87 in 2012. Table 6 indicates that 14 children were involved in road traffic crashes in January, August and December, 2012 respectively.

Table 6: Children Traffic Crashes for 2011 and 2012

MONTHS	2011	2012
JANUARY	7	14
FEBRUARY	3	7
MARCH	12	4
APRIL	7	5
MAY	6	01
JUNE	13	8
JULY	16	9
AUGUST	22	14
SEPTEMBER	1	6
OCTOBER	9	1
NOVEMBER	12	4
DECEMBER	28	14
TOTAL	136	87

Source: Extracted from the Archive of FRSC, Lokoja Kogi State, 2012

At a more disaggregate level, the number of children of school age involved in road traffic crashes is more pronounced along Lokoja- Kabba Junction route and Lokoja- Ganaja- Anyigba road(See Table 7).

Table 7: Children Involved in Road Traffic Crashes across Different Routes Segments in Lokoja Metropolis 2011-212

LOCATION	ROAD CRASHES ALONG DIFFERENT ROUTES							
	Lokoja-Koton-Karffe-Abuja		Lokoja-Ajaokuta		Lokoja-Zariagi – Okene		No.of Crashes	Months
	2011	*2012*	*2011*	*2012*	*2011*	*2012*		
Felele	2	-	-	-	-	1	3	January
Koton-Karffe	3	2	-	-	-	4	9	February
Lokoja	3	-	-	-	-	2	5	March
-	-	-	-	-	-	1	1	April
Zariagi	-	-	-	-	4	-	4	May
Natako-Zariagi Felele	6	-	-	-	2	3	11	June
Kabba Junction	-	-	-	-	4	2	6	July
Lokoja(Salem University)	12	-	3	-	-	4	19	August
Zariagi	-	-	-	-	7	5	12	September
	-	-	-	-	3	1	4	October
Zariagi	-	-	1	-	1	6	8	November
Kabba Junction	2	-	-	-	15	2	19	December
Total(%)	28		4		36	31	101	

The accident conditions of children involved in road traffic crashes at different routes in Lokoja as shown in Table 8 varies from minor to severe. Many of the children reportedly died in road traffic crashes. More than 60% of accidents occurred along the federal or major roads, particularly along Lokoja- Kabba route and Lokoja- Abuja route in the city.

Table 8: Reported Cases of Children Involved in Road Traffic Crashes at Federal Medical Centre Lokoja, Lokoja, Kogi State

File	**Sex**	**Age**	**Accident Location**	**Part Involved in bruises**	**Condition of patient**	**Days in Hospital**	**Survival**
790564 28/11/15	M	15	NTA Roundabout Lokoja	Facial braises on motorcycle	Minor accident on motorcycle	3 days	Survive and discharged
790429 13/12/15	M	16	Head on collision of two buses at Kabba junction	Humerus facture	Severe accident brought in un-conscious	1 months	Later referred
790422 18/12/15	F	17	Head on collision of two buses Kabba Junction	Right upper limb fracture	Severe accident	2 months	Survival discharge follow-up
790565 5/11/15	M	13	Truck and car Peugeot collision at Felele Lokoja	Upper Lip and shoulder laceration	Severe accident	17 days	Discharge
790563 5/11/15	M	13	Frontal scalp avulsion and clip dislocation Ajaokuta Lokoja Road	Frontal scalp avulsion and Hip dislocation	Brought in unconscious	1 month	Referred conscious
790575 3/1/16	M	6	-	Avlusion of right Hip & Tendom involvement	Not Severe Conscious	2 hours	Discharged for outpatient treatment
790979 8/2/16	M	14	Lokoja - Abuja Road	Pelvic fracture	Severe unconscious	6 hours	Referred to university of Abuja Teaching Hospital
791235 16/2/16	F	5	NTA Roundabout Lokoja	Facial bruises on both arms	Minor accident	4 hours	Discharged as outpatient
791293 18/3/16	F	2 ½	Ajaokuta – Lokoja Road	Motorcycle Bilateral per orbital swelling	On motorcycle	7 days	Discharged later
872781 6/9/16	F	1 years 4 months	Ganaja Junction	Motorcycle Right hand fraction	Severe	3 months	Discharged as orthopaedic case
872944 6/9/16	F	7	Kabawa Area Lokoja	Bleeding from mouth	Minor accident on motorcycle	3 hours	Discharged
7907891	M	12	Abuja-Lokoja	Head Injury	Unconscious	6 days	Died
7907992 2/3/6	F	13	Koto- Karffe road	Oral bleeding Head on collision of two buses	Minor	1 day	Discharged
797192 27/3/16	M	15	Ajaokuta - Lokoja Road	Collision of bus and Motorcycle bleeding from Nose and Ear	Severe accident	7 days	Discharged and referred

Source: Unpublished Cases of Children Involved in Road Traffic Crashes extracted from Archive of Accident and Emergency Sections at Federal Medical Centre Lokoja

5. Conclusion and Planning Implications

The study examined the characteristics of automobile trip to school in Lokoja, an emerging city in north central Nigeria. At the introductory part of the study, the paper discussed the trend of automobile demand in Nigeria and the pattern of children traffic crashes as a result of high demand for automobile trip to school. The methodological section utilised both primary and secondary data to elicit information on the mode preference of children to school in Lokoja. Also, data relating to road traffic crashes of children were obtained from archive sources. Descriptive and inferential statistics were used to analyse the data. A number of issues were highlighted. One is that the town planners did not envisage the population explosion of the city in years ahead. But as the years went by, population almost quadripped to an alarming rate, making it very difficult for a new plan to be formulated. With this increase came also the increase of automobiles, tricycles, motorcycles, etc. Thus road crashes was a resultant effect. Evidence from the literature showed how developed economies like USA, Italy and Austria etc managed their population increase, especially as it concern students trip to school. The results of the research reveal that more than 70% of children rely on automobile (tricycle, motorcycle, school bus and car) for their trips to school. The resultant effects of this are high traffic crashes by children on both intra and inter -city roads in Lokoja metropolis. Many children involved in road traffic crashes in the last few years have sustained minor and serious injuries, while many have lost their lives in the course of their trips to school in the city. The study made far reaching recommendations. First the study recommends the need to encourage the use of school buses in Lokoja and similar other cities in Nigeria so as to minimise large number of vehicular movement on roads as this may likely reduce casualties among school children as a result of road traffic crashes. This recommendation could be backed by legislation. Similarly the study also recommends that there is the need to improve road transport infrastructure through the provision of pedestrian walk ways so as to encourage children to engage in active walking to schools rather than relying on automobile trips to schools. And finally, security operatives who have been furnished with different routes that students use to school be tasked to ensure that safety measures are adhered strictly, to curb crashes in this emerging city, Lokoja in North Central Nigeria.

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Conflict of interests

The author declares no conflict of interest.

References

Adetunji M. A. (2017). Assessment of Traffic Delay on Selected Route Segments in Lokoja, Kogi State, Nigeria. *Canadian Journal of Tropical Geography* (CJTG), 4 (1): 1-10, Published by the Department of Geography, Laurentian University, Sudbury, Ontario, Canada. https://www3.laurentian.ca/rcgt-cjtg/volume-4-issue-1/assessment-of-traffic-delay-on-selected-route-segments-in-lokoja-kogi-state-nigeria/?lang=en

Adetunji, M.A., Aloba, O. (2018). Analysis of the Distribution Pattern and Accessibility of Students to Secondary Educational Facilities in Lokoja, Kogi State, Nigeria. *Journal of Analele Universității din Oradea - Seria Geografie,* XXVIII (1): 113-124, Department of Geography, Tourism and Territorial Planning, University of Oradea, Romania. http://www.geografie-uoradea.ro/Reviste/Anale/on_line_first.html

Adeoye, N. O. (2012). Spatio-Temporal Analysis of Land Use/Cover Change of Lokoja: A A Confluence Town, *Journal of Geography and Geology*, 4(4): 40 -51. https://doi.org/10.5539/jgg.v4n4p40

Badri, M. A. (2013). School Travel Modes: Factors Influencing Parental Choice in Abu Dhabi. *International Journal of Education Economics and Development*, 4(3) 203-218. https://dx.doi.org/10.1504/IJEED.2013.056010

Baker, J., Basu, R., Copper, M., Lall, S., Takeuchi, A. (2005). Urban Poverty and Transport: The case of Mumbai. *World Bank Policy Research* Working Paper S3693, 2005. http://documents.worldbank.org/curated/en/891271468258270484/Urban-poverty-and-transport-the-case-of-Mumbai

Bradshaw, R. (1995). Why do Parents Drive their Children to Schools?. *Traffic Engineering and Control*, 1995; 36(1): 16-19. Downloaded on May 31, 2017. Available online http://scholar.googleusercontent.com/scholar?q=cache:drpbLYzcC-cJ:scholar.google.com/&hl=en&as_sdt=0,5

Centres for Disease Control and Prevention, (CDCP). (2012). Physical Activity and the Health of Young People. https://www.who.int/dietphysicalactivity/factsheet_young_people/en/

Collins, D. and Kearns, R. (2001). The safe journey of an enterprising school: negotiating landscapes of opportunity and risk. *Health & Place*, Vol. 7, No.4, pp. 293- 306. http://dx.doi.org/10.1016/S1353-8292(01)00021-1

Crawford, D. (2006). 'Personal, family, social and environmental correlates of active commuting to school', *American Journal of Preventive Medicine*, Vol.30, No. 1, pp.5-51. http://dx.doi.org/10.1016/j.amepre.2005.08.047

Department for Transport. (2013). National Travel Survey: England 2013. Statistical Release Department for Transport, London. https://www.gov.uk/government/statistics/national-travel-survey-2013

Easton, S., Ferrari, E. (2015). Children's Travel to School- The Interaction of Individual, Neighbourhood and School Factor. *Transport Policy* 14(2015), 9-18. https://doi.org/10.1016/j.tranpol.2015.05.023

Federal Medical Centre. (2017). Unpublished Cases of Children Involved in Road Traffic Crashes extracted from Achieve of Accident and Emergency Sections at Federal Medical Centre Lokoja

Federal Road Safety Corps (FRSC). (2017). Creating a Safe Motoring Environment in Nigeria, 2017 Annual Report of Federal Road Safety Corps: P. 1-252. https://frsc.gov.ng/wp-content/uploads/2018/09/AnnualReport2017.pdf. Accessed on 30/11/2018

Goeverden, C.D.V., Boer, E. D. (2013). School Travel Behaviour in the Netherlands and Flanders, *Transport Policy,* 26 (1), 73-84. http://dx.doi.org/10.1016/j.tranpol.2013.01.004

Kim, C. (2014). The Journey to School: A Case Study at Mission Hill School. A Thesis Submitted in Partial Fulfilment of the Requirements for the Degree of Mater of Arts in Urban Environmental Policy and Planning, Tufts University. http://sites.tufts.edu/MaryDavis/files/2014/04/The-Journey-to-School-Christina-_Kim.pdf

Kopnina, H., Williams, M. (2012). Car Attitudes in Children from Different Socio-economic Background in the Netherlands. *Transport Policy,* 24(1), 118-125. https://doi.org/10.1016/j.tranpol.2012.07.010

Krejcie, V. R., Morgan, D.W. (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement,* 30(1): 607-610. https://home.kku.ac.th/sompong/guest_speaker/KrejcieandMorgan_article.pdf

National Bureau of Statistics. (2017). Nigeria's Vehicle Population Data Reveals Towering Opportunities. https://nairametrics.com/vehicle-population-in-nigeria-is-11547236-nbs-data/. Accessed on 26-11-2018

NPC 2006 – Nigerian Population Commission. (2007). Pg.B194 Federal Republic of Nigeria Official Gazette 15 may, 2007. No 24 Vol. 94

The World Health Organisation's Global Status Report on Road Safety. (2015). These are the Countries with the Most Vehicles Per Person. https://www.who.int/violence_injury_prevention/road_safety_status/2015/en/

The Car Crash Detective. (2018). School Buses Safer than Driving / Walking Your Child to School. https://www.thecarcrashdetective.com/school-buses-safer-than-driving-walking-child-school/

Ogunsanya, A. A. (2004). Perspectives on Urban Transportation in Nigeria. Edited by Ogunsanya, A. A: Vandu-Chikolo, I and Sumaila, A.G. *Nigeria Institute of Transport Technology* (NITT), Zaria. Kaduna MOD Press,1-26

Ipingbemi, O; Aiworo, A.B. (2013). Journey to School, Safety and Security of School Children in Benin City. *Transportation Research Part F.* 19, 77-84. https://doi.org/10.1016/j.trf.2013.03.004.

Olawole, M.O; Olaposi O.M. (2016). Mode Choice of Undergraduates: A Case Study of Lecture Trips in Nigeria. *The Indonesian Journal of Geography*, Faculty of Geography and Indonesian Geographers Association (IJG). 48(2)145-156. https://doi.org/10.22146/ijg.17630.

Olawepo R. A. (2009). Evaluating Housing Problems through Participatory Rural Appraisal in Lokoja, Nigeria. *African Research Review,* 3(1): 77-96. http://dx.doi.org/10.4314/afrrev.v3i1.43557.

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Why isn't Urban Development Sustainable? An Institutional Approach to the Case of Athens, Greece

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ABSTRACT

Despite the rise to prominence of sustainable planning, the state of urgency and the pressure imposed by the extreme competition between metropolitan territories reduces sustainability to a market-oriented doctrine for deregulated urban development. The aim of this article is an exploration of the current Athenian urban crisis, by centring on sustainable urban development plans, territorial planning institutions, and urban policies. To this end, the phenomenon of urban crisis is explained as a derivative of the failure of sustainability reforms. By establishing a link between the institutional framework governing urban development and the success or failure of sustainability reforms, this article seeks to contribute to the discussion around the attainability, scope and impact of sustainable urban development plans. Through the hypothesis that as long as territorial planning is used as means towards speculative urban development, it will only be equivalent to that of a real estate facilitating mechanism, it is argued that the urban development model of Athens, as well as the role that institutions have in its shaping, is incompatible with any notion of sustainability. The main contribution of this article is to potentially help towards developing a critical reflection on how projects, plans, territories and sustainability should be approached.

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1. Introduction

1.1. Focus

Currently, the answer to the global economic and ecological crisis, along with its social and political implications, appears to be sustainable urban development. Sustainable urban development has become a portmanteau term including a wide variety of heterogeneous notions. In this regard, several critics emphasise that sustainable urban development has nowadays become a caricature of a more serious consideration (Koolhaas, 2014), as well as a polished term for the alarming practice of providing growth to declining economies through speculative urban development.

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Consequently, despite the rise of sustainable territorial planning both as a fast-developing industry and as a policy priority, they suggest that to this day, it has provided us only with some relatively isolated urban experiments that cannot be scaled up to ensure the sustainability of an entire metropolis and has aggravated "urban greenwashing" and environmental segregation (Davis, 2006, p. 15). In this article I attempt to support the thesis that sustainable urban development attempts have often resulted in a series of profound mutations affecting urban societies deeper than the broader crises at source.

1.2. Background

The diffusion of planning guidelines, technical formulas and management techniques, has rendered what literature describes as "sustainable territorial planning" a decisive factor that mutates metropolitan territories. Contemporary planning policies set sustainable urban development plans, as well as flagship development and infrastructure projects as the regulatory mechanisms that are called upon to unify profoundly heterogeneous spaces and to organise them towards attaining social and ecological sustainability (Rogerson & Boyle, 2000, pp. 133-196). Consequently, these tools are gradually becoming the ordering mechanism of the urban field (Waldheim, 2016, p. 15) and the main parameter of the contemporary urban condition (Graham & Marvin, 2001, pp. 8-16), prejudging the possibilities and the methods with which sustainable territorial development is soaked (Easterling, 2014, pp. 11-14, 18-21).

However, if the lack of appropriate sustainability tools impedes the sustainable rebalancing of territorial organisation, their existence alone does not guarantee the regulated transition of territories towards sustainability either (Rodrigue, Comtois, & Slack, 2013, pp. 1-8). In this regard, as the transition towards sustainability is undertaken under the urgency and pressure imposed by the extreme competition between metropolitan territories, it is speculative real estate development that materialises the material and immaterial global flows (Ascher, 1995, pp. 7-20). Thus, sustainability is reduced to a market-oriented doctrine for deregulated urban development (Dawson, 2017, pp. 15-16, 36, 39, 55).

1.3 Aim

Although institutional actors admit the existence of a generalised urban crisis as a result of real estate speculation and deregulated urban development, they also advocate that it can be treated as a temporary crisis that shall be resolved through targeted technical and policy measures that fall under the umbrella of sustainable urban development. However, the complexity of contemporary metropolitan territories requires an approach that can address the numerous economic, ecological, technological, and cultural links between urban development and sustainable planning (Karvonen, 2011, pp. 187-198). In this regard, even though environmental concerns about the sustainability of metropolitan territories are typically addressed by implementing technical and policy solutions, they are also deeply dependent from and interwoven with social, economic, cultural and political considerations (Gallon, 1987, pp. 83-84).

In this article I aim to concentrate on an exploration of the Athenian urban crisis that is centred on sustainable urban development plans, territorial planning institutions, and urban policies. To this end, I attempt to explain the phenomenon of urban crisis as a derivative of the failure of sustainability reforms. By illustrating how path-dependent institutions hinder policy change, I seek to highlight how and why a long-term vision of urban development based on the principles of sustainability appears difficult to achieve in the case of Athens. In a broader context, I also wish to contribute to the discussion around the attainability, scope and impact of sustainable urban development plans.

1.4. Hypothesis

Both institutional actors and a substantial number of academics agree that Athens has been facing an urban crisis since at least the beginning of the Greek financial crisis of 2009. This discourse is often conducted by resorting to technocratic and aesthetic arguments, and through a purely financial and architectural spectrum (Dragonas, 2011, pp. 12-15). My hypothesis is that as long as territorial planning is used as means towards speculative urban development, it will only be equivalent to that of a real estate facilitating mechanism. Instead of trying to explain how the urban crisis in Athens is an unfortunate by-product of last decade's breaking down of the Greek economic development model, I argue that in fact the urban development model of Athens has always been essentially the same. Moreover, this hypothesis suggests that the production and the consumption of urban space as a real estate commodity is an inherent characteristic of the prevailing urban development in Athens. Lastly, by pointing to the recurrent crises in Athens under the current development model, I attempt to highlight the ways that this model, as well as the role that institutions have in its shaping, is incompatible with any notion of sustainability.

2. Main Part

2.1. Disciplinary Approach

The interdependent urban systems composing Athens are created by a complex array of structures and agents, and take into account several and varied agendas (Varnelis, 2009, pp. 6-

17). Institutional theory can highlight the overarching systems of values, traditions, norms, and practices that shape or constrain territorial transformation, providing analytical assistance to the understanding of the direction, objective, and meaning of the processes unfolding on metropolitan territories (Peters, 1996, pp. 205-220). The identification of critical junctures and link sequences as conditioning factors of the urban development path of Athens (Karidis, 2008, pp. 15-22) facilitates the understanding of how the institutions that currently direct sustainable policies in Athens have been shaped. These institutions have been forged through a long path-dependent accumulation process of rules, laws, norms, incentives and social relations, as well as contradicting responses to prior critical junctures (Connolly, 2018, pp. 8-11). As a result, some structures are more conducive to sustainability transitions than others (Hansen & Coenen, 2015, pp. 92-109).

The involvement of international organisations and private actors in the planning process of Athens has also resulted in policy transfer, which encouraged specific mechanisms for dealing with urban processes. In this regard, the failure of policies that set sustainable urban development as the way to achieve sustainability goals in Athens can be attributed either to the incomplete implementation of such policies without considering local sensitivities and inherent institutional drift (Torfing, 1999, pp. 290-291) or to the choice of an inappropriate solution, which path-dependent institutions could not implement (Dolowitz & Marsh, 2000, pp. 5-23).

2.2. Methodology

By making use of historical institutionalism, I attempt to identify and examine the critical junctures in the urban history of Athens, as well as the link sequences that have shaped the urban development path of Athens. To this end, I explore and compare the ideas, challenges, narratives and discourses of formal and informal actors at a national and local level. This includes not only the official version of the Athenian urban history, but also its informal version and aspects. In addition, I examine whether and to what extent a process of -coercive or imposed- ideological transplanting occurred, mainly by analysing the predominance of international organisations and of global economic factors and actors to the detriment of national and local agendas (Dolowitz & Marsh, 1996, pp. 343-357). Furthermore, I investigate the adoption and advocacy for specific urban policies and legal frameworks as "best practices", as well as the development of new planning bodies and mechanisms (Moran, 2010, p. 27). To this end, I assess institutional interdependence and global policy networks by examining specific sustainable policy adjustments and reforms (Stone, 2004, pp. 545-566) at all levels of territorial planning in Athens, as well as the role that these policies accord to urban development. These are in turn juxtaposed to the recurrent and prevailing practices of urban development in the metropolitan territory of Athens, throughout its urban history. The limitations of this article impose mostly a synthesis and juxtaposition of data gathered by secondary sources. However, primary sources have been used when and where it was necessary and feasible.

2.3. Findings

Athens amasses over one third of Greece's population and half of the country's industrial and tertiary production (Economou, Petrakos, & Psycharis, 2016, pp. 193-216). However, its economic, political and cultural hinterland roughly coincides with the rest of the Greek state. Athens is therefore a Dynametropolis, whose pressures accumulate people and activities spatially and materially while polarising international, physical and symbolic flows (Doxiadis, 1968, pp. 26-30). This has resulted in a peculiar landscape of densely packed suburbs, seasonally occupied exurbs, seaside touristic units, infrastructure space along the main networks, industrial and tertiary enclaves and exclaves, and speculative agricultural installations, extending for tens, or even hundreds of kilometres from the city centre (Burgel, 2002, pp. 20-21). Oddly enough, up until the early 2000s, Athens had been credited also with one of the lowest competitiveness indicators in Europe, due to what was considered a variety of endemic factors.

Often portrayed in negative colours, the urban development of Athens has been characterised as "unplanned", "wild" and "spontaneous", permitting the creation of an enlarged middle class and bridging the social, ideological and cultural differences of the interwar period (Theocharopoulou, 2017, pp. 9-18). Contrary to these preconceptions implying the lack of a higher-level agency and the employing of a random procedure, the urban condition of Athens may be explained better by the antithesis between the tactics employed by societal agents in their attempt to claim their right to participate in the transformation of the city (Lefebvre, 1996, p. 158) and the obligation of authorities to adopt and implement coherent sustainable planning policies. It is also characterised by the pivotal role that has been accorded to infrastructure as a key regulating mechanism ensuring the sustainability of territories but also as a tool facilitating the deregulation of territorial development by normalising the application of market rationale (Cluzet, 2007, pp. 18, 27-28).

Athens became the capital of the Greek state in 1834, largely serving symbolic, political and economic motives that necessitated the existence

of a distinct centre, which could exercise control over the Greek territory. The Ottoman town grew rapidly into a large Balkan city with its references to the West, despite the internal turmoil, expansion wars and bankruptcies that occurred during the 19th century. The political and economic instability that was the main characteristic of this period is considered to be the principal reason discouraging investment in productive sectors and turning private investors towards the construction sector. At the same time, however, these same conditions limited the financial capabilities of the Greek state and the city would not acquire adequate urban infrastructure until as late as the early 20th century. Furthermore, the first city plan of Athens that was drafted by the architects Kleanthis and Schaubert might have predicted and provided for extensive green areas and a large archaeological zone around the Acropolis, however, the aggressive reactions from the landowners whose properties and speculative interests were affected led to it never being implemented. Shortly after, a new, more modest city plan by the architect Klenze was approved based on the earlier version, only for it to never being implemented in its totality, as well (Karidis, 2014, pp. 85-130).

The critical juncture establishing Athens as a metropolis was the effort to integrate a large number of the Asia Minor refugees in 1923, which resulted in almost doubling its population. The Interwar period saw the implementation of a broad urbanisation operation aiming at their integration into the Athenian society, which prompted the first successful effort to equip the city with industrial installations. The introduction of reinforced concrete, already from the beginning of the century, as well as its progressive generalised application in the wider sector of construction facilitated and steadily promoted the construction of multi-storey buildings. In 1929, the enactment of a specific law advancing the institution of horizontal ownership and vertical segregation of buildings permitted rights of co-ownership of the entire lot for the first time and gave birth to the first apartment blocks (Εφημερίς της Κυβερνήσεως [Government Gazette], 1929). The first State Construction Code, which went into effect the same year, significantly impacted the morphology of the structures, by introducing a strict standardisation in the organisation of the storeys and of the facades (Εφημερίς της Κυβερνήσεως [Government Gazette], 1929). This resulted in the distinct typology of the Greek version of the apartment block, the "polykatoikia" that would be multiplied all across the Athenian territory. At the same time, the institution of the "antiparochi", a uniquely Greek arrangement, whereby the owner of a building plot or smaller building was compensated with new apartments in lieu of payment for the land that he relinquished to the contractor who built a "polykatoikia" on it, was responsible for the massive explosion in the built environment and the ultimately speculative increase of land value. However, this extremely productive period for the private construction sector could not be met by the necessary infrastructure projects due to the inability to secure funding during the Great Depression (Skagiannis & Kaparos, 2013, pp. 12-65). Therefore, the implementation of metropolitan planning was abandoned, by tolerating the already existing laissez-faire attitude (Karidis, 2015, pp. 125-184).

The 1950s found the country ravaged from a brutal foreign occupation and a disastrous civil war. The Greek authorities sought to ensure internal political stability, while having to address the reconstruction of almost the entire pre-war infrastructure and the depopulation of large parts of the Greek countryside, with a crumbling post-war economy. Immediately after the war, US officials supported and coerced Greek governments actively into applying some kind of "aided self-help" programme on several occasions. In fact, American consultants and experts involved in the Greek reconstruction "experiment" did not only expect the restoration of the destroyed settlements but also the internal stabilisation of the country, the diffusion of free-market norms and policies, and eventually the smooth integration of Greece into global post-war capitalism. Therefore, the role of the capital city as the control centre of the country was consolidated predominantly by allowing an informal and self-regulated urban development process to materialise in Athens (Heidenreich, Chtouros, & Detlev, 2007, pp. 11-35). This occurred through the extensive expansion of Athens by means of arbitrary and often illegal settlements, called "afthaireta", that were a posteriori legalised and incorporated into the city. Once officially recognised and incorporated into the urban fabric, the "afthaireta" would acquire legal planning rights and could be further densified, in most cases, by applying the institution of the "antiparochi". The increasing housing needs were met without a welfare programme and no serious social housing programmes were ever undertaken, even though almost a quarter of the pre-war housing units had been destroyed. This resulted in the massive reconstruction of Athens and the consequent rapid economic recovery of the country happening with minimum state intervention (Paschou, 2008, pp. 38-42). In less than three decades, Athens tripled its size and population but lacked a coherent metropolitan planning policy. What became clear during the post-war wave of construction, was the emergence of a new branch of the Greek economy, that of the construction capital. The construction sector became the most significant part of the economy, often being labelled as "Greece's heavy industry", indirectly implying that

it made up for the lack of an actual heavy industry, as well as the "locomotive" of the Greek economy, mainly because it set the rhythm of growth of the national economy.

By the end of the 1970s, Athens had achieved a 65% ratio of owner-occupied dwellings, leaving the renting of property only to tertiary students and newly-arrived immigrants (Emmanuel, 1994, p. 348). Several inhabitants of the extremely dense inner city embarked in a first wave of suburbanisation that could not be accompanied by public transportation infrastructure, thus depending solely on car mobility. The introduction of regulatory planning mechanisms and of the first regulatory plan for the region of Attica in the early 1980s, as well as the investment in large infrastructure projects across the country and the institutionalisation of sustainability in the late 1990s, attempted to halt the alarming population growth of Athens. This soon proved to be detrimental to both the city centre and its periphery, as it favoured an intense phenomenon of sprawling of the already existing Athenian population. Conversely, the Athens 2004 Olympic Games encouraged the shifting of national and regional policy towards the objective of raising the competitiveness of Athens and modernising its infrastructure (Economou, Getimis, Demathas, Petrakos, & Pyrgiotis, 2001, pp. 329-346). The allocation of significant funds for the realisation of flagship development and infrastructure projects, as well as the amendment of the metropolitan planning framework with fast-track methods, aimed at overcoming the lack of a National Cadastre and of a Forest Registry while minimising delays in the planning implementation processes. However, this also triggered an even more deregulated, third wave of diffused urbanisation whereby construction either preceded planning or speculatively followed public investments (Chorianopoulos, Pagonis, Koukoulas, & Drymoniti, 2010, pp. 249-259). Similarly, the economic crisis that Greece is currently experiencing provides a pretext for employing a strategy of deregulation and exceptional measures, with permanent rather than temporary characteristics (Gunder, 2010, pp. 298-314).

Despite facing unprecedented levels of vulnerability to forest fires and flash floods, planning processes and infrastructure projects in Athens either ignore or bypass altogether the required environmental impact assessments, by giving much greater weight to the word "development" rather than the word "sustainable" (OECD, 2009, pp. 15-16). The institutional system of urban planning in Greece is currently defined by the segmentation of urban planning actors and the fragmentation of urban decision-making within a strongly centralised administrative context bound to conform to EU strategic planning and environmental legislation. Moreover, the informal intervention of social actors in the urban planning process is significant, which renders the official procedures of public consultation auxiliary or even irrelevant (Giannakourou, 2004, pp. 51-60). Over the years, this has increasingly favoured speculative urban development in detriment to any notion of sustainability. At least 77% of the settlements in the country are estimated to be unplanned, while 11% among them are situated still beyond any regulatory consideration. From 1983 till 2013, at least four laws "legalising" the "afthaireta" have been introduced, each and every time declaring the "temporary" and "final" nature of these legal provisions. The last law is still in force today, having been extended for the seventh time (Εφημερίς της Κυβερνήσεως [Government Gazzette], 2013). These laws have poured billions of Euros into state treasuries, in order to repay the national debt, and their constant extension showcases that putting an end to the urban anarchy is not their primary goal. Moreover, the ratification of the New Regulatory Plan for the Athens-Attica Region characterised a series of existing woodlands as metropolitan parks, where new planning regulations could be applied, permitting sports, cultural and leisure activities inside the parks. At the same time, in the Hellinikon former airport site, which was initially supposed to become a large metropolitan park, the construction of 10,000 new housing units for 25,000 inhabitants, 7 hotels, 2 shopping malls, a casino and a convention centre has been approved (Εφημερίς της Κυβερνήσεως [Government Gazzette], 2014).

These contradictions introduce a peculiar approach to the regulation of space, whereby "obsolete" regulatory mechanisms and plans are kept in force and are modified through ad hoc procedures in order to accommodate infrastructure and development projects (Stathakis & Chatzimichalis, 2004, pp. 26-47). The literature has attributed the peculiar conditions that shape the sustainable planning institutional framework of Athens to the ideological and cultural clash between the persistence of traditional practices and the call for modernity (Prévélakis, 2000, pp. 31-34, 124-125), the implementation of a peripheral model of capitalism based on the accumulation of capital through speculative land development (Sarigiannis, 2000, pp. 12-14, 232-233, 244-262), as well as to the socio-political similarities of the Athenian urbanisation process to those of cities in other Mediterranean (Leontidou, 1990, pp. 7-13, 100-108) and Latin American countries (Petropoulou, 2011, pp. 8-9, 13, 30-31, 40-41). The recurrent theme in the literature is that of an interaction between formal and informal institutions, which materialises in a mobilisation of the territories around Athens through policy and infrastructure (Burgel, 1976, pp. 25-53).

3. Conclusion

In this article I attempted to complement and address a gap in the existing literature, by examining the Athenian process of territorial development in relation to the objectives, methods and shortcomings of the Athenian planning policy mechanisms. Contrary to the limitations of the past, primary data have now become easily accessible, thanks to technological advances, digital platforms and the digitalisation of public data and archives, which are now accessible to the public. With the aid of specialised software, a large quantity of these data can be filtered, compared and synthesised, within a more reasonable timeframe. Moreover, several educational and research institutions have contributed to the pool of secondary data, while investigative journalism and reporting, as well as specialised academic conferences, have significantly improved the development of a critical discourse around the research question. This means that potential researchers of the Athenian urbanisation process may find it easier than before to conduct their research on the topic.

Despite the more favourable settings under which this research was conducted, my principal goal in this article was limited to identifying and clarifying the general context under which the success or failure of sustainable planning in Athens occurs. This goal, however, is part of a broader objective that attempts to illuminate the relation between planning policies and factual urban development, as well as to assess its territorial impact in terms of sustainability. On an even broader context, this objective has the potential to help develop a critical reflection on how projects, plans, territories and sustainability should be approached. In this regard, further future research on the subject will enable the adoption of a critical approach in the study of sustainable territorial planning, by making use of a broader methodological toolset, and by expanding the analysis to more than one case study.

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Conflict of interests

The Author declares no conflict of interest.

References

Ascher, F. (1995). *Métapolis ou l'avenir des villes [Metapolis or the future of cities]*. Paris: Editions Odile Jacob.

Burgel, G. (2002). *Le Miracle Athénien au XXe Siècle [The Athenian Miracle in the 20th Century]*. Paris: CNRS Editions.

Burgel, G. (1976*). Αθήνα, Η Ανάπτυξη μιας Μεσογειακής Πρωτεύουσας [Athens, The Development of a Mediterranean Capital]*. (P. Linardos-Rylmon, Trans.) Athens: Exantas.

Chorianopoulos, I., Pagonis, A., Koukoulas, S., & Drymoniti, S. O. (2010). Planning, Competitiveness and Sprawl in the Mediterranean city: The case of Athens. *Cities,* 27 (4), pp. 249-259. https://doi.org/10.1016/j.cities.2009.12.011

Cluzet, A. (2007). *Ville Libérale ou Ville Durable? Répondre à l'Urgence Environnementale [Liberal City or Sustainable City? Responding to the Environmental Urgency]*. Paris: Editions de l'Aube.

Connolly, J. J. (2018, March 1). From Systems Thinking to Systemic Action: Social Vulnerability and the Institutional Challenge of Urban Resilience. *City & Community*, 17, pp. 8-11. https://doi.org/10.1111/cico.12282

Davis, M. (2006). *Planet of Slums*. London / New York, NY: Verso.

Dawson, A. (2017). *Extreme Cities*. London: Verso.

Dolowitz, D., & Marsh, D. (1996). Who Learns What from Whom: A Review of the Policy Transfer Literature. *Political Studies*, 44 (2), pp. 343-357. https://doi.org/10.1111/j.1467-9248.1996.tb00334.x

Dolowitz, D., & Marsh, D. (2000). Learning from Abroad: The Role of Policy Transfer in Contemporary Policy-Making. *Governance*, 13 (1), pp. 5-23. https://doi.org/10.1111/0952-1895.00121

Doxiadis, C. A. (1968). ECUMENOPOLIS: Tomorrow's City. In E. Britannica (Ed.), *Britannica Book of the Year* (pp. 26-30). Chicago, IL: Encyclopædia Britannica, Inc.

Dragonas, P. (2011). *In greeklish: Στοιχεία καταγωγής της νεώτερης αρχιτεκτονικής στην Ελλάδα [In greeklish: Elements of the ancestry of contemporary architecture in Greece]*. Athens: Θέματα Χώρου + Τεχνών [Topics of Space + Arts]

Easterling, K. (2014). *Extrastatecraft: The Power of Infrastructure Space*. London / Brooklyn, NY: Verso

Economou, D., Getimis, P., Demathas, Z., Petrakos, G., & Pyrgiotis, Y. (2001). *Ο Διεθνής Ρόλος της Αθήνας [The International Role of Athens]*. Volos: University of Thessaly Press

Economou, D., Petrakos, G., & Psycharis, Y. (2016). National Urban Policy in Greece. In L. Vanden Berg, E. Braun, & J. Van der Meer (Eds.), *National Policy Responses to Urban Challenges in Europe* (pp. 193-216). Oxfordshire / New York, NY: Routledge.

Emmanuel, D. (1994). *On the structure of housing accumulation and the role of family wealth transfers in the Greek housing system*. London: Routledge.

Gallon, M. (1987). Society in the Making: The Study of Technology as a Tool for Sociological Analysis. In W. E. Bijker, T. P. Hughes, & T. J. Pinch (Eds.), *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology* (pp. 83 84). Cambridge, MA / London: The MIT Press.

Giannakourou, G. (2004). The Implementation of EU Environmental Policy in Greece: Europeanization and Mechanisms of Change. In D. G. Dimitrakopoulos, & A. G. Passas (Eds.), *Greece in the European Union (Europe and the Nation State)* (pp. 51-60). London / New York, NY: Routledge.

Graham, S., & Marvin, S. (2001). *Splintering Urbanism*. Oxfordshire: Routledge.

Gunder, M. (2010, 11). Planning as the Ideology of (Neoliberal) Space. *Planning Theory* (9), pp. 298-314. https://doi.org/10.1177/1473095210368878

Hansen, T., & Coenen, L. (2015). The Geography of Sustainability Transitions: Review, Synthesis and Reflections on an Emergent Research Field. *Environmental Innovation and Societal Transitions* (17), pp. 92-109. https://doi.org/10.1016/j.eist.2014.11.001

Heidenreich, E., Chtouros, S., & Detlev, I. (2007). *Αθήνα: Η Κοινωνική Δημιουργία μιας Μεσογειακής Μητρόπολης [Athens: The Social Creation of a Mediterranean Metropolis]*. Athens: Kritiki.

Karidis, D. N. (2008). *Τα Επτά Βιβλία της Πολεοδομίας [The Seven Books of Urban Planning]*. Athens: Papasotiriou.

Karidis, D. N. (2014). *Athens from 1456 to 1920: The Town under Ottoman Rule and the 19th Century Capital City*. Oxford: Archaeopress.

Karidis, D. N. (2015). *Athens from 1920 to 1940: A true and just account of how history was enveloped by a modern city and the place became an event*. Oxford: Archaeopress.

Karvonen, A. (2011). *Politics of Urban Runoff: Nature, Technology, and the Sustainable City*. Cambridge, MA / London: The MIT Press.

Koolhaas, R. (2014, September 24). My thoughts on the smart city. (E. Commission, Ed.) Retrieved March 28, 2019, from *Digital Minds for a New Europe*: http://ec.europa.eu/archives/commission_2010-2014/kroes/en/content/my-thoughts-smartcity-rem-koolhaas.html

Lefebvre, H. (1996). *Writings on Cities*. (E. Kofman, & E. Lebas, Trans.) Oxford / Malden, MA: Blackwell Publishers.

Leontidou, L. (1990). *The Mediterranean City in Transition: Social Change and Urban Development*. Cambridge: Cambridge University Press.

Moran, M. (2010). Policy-Making in an Interdependent World. In C. Hay (Ed.), *New Directions inPolitical Science: Responses to the Challenges of an Interdependent World* (p. 27). Basingstoke: Palgrave Macmillan.

OECD. (2009). *OECD Environmental Performance Reviews: Greece* (pp. 15-16). Paris: OECD. https://doi.org/10.1787/9789264061330-en

Paschou, A. (2008). *Urban block in post-war Athens: Development, form and social context*. (pp. 38- -42). Zürich: ETH Zürich. https://doi.org/10.3929/ethz-a-005810305

Peters, B. G. (1996). Political Institutions, Old and New. In R. E. Goodin, & H.-D. Klingemann (Eds.), *A New Handbook of Political Science* (pp. 205-220). Oxford: Oxford University Press.

Petropoulou, C. (2011). *Développement Urbain et Eco-Paysages Urbains: Une Etude sur les Quartiers de Mexico et d'Athènes [Urban Development and Urban Eco-Landscapes: A Study of the Neighbourhoods of Mexico and Athens]*. Paris: L'Harmattan.

Prévélakis, G. (2000). *Athènes: Urbanisme, Culture et Politique [Athens: Urbanism, Culture and Politics]*. Paris: L'Harmattan.

Rodrigue, J.-P., Comtois, C., & Slack, B. (2013). *The Geography of Transport Systems*. New York: Routledge.

Rogerson, R., & Boyle, M. (2000). Property, politics and the neo-liberal revolution in urban Scotland. *Progress in Planning*, 54 (3), pp.133-196. https://doi.org/10.1016/s0305-9006(00)00011-8

Sarigiannis, G. M. (2000). *Αθήνα 1830 - 2000: Εξέλιξη - Πολεοδομία - Μεταφορές [Athens 1830--2000: Evolution - Urbanism - Transports]*. Athens: Symmetria Editions.

Skagiannis, P., & Kaparos, G. (2013). Τα έργα υποδομών στην Ελλάδα και η παρουσία των μεγάλων έργων μεταφορικών υποδομών: Μεταβαλλόμενα υποδείγματα & προτεραιότητες [Infrastructure projects in Greece and the presence of large transport infrastructure projects: Changing patterns & priorities]. *Επιστημονικό Περιοδικό Αειχώρος [Aeichoros Scientific Magazine]*, (18), pp. 12-65. Retrieved from: http://www.aeihoros.gr/issues/el/issue/aeixoros-18

Stathakis, G., & Chatzimichalis, K. (2004). Αθήνα Διεθνής Πόλη: Από την Επιθυμία των Ολίγων στην Πραγματικότητα των Πολλών [Athens International City: From the Desire of the Few to the Reality of the Many]. *Geographies*, 7, pp. 26-47. Retrieved from: http://estia.hua.gr/file/lib/default/data/346/theFile

Stone, D. (2004). Transfer Agents and Global Networks in the "Transnationalization" of Policy. *Journal of European Public Policy*, 11 (3), pp. 545-566. https://doi.org/10.1080/1350176041000169429 1

Theocharopoulou, I. (2017). *Builders, Housewives, and the Construction of Modern Athens*. London: Black Dog Publishing Limited.

Torfing, J. (1999). *New Theories of Discourse: Laclau, Mouffe and Zizek* (1st ed.). Oxford / Malden, MA: Wiley-Blackwell.

Varnelis, K. (2009). *The Infrastructural City: Networked Ecologies in Los Angeles*. Barcelona / New York, NY: Actar.

Waldheim, C. (2016). *Landscape as Urbanism: A General Theory*. Princeton, NJ / Oxfordshire: Princeton University Press.

Εφημερίς της Κυβερνήσεως [Government Gazette]. (1929). *Περί της Ιδιοκτησίας κατ' Ορόφους - ΦΕΚ 4/Α/09-01-1929, Νόμος 3741/1929 [On Property Ownership of Storeys - GGI 4/A/09-01-1929, Law 3741/1929]*. Athens: Εφημερίδα της Κυβερνήσεως [Government Gazette]. Retrieved from: http://bit.do/e3sJP

Εφημερίς της Κυβερνήσεως [Government Gazette]. (1929). *Γενικός Οικοδομικός Κανονισμός - ΦΕΚ 155/Α/22-04-1929 [State Construction Code - 155/A/22-04-1929]*. Athens: Εφημερίς της Κυβερνήσεως [Government Gazette]. Retrieved from: http://bit.do/e3sJ8

Εφημερίς της Κυβερνήσεως [Government Gazzette]. (2013). *Αντιμετώπιση της Αυθαίρετης Δόμησης - ΦΕΚ 174/Α/08-08-2013, Νόμος 4178/2013 [Measures Against Illegal Constructions - GGI 174/A/08-08-2013, Law 4178/2013]*. Athens: Εφημερίς της Κυβερνήσεως [Government Gazzette]. Retrieved from: http://bit.do/e3sKm

Εφημερίς της Κυβερνήσεως [Government Gazzette]. (2014). *Νέο Ρυθμιστικό Σχέδιο Αθήνας Αττικής - ΦΕΚ 156/Α/01-08-2014, Νόμος 4277/2014 [New Regulatory Plan of Athens-Attica - GGI 156/A/01-08-2014, Law 4277/2014]*. Athens: Εφημερίς της Κυβερνήσεως [Government Gazzette]. Retrieved from: http://bit.do/e3sKy

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Towards A Post-Traumatic Urban Design That Heals **Cities' Inhabitants Suffering From PTSD**

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ABSTRACT

Cities are generally in a state of constant modification. Some experience this modification at a more rapid pace due to the technology available in the city; others experience this modification due to the city's time of life, which requires many civilizations to imprint their architectural style and project their social image and identity. In certain cases, these modifications are due to natural disasters, such as earthquakes or tsunamis, or man-made wars, or even both. The study revealed that the relationship found between the ability of "Beirutis" (how Beirut's original inhabitants call themselves) to perceive their identity through the built environment and PTSD, will help urban planners and architects find the procedures based on observation and scientific facts to build with the opportunity to heal disaster-torn cities' inhabitants from PTSD.

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1.Introduction

"With a better understanding of the contributing factors to posttraumatic stress, we can increase our capacity to design in a way that is both sympathetic to this altered state and conducive to healing" (Finn, 2013).

Humans have always tried to imprint their interventions through the visible structure in an attempt to defy natural and man-made disasters. To "control" hurricanes, earthquakes, or floods, people have *built* the solution. People have even *rebuilt* their controlling solutions after being defeated or having defeated and occupied others' lands or countries, reflecting through it the state's power and identity by means of a city (Shaw, 2008). Therefore, throughout the centuries, people have found themselves spending their lives inside the man-made environment and even surrounded by it (Kopec, 2012).

In attempts to correct the natural or man-made urban problems, the growing built environment shaped the adapting inhabitants' interaction in the urban milieu, through the creation of visible (architectural) and invisible (social and psychological) bulwarks (Kopec, 2012).

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Moreover, throughout these evolving architectural processes, there were professionals from the social, philosophical, medical, and architectural fields who proved the interdependent relationship between the human and the environment, on the one hand, and the natural and built environment, on the other. At the present time, recent findings are leading professionals to support the environmental conservation or upkeep that leads to sustainable solutions healthily balancing the built environment and the inhabitants' well-being (Kopec, 2012). Looking in-depth for the reasons of cities' urban development, observations and scientific results show that people have a cycle of creating needs for themselves and working hard to find suitable solutions (Kopec, 2012). As a result, there are series of emotions that become specific of the inhabitants of a specific city (Roessler, 2012).

To examine the relationship between architecture and the mental state of people, the referral to findings related to neuroscience and mental illnesses is incontestable. In effect, according to the Lebanese psychiatrist Dr. Elie Karam, much research was conducted to map out the brain and its specific activities during specific events, and genes and stressors were examined in-depth. Dr. Karam added that "therapy is no longer an art but a solid science, subjected to the scrutiny of an army of researchers" (Karam, n.d.).

Consequently, the focus of this study will be the scientific findings of mental state and architecture related to man-made disasters, specifically wars. The answers of a community regarding their perception of their city's prewar and postwar built environment in this context help to show the mental process of archiving memories and interpreting events through individual and collective memories of war. In effect, war can be described as a public event that can intrude private aspects of life and where all the inhabitants of a city are concerned and touched in one way or another. In other words, war can compose a barrier forbidding people to go to the place of the work they would prefer or to see people close to them. It can destroy memories and build other memories or force the building of certain memories through several ways. Furthermore, another consequence of a city's destruction is the overattachment to or complete detachment from the space.

The process for the study, first, will be defining post-traumatic stress disorder (PTSD) and its effect on memory. Subsequently, its symptoms will be linked to the traumas of war. The specific case of Beirut in its architecture, urban development, and traumatic events throughout history will be developed. Then the concept of therapy through architecture supported by neuroscience findings will be expounded. A random sample from Beirutis (how Beirut's original inhabitants call themselves) will be analyzed; the results will be supported by past literature in the field of psychiatry and architecture, and as a final point will be expanded the ways of healing cities' inhabitants suffering from PTSD through architecture and urban planning.

Thereby, many questions can cover the study in its multiple facets. The judgment of the city's inhabitants as to whether they find their city disfigured or well renovated in its public spaces and private spaces is to be taken into consideration in this case.

2. Post-Traumatic Stress Disorder (PTSD) and Memory

According to the National Institute of Mental Health, PTSD occurs when people do not overcome the fear they have felt during an event they were not prepared to live through (The National Institute of Mental Health Information Resource Center, n.d.) or that is life threatening (American Museum of Natural History, 2011). These events can be the experience of physical harm or emotional harm caused by nature (e.g., seism) or another person (e.g., war) for one time or on a repetitive basis that cumulates and causes complex trauma (Pavlakis, 2017; The Center for Treatment of Anxiety and Mood Disorders, 2017). Therefore, people could suffer from remembering the experience, which affects their quality of life and at times the life of their partners and families too. Some people recover, while PTSD can become chronic for others if they are more vulnerable according to their character or their life defying conditions (The National Institute of Mental Health Information Resource Center, n.d.). Generally, a longer period of exposure to the traumatic event and its frequency affects the severity of the PTSD (Kessler et. al, 2017). Therefore, in war zones, all categories of people who have to stay and watch the attacks or be attacked, or people who have to leave all their belongings and escape, are subject to PTSD if adequate resources are not available to help them heal, such as mental therapy and a suitable urban plan to restore all the destruction.

In the matters of the visual, the shapes that do not refer to configurations easy to discern by the brain, such as half-destroyed houses, require visual efforts, which can lead to a degree of disturbance (Albright, 2012) that affects the memories that people's brains process. In fact, memory can be healthy or traumatized. The healthy memory adapts according to circumstances and contexts (Cyrulnik, 2012) and builds short-term and long-term evolutive memory (Finn, 2013; Cyrulnik, 2012). On the other hand, the traumatic memory is a "torn" memory recounting a trauma (an event not expected and not prepared to experience)

(Cyrulnic, 2012). When any object or event reminds the traumatized person of the memory that has occurred, the process of the present situation adaptability leads to a "fight or flight" response or to immobility, whereby the traumatized people observe without reacting because the brain is convincing these people of their vulnerability for survival purposes (Finn, 2013; Wellness & Performance, 2011). Thus, this process becomes a dissociated memory in their brains that is used as an implicit memory, linking the present situation to the physical and emotional memories of the traumatic situation (Finn, 2013).

3. The Case of Beirut

3.1 *Architecture and the Community's Identity*

Beirut has always been a looked-for city by people around the world. Beirut has especially witnessed its turning point when it became a capital during the Ottoman's occupation, when its commune features changed to become urban as it was the case for some European cities' development during the 1880s (YaBeyrouth, 2019). Unfortunately, it was scarred from a massive "civil war" from 1975 to 1990.

No matter the true political story behind this war, the first thing that strikes when discovering the city is that urban discontinuity based on sectarianism and religious enclaves is found today in Beirut. However, the disparities nowadays no longer rise in religious differences that were the "superficial" excuse to fire; rather, on one side, they lie in the preservation of architectural heritage and the possibility of its projection in the new buildings, and, on the other side, in the demolition of old buildings under the presumption of their danger of falling and in the construction of high-rise buildings that reflect economic consumption and do not relate in any architectural element to the history of architecture in Beirut. In fact, what happened regarding the rise of Beirut is a mixture of construction (of the new), reconstruction (which is more a renovation to some traditional Beiruti houses), and, as the Lebanese architect Serge Yazigi, who is a Beiruti living in Beirut, mentioned in a private interview, "deconstruction" because some architectural icons were destroyed after the war and some elements were built in Beirut without having a fluid interconnection within its urban tissue (Yazigi, 2018). Furthermore, during the period of stagnated urban development, the souk of Beirut was fragmented, and business owners moved their stores to the housing area of the city. This is one of the aspects of the adaptive urbanism that was adopted in Beirut, which is also referred to as "Morphogenesis" (Hanna, 2016). Many researchers have defined this concept as a series of small steps in architectural changes in a city based on individual present-day needs and without a solid urban plan linking all parts of the city, which leads in the long term to a major urban transformation where people will find their city unrecognizable in terms of architecture, economy, and social life (Hanna, 2016). What happened in reality is that the armed groups during war marked the battle lines that became the real ones still dividing Beirut's area (Pascoe, n.d.; De Cauter, 2011) (Figure 1).

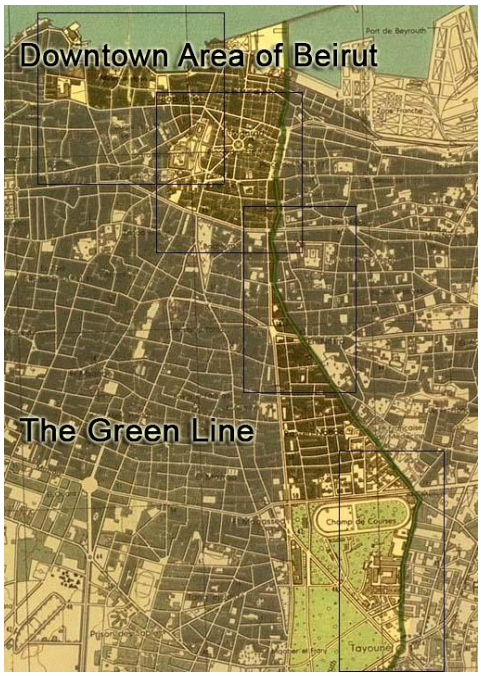

Figure 1. The green line is the separation line that is still virtually dividing Beirut's areas in people's memory. It is green since plants grew when the inhabitants fled due to the severe battles that occurred there. This line passed by the downtown (picture from Habib, Haagenrud, Ludvigsen, Møystad, & Saad (n.d.), annotation from Maria A. El Helou (2018)).

Following a survival mode to revive the once vibrant Beirut, the rapid expansion of Beirut after the 1990s was in fact occurring at the same time as other countries worldwide; hence, in normal cases, there would have been nothing to worry about. The only problem in Beirut's case lays in the fact that Beirut was just coming out of a war, and there was a need to reconstruct what was demolished. Many of the inhabitants expected to have the old Beirut rebuilt as it was, but the rapid expansion of the so called "contemporary city" worldwide made it impossible.

Beirutis tried to adapt and are still using this approach to forget the past. Yet, in reality, the contemporary city is not mitigating this task since it has become the place of this one goal: investment attraction using business redevelopment with a part being from foreign background (Pascoe, n.d.), which leads to multiple disparities of the city's image between the historical and the profit-oriented. In fact, according to Beiruti architect Mona Hallak, the decision from the concerned parties was to destroy 800 houses and buildings considered iconic of Beirut's symbolism, leaving only 220 of them (De Cauter, 2011). These houses

and buildings ranged between renovated and taken care of and abandoned with scars of destruction. As a result, the inhabitants of Beirut are not in control of what surrounds them because the decision-makers in the city are the ones who are deciding how the city must look like, and they are not looking in-depth into other aspects that might affect negatively the inhabitants of the constant lively city (Domeier & Sachse, 2015). For example, some Beirutis consider that in postwar Beirut was placed only an emphasis for economic profits (Pascoe, n.d.) leading to a neglect of the visual aspects of heritage. On the other hand, the private sector owns more plots in the present time than the municipality, which is increasing individual interventions and an aleatory horizontal and vertical urban expansion without an overall long-term urban planning distributing the functions needed and its amounts in each area.

All of these components affect the one identity of the city that creates a secured sense of a purposeful urban tissue and that leads to a genuine positive attachment linking the physical space with its true emotional and affective fulfillments, and not only a nostalgic attachment (Ujang, 2012; Scannell & Gifford, 2010). As a consequence, Beirutis become vulnerable and try to find healthy resilience (Surjan, Kudo, & Uitto, 2016). Hence, security and motivation are the dynamic agents that should be acting together to preserve a defined and clear identity of trust based on the city's structure (Pascoe, n.d.; Fawaz & Abou Akar, 2012).

3.2 PTSD Applied to the Case of Beirut

Even though PTSD affects a limited number of people witnessing a traumatic event (McLaughlin et al., 2015) children and adolescents exposed to war for only three weeks in their natal country can develop PTSD and/or "major depressive disorder (MDD), separation anxiety disorder (SAD), [or] overanxious disorder (OAD)" (Karam et al., 2014, p.192). In the case of Lebanon, 15 years of war and exposure to life-threatening attacks were enough for Lebanon to become the third country in the world with the number of people suffering from PTSD (Karam, n.d.) with an annual average of 11.2% in anxiety disorders (of which PTSD is part) (Karam, n.d.). In some severe cases, psychiatric comorbidity can occur, (McLaughlin et al., 2015) and traumatized people start predicting dangerous future events based on their past memories (Kessler et al., 2017) instead of relying on the reality as it is.

Being hypervigilant during war is good to avoid injury or death. However, the problem is that this state of hypervigilance and destructive memory does not go away for years, especially for predisposed people (Surjan et al., 2016; Brainline, 2012). As a result, people with PTSD are extremely cautious and focus on any detail, any sound, and any action (Cyrulnik, 2012), including the architectural details around them. In general, people worldwide, including Beirutis, were even taught that PTSD fades away after an average of six months (Brainline, 2012) and consequently, people convince themselves they are perfectly healthy and mask their state, considering it shameful if it persists. However, these people have the underlying feeling of danger around the built environment, especially the one that resembles the scenes of danger they witnessed (Finn, 2013). This feeling of danger includes seeing certain roofs, building entrances, and windows. Traumatized people can even be cautious of the floor and the sky or an opening through which bullets can pass (Finn, 2013). People who were directly involved in war (who participated in battles) are the ones to develop guilt and PTSD more than others and the tendency to commit suicide (Held et al., 2011, Hendin & Haas, 1991) and MDD (Marx et al., 2010). Thus, man-made disasters can lead to a spectrum of disorders and problems—but not necessarily illnesses in the way of thinking, speaking, feeling, and behaving (Roe, 2016). Therefore, cases in Beirut are not limited to illnesses, but are as well linked to problems.

4. Neuro-architecture as a Solution for Therapy Through Architecture

4.1 *Definition and Role*

'Neuro-architecture' is the discipline that came as a solution to study human brain processing of the built environment and human behavior and to analyze urban and architectural designs that improve people's well-being and productivity through brain neuroplasticity (Vecchiato et al., 2015, Edelstein, 2006). Nowadays, reducing mental problems and illnesses is being a part of the urban planning goals (Dougherty, Aparicio, & Reames, 2014) through observing people's reactions and analyzing their brain imaging in different built environments or using images of real environment landscapes to examine how the human brain processes buildings and spaces. Several technologies are used for that purpose such as neurophysiology, neuroanatomy, and functional brain imaging, and mainly the functional magnetic resonance imaging (fMRI) and the electroencephalography (EEG) (Albright, 2012; Vecchiato et al., 2015; Dance, 2017). Such technologies help to get objective results rather than relying solely on subjective interviews (Edelstein & Macagno, 2012). These techniques help architects see how urban and architectural shapes affect people psychologically because people perceive configurations and not random shapes (Gombrich, 1994). The brain is highly organized, and through the brain areas that are involved in

the built environment information process, measuring natural and built environment is possible (Albright, 2012). Consequently, a built environment stimulates specific emotions that define people's conscious or unconscious behaviors (Edelstein & Macagno, 2012). when they identify themselves in a particular place according to the "biocultural memories" or the maps that their brain nerves form (Zeisel, 2006; Robinson & Pallasmaa, 2015) to help judge the beauty and security of a place (Coburn, Vartanian, & Chatterjee, 2017) and give it a meaning to get individual and collective memories (Kellou-Djitli, 2013; Taylor-Hochberg, 2014). This human–place interaction is similar to human–human interaction, which leads to a particular attachment of the person to the place. The person therefore gives this place an identity through the relational and territorial dimensions of the community leading to the sense of fulfillment and social acceptance (Al-Hagla, 2009).

4.2 *The Case of Healing PTSD Through Architecture*

The purpose of architecture in this case study is to heal from PTSD symptoms to return to a state of safety and security. Therefore, studies are conducted on the human brain and reaction to external stimuli to design the architecture that prevents further mental problem and illness severity by measuring the degrees of arousal triggered in defined parts of the brain, although it is considered as complex as the complexity of modern architecture (Edelstein & Macagno, 2012). In fact, modern architecture and urban expansion concern all cities of the world, but the severity of the cases is where lies the difference. For example, Beirut must deal with traffic, pollution (as well as the "moral pollution" (Shaw, 2008) that the civil war has left in Beirut), and (un)planned expansion; but most importantly, it deals with the preservation of its architectural past that is becoming increasingly complicated (Karimi, 2013). Added to that is the complexity of the war that occurred in Beirut between 1975 and 1990 that was no longer limited to the usual weapons, but instead focused on destroying its interconnected urban fabric. By that, destroying a city is an "urbicide" that resembles a genocide (Shaw, 2008) where people could be living dead without being killed and act through unhealthy protective reactions (Wellness & Performance, 2011); where people become a figure of "inverse phantoms" whose bodies are still alive but whose souls are just surviving (De Cauter, 2011). They are somehow forced to forget their past and be invaded by new technologies that destroy the urban tissue rich with heritage (Shaw, 2008). The spectrum of symptoms and comportments are analogous (Finn, 2013). Moreover, the more the inhabitants of a city are satisfied in their lives, the more they develop social trust and develop the abilities to overcome illnesses and stressful events, which increases productivity and economic profits of a city (Charles, 2014). Thus, the same patterns adopted for an architectural and urban planning design could serve as a common therapy for most PTSD sufferers (Finn, 2013) and collaborative work would serve as a scientific solid base for architects to create the spaces that adapt to the simplest ways the brain processes them and labels the healthy ones (Albright, 2012).

The space that architects should create must reflect both familiarity (for security) and discovery (for motivation) through people's fluid adaptability of movement and communication, or, as art historian Gombrich said, "easy adjustment and easy arousal" (Gombrich, 1994). In fact, according to the environmental psychologists Pornin and Peeters, the fine line between motivational spaces and spaces of anxiety depend on: the intensity of stimulation of the human senses (e.g., visual), the clarity to "read" the whole architectural frame of a street or a city, the functionality of a space, and the easiness for people to understand why this space has been built (Pornin & Peeters, 2009). This frame offers for people the sense of control over the spaces so that they can feel that the spaces follow their freedom of action and their independence and that these are restorative spaces that will calm people and decrease their fatigue and stress (Pornin & Peeters, 2009). The interesting part of this work process is that the areas that are highlighted during brain imaging confirm the mental problem or illness to be worked on even though the concerned people are not conscious of the mental problem they have (Figure 2).

In the case of PTSD, people categorize urban and architectural elements and spaces as safe or dangerous. For example, they consider the doorway and narrow passageways as highly stress stimulating because they link it to what they call "the fatal funnel" that is usually a place where sudden attacks can occur (Finn, 2013).

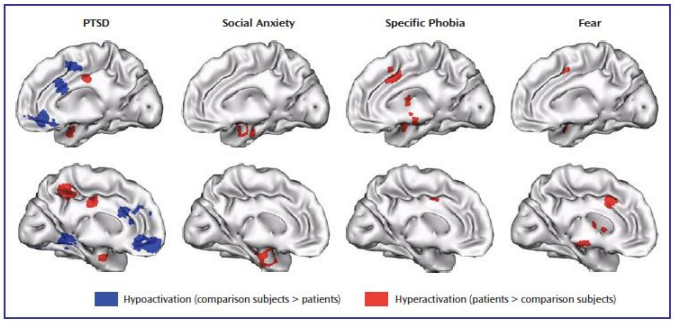

Figure 2. Brain imaging results of hypoactivation and hyperactivation due to PTSD and other mental problems and illnesses (Karam et al., 2008).

These are the brain areas to heal in people, conscious and not conscious of the mental problem they have, through architecture with the collaboration of neuroscientists.

5. Research Methods

The following methods were used in this study to find the correlation between the war in Beirut and the urban factors of Beirut as it is today and the relation with the severity of PTSD among its inhabitants. The participants are a stratified random sampling of 40 Beirutis still living in Beirut: 10 were adults during war (ages 21 and up), 10 were adolescents then adults (ages 12 and up), 10 were children then adolescents (ages 3 and up) and 10 were born after 1990. The ages are categorized in this way because the war lasted for 15 years and people experienced different life stages (age-wise) during war.

a. PTSD in Beirut: Past Study Results

For this study, past results of research are important to take into consideration to link after that PTSD, war, and the built environment based on the work of experts in the psychiatry field. The importance of these results lies in the fact they are based on studies that a team of Lebanese psychiatrists has conducted on around 3,000 adults who lived in Lebanon during the war (Karam et al., 2008). In fact, after their investigation based on a "World Health Organization (WHO) interview tool to diagnose mental health disorders" (Public Library of Science, 2008), these psychiatrists collected results based on the interviews in which they asked each participant to recount their traumatic events that occurred during war (Karam et al., 2008). Among the many results they unfolded, the most important results that support the current study are the following:

a. At least 25% of the participants who had different life conditions during the war (38% refugees, 55% civilians in war zones, and 18% witnesses of death or injuries) carried a mental disorder at a certain point in their lives, mainly due to war (Karam et al., 2008). The percentage of people suffering from mental disorders can be higher; however, due to the taboos or the lack of consciousness of having such illnesses, the participants could have answered that they are perfectly healthy (Karam et al., 2008).

b. Half of the participants who had anxiety disorders (PTSD included) received professional treatment; moreover, they were treated after a delay reaching 28 years (Karam et al., 2008).

c. Psychiatric healthcare in Lebanon is developed and, therefore, the awareness is to be highlighted to decrease taboos and untreated cases of mental illnesses (Karam et al., 2008).

b. *Questionnaires*

A questionnaire in formal Arabic consisting of the following five questions was distributed to the 40 participants to have a current data sample of PTSD symptoms:

1. Have you experienced or do you still experience nightmares and flashbacks of dangerous scenes? Are you still experiencing them now?
2. Are you feeling disconnected from others? Do you feel that others might harm you at any time?
3. Did you lose your interest in daily activities or things you liked to do? Do you see yourself isolated?
4. Do you feel yourself reacting often with anger? And/or hypervigilance?
5. Do you think that these symptoms are related to the urban change of Beirut?

c. In-depth interviews

Along with the questionnaires highlighting symptoms of PTSD among Beirutis, in-depth interviews in Lebanese Arabic language were conducted with this sampling. The purpose of the interview is to examine the effects of war on people with different living circumstances and to examine in which conditions PTSD is developed the most. During the interviews, users answered the following five questions:

1. How do you portray Beirut before the Lebanese civil war for a friend who has never visited it during that period and Beirut as it is today?
2. Are you attached to Beirut of the past or Beirut as it is today? Why?
3. Do you feel guilty for an event that happened during war?
4. Do you feel danger around you in a certain built environment? If yes, in which one?
5. What do you feel is missing to have an agreeable Beirut to stroll in?

d. *Visual Study*

During the interview, the participants were shown the same five photos of different past and present architectural elements specific to Beirut that usually Beirutis find significant according to the daily conversations with Beirutis and their comments on social medias (Figures 3, 4, 5, 6)

Figure 3. An aerial view of Beirut showing Martyrs' Square (in the middle) surrounded by the urban tissue known as the Beirut downtown in 1958 (photo of a postcard from Nidal Chouman's collection available at Beirut Heritage group, archived in 2017)

Figure 4. Photo of an abandoned traditional two-storey building in Ras el Nabeh region, Beirut (photo available at Beirut Heritage group, archived in 2017)

Figure 5. Photo of a traditional house in Saifi region, Beirut (photo by Ousama Sandid available at Beirut Heritage group, archived in 2017)

Figure 6. Photo in 2017 from the region of Ayn el Mreisseh, Beirut, to the Zeytuna Bay (Photo by Youssef Rached Doughan available at Beirut Heritage group, archived in 2017)

6. Results

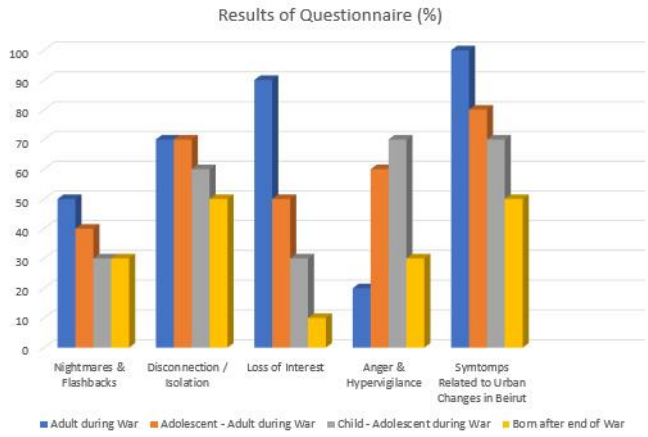

Figure 7. Results of the questionnaire showing degrees of PTSD symptoms among the participants according to their ages

Afterwards, the in-depth interviews conducted with the 40 Beirutis helped to support the analysis of the past literature and questionnaire's answers. Among the Beirutis interviews were ten warriors of war, five people who studied abroad in Europe and the United States of America during the war (for two to five years) and came back during the last five years of war (between 1985 and 1990) or after the war, three people who lost their businesses, five people who were kidnapped for several hours, three people who lost a family member due to random killing, four people who lived in denial of the war, and 10 university students who were born after 1990 and did not experience the war. The unexpected result is that no matter these people's positions and roles during the war, many answers were similar, which shows a solid collective memory in Beirut. With the questions and the pictures, the answers were as follows:

Portraying Beirut: All of the participants agreed that Beirut was more beautiful before 1975. They all also agreed that Beirut today lacks public spaces. Even 20% of the participants answered that "Beirut is a beauty queen that was forced to undergo unsuccessful plastic surgeries" and 10% answered that they "do not recognize the Beirut they have known anymore." They related this beauty to Beirut's houses or buildings with gardens and fountains. They also talked about the souks that had gathered people from all social and economic backgrounds: 75% of the participants said that "before war, Beirut was for everyone, especially the downtown souk" and 25% referred to the present souk as a "ghost town" available only for rich people and for tourists, mentioning the downtown that witnessed severe battles and is now missing the prewar crowd. Lastly, 80% admitted that they still call the areas of Beirut east and west; these names were given during the war and represented geographic and religion divisions.

Attachment to Beirut: From the responses, 60% of the participants said that "Beirut is Beirut" and that they are attached to it no matter how it is because they "love Beirut", while 20% said they are attached to Beirut of the past. Eight out of ten participants who were warriors during all the period of the war (from 1975 to 1990) or for several years answered that they are "not attached to anything" and that "life moves on."

Guilt: Unexpectedly, all of the participants feel guilty, except for the three businessmen who were bankrupted during war and said that the present circumstances are not helping them regain their business success. The ten warriors feel guilty for the innocent people who were killed during the war by them or by their fighting groups. The five participants who left during the war to study or work feel guilty for having left their parents and friends because when they returned they had a family member or a friend who died or got severely injured and had to go through recovery without their support. The 10 university students feel guilty because they could not do anything to preserve for their parents and grandparents the old Beirut they talk about with nostalgia. One of these university students said that he feels guilty because "traditional houses pictures remind me of a story that I will never live. These houses even know the stories of my parents more than I do". The five participants who were kidnapped feel guilty for having caused their families "the trauma of having been kidnapped" and for not being cautious enough at the time. The three people who lost a family member said that they feel guilty for not protecting enough the people they loved the most and constantly ask themselves "what if these innocent martyrs were not on the street at that particular time?". Even the four participants who were in denial during war "feel guilty for not trying to help anyone during [the] war and not even sympathizing with anyone."

Danger Feelings: Of the responses, 80% feel that they belong to certain neighborhoods but feel that they are strangers in different ones, categorizing these spaces between east and west Beirut; 25% of the participants even agreed that they still exhibit anxiety signs such as sweating or shaking when they go to the "other region," especially two of participants who were kidnapped, even after 28 years of peace. Lastly, 20% of the participants say that they do not feel anything negative because Beirut is for everyone.

Missing elements in Beirut: All 40 participants agreed on three elements: public squares, sidewalks, and green spaces for rest or free activities. Of the responses, 80% mentioned the possibility to reach the beach for free because in Beirut, "the private beach resorts are considering the seashore adjacent to their plot limits as their private property". In addition, 50% of the participants mentioned that the old abandoned houses that were affected during the war should be renovated through the support of the state because "these houses are a constant reminder of the frightening scenes of war".

Other answers: Of the responses, 35% of the participants considered that "this is not a civil war because many other countries were involved" as they explained during the interview that they had many friends from a different religion and they were helping each other during "these difficult times". Furthermore, 30% of the participants said they still live in their memories and "cannot see well the future in Beirut." Regarding the postwar downtown Beirut, 30% supported it whereas 70% were against this new place that "took the memory of our balad." (the Lebanese term for downtown is the term "balad" which means also "country" because the Lebanese considered that everything was found in the Beirut downtown as if the country's power and image relied on it). In fact, these people are in a state of "shock," as they said, "why do the investors not see that the architecture of Beirut in its uniqueness can attract tourists and raise our economy?". Lastly, 15% of the participants added that "international medias force us to believe that the situation is unstable, even if it is."

7. Solutions

Based on the results, Beirutis are defining themselves (identity, psychological state) the way they see their urban environment. Several urban solutions could be applied to the case of Beirut to enhance security and motivation:

7.1 Create an inclusive restorative built environment: Besides spreading awareness and

having effective trauma therapy techniques, the creation of dynamic spaces helps the constructive activity of the hippocampus, which is especially beneficial for adults who were children during war to form new memories. When urban design facilitates mobility and positive functioning for people with visible and invisible disabilities, people achieve a certain interior balance to get motivated and explore the outside world. These dynamic spaces are mentally restorative following people's constant dynamic change.

7.2 Create a long-term healing built environment that defines the meaning of freedom: Understanding the rights and limitations of freedom in Beirut in important to reflect moderate degrees of security measures in order to avoid dangerous incidents without feeling too surrounded with the safety procedures that could remind the traumatized people of war. One of the urban solutions would be to build an urban strategy where people participate in improving Beirut without falling into the individual initiatives and promote more for the public *collaboration to gain collective trust.*

7.3 Building on a human scale and promoting green mobility: Designing a pedestrian-friendly city (Albright, 2012; Gehl, 2010) with sidewalks and gardens and human-human and human-nature live contacts helps people become more positive, generous, and friendlier, especially when exposed to green spaces (Coburn, Vartanian, & Chatterjee, 2017; Charles, 2014) in a world where towers could lead. In fact, pedestrianism in places where small shops can open the door to the sidewalk enhances visual contacts between the indoors and outdoors in public places (Albright, 2012). This is where, according to Danish architect and urban design consultant Jan Gehl, people buffering against loneliness and alienation become more positive, walk slower, and initiate social contacts (Charles, 2014; Gehl, 2010). Buildings should have windows oriented to a green landscape and allowing a view of the sea and mountain that is still somehow available in the case of Beirut in small plots. This urban approach is very important for PTSD cases because the pedestrian-friendly city involves the emotions and aesthetics interaction and encourages exploration (Vecchiato et al., 2015) a healthy activity that improves the hippocampus healthy functioning and memory work (space processing and communication) through brain plasticity (Vecchiato et al., 2015). These spaces could be any elements of any scale and their placement in urban spaces motivates people to walk for unexpected and spontaneous interactions such as passive communication (just seeing that there is a form of life around them), active conversations, and events (Albright, 2012). Whether in urban, architectural, or interior designs, capacious spaces with repetitive patterns are the best to apply in this case because they provide rest (Gombrich, 1994).

7.4 Create (or recreate) the urban design that increases the sense of attachment and control: The more people are more attached to a place, the more the identity of that place is better defined (Ujang, 2012). Enhancing familiarity and respecting the meaning of attachment and satisfaction of a community through architecture will make people see it as secure (Kopec, 2012). The most important for people suffering from PTSD is to create for them spaces where they can enhance the feeling of dominance of space because it was the way they acted to feel secure during war (Finn, 2013). In the language of urban planning, these concepts can be translated to defined public spaces for mutual protection and trust - for communication and teamwork since feeling alone is highly threatening (Finn, 2013) and low-rise buildings - for the feeling of dominance of space.

8. Conclusion

Beirut is a challenged city in term of urban health. In one century, Beirut rose to be one of the most desirable Levantine cities to visit and then fell in a war that imprinted a facet of sectarianism, only to rise again in a different aspect. Nowadays, the city must face the problem of the high-rise building that has nothing to do with its past architecture. Beirutis are in a constant cycle of nostalgia and aim to move on, pulling up by that their sense of judgment on the day-by day changes that are occurring in their built environment to find suddenly that the changes are enormous to digest. This state of confusion only increases their loss during their search of emotional stability. The sectarian urban planning still exists and people are still living a cold war. Therefore, PTSD caused by war is still haunting Beirut as people are not be able to forget war since they experience the emotions of war on a daily basis. Moreover, guideline plans mixed the urban heritage with the contemporary architectural style, narrowing the opportunities to get a solid root and defined single identity for the whole urban tissue of Beirut. Therefore, if people do not find themselves in the place they thought they knew, but now changed due to war, they will remember the fear of its loss and the thought of losing the places where they have constructed beautiful and meaningful memories, especially with close people who died or are permanently disabled due to war. It is about endeavoring to get a whole interconnected system between architectural and emotional infrastructure, which means, the roads, the forms and functions of the neighboring buildings, the shared public spaces,

the facilitation of reaching places Beirutis find primary for their daily life, and many other key factors.

Hence, urban planners have a major role in alleviating mental illnesses through the elements and shapes they propose during the planning of a postwar rising city, enhancing the harmonious relationship between the livable environment and the brain processes. The resulting urban spaces are exciting enough for motivation and quiet enough for rest. By that, Beirut will be able to help its inhabitants get over guilt and mourning through the grief visual therapy they need without having to relocate. As a final point, more research should be done on participants during a walk study (sensewalking) to collect more accurate results about the people's emotions who would be living the space with its visual, auditory, haptic, and emotional environment as they walk in the city.

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Conflict of interests

The Author declares that there is no conflict of interest.

References

Albright, T. [Salk Institute]. (2012, October 23). *From the Look of the Room: Can Visual Neuroscience Inform the Design of Human Spaces?* [Video file]. Retrieved from: https://www.youtube.com/watch?v=VwhCpoQmH4w&list=PLCBF4rMvQI23YK3Et648TKqBQq6HEieAr

Al-Hagla, K.S. (2009). Private space-based city configuration, Beirut case. *Architecture & Planning Journal, 1*, 119-129. Available from: Beirut Arab University (BAU), Faculty of Architectural Engineering. Available online from www.bau.edu.lb

American Museum of Natural History (2011). *Science Bulletins: Brains Change with Trauma*. Available from: https://www.amnh.org/explore/science-bulletins/(watch)/human/news/brains-change-with-trauma

Brainline [Brainline] (2012, February 3). Post-Traumatic Stress Syndrome (PTSD) [Video file]. Retrieved from from: https://www.youtube.com/watch?v=YiwfsNJNfil

Charles, M. [TEDx Talks] (2014, December 24). The Happy City Experiment [Video file]. Retrieved from: https://www.youtube.com/watch?v=7WiQUzOnA5w

Coburn, A., Vartanian, O., & Chatterjee, A. (2017). Buildings, beauty, and the brain: a neuroscience of architectural experience. *Journal of Cognitive Neuroscience*, *29*(9), 1521-1531. DOI: 10.1162/jocn_a_01146

Cyrulnik, B. [UnivNantes] (2012). *The Traumatic Memory* [La Mémoire Traumatique] [Video file]. Retrieved from: https://www.youtube.com/watch?v=rd13inJYbQk

Dance, A. (2017). Science and culture: The brain within buildings. *Proceedings of the National Academy of Sciences of the United States of America, 114*(5), 785-787. DOI: 10.1073/pnas.1620658114

De Cauter, L. (2011). Towards a phenomenology of civil war: Hobbes meets Benjamin in Beirut. *International Journal of Urban and Regional Research, 35*(2), 421–430. DOI: 10.1111/j.1468-2427.2010.01035.x

Domeier, M. & Sachse, P. (2015). The behavioral decision-making architecture. *Journal Psychologie des Alltagshandelns / Psychology of Everyday Activity, 8*(2), 35-47. Available from: http://www.allgemeine-psychologie.info/cms/images/stories/allgpsy_journal/Vol%208%20No%202/04_Domeier.pdf

Dougherty, Aparicio, & Reames [Academy of Neuroscience for Architecture] (2014, October 6). AIA California Council: The Smart Building and Human Behavior [Video file]. Retrieved from: https://www.youtube.com/watch?v=eURlaUUAHPE&list=PLCBF4rMvQI23YK3Et648TKqBQq6HEieAr&index=8

Edelstein, E. A. (2006). *Translating Neuroscience into Design*. San Diego Convention Center and San Diego Marriott Hotel & Marina San Diego, CA. Available from: http://eaedesign.com/InnovativeDesignScience.com/Media_-_Publications_files/Translational%20Design%20-%20The%20Relevance%20of%20Neuroscience%20to%20Architecture.pdf

Edelstein, E.A., & Macagno, E. (2012). Form follows function: bridging neuroscience and architecture. In Stamatina Th. Rassia, & Panos M. Pardalos (Eds). *Sustainable Environmental Design in Architecture. Springer Optimization and Its Applications, 56*, Springer, New York: NY. DOI: 10.1007/978-1-4419-0745-5_3

El Helou, M. (2018, February 7). Personal interview with [Serge Yazigi].

Etkin, A. & and Wager, T. D. (2007). Functional neuroimaging of anxiety: A meta-analysis of emotional processing in PTSD, social anxiety disorder, and specific phobia. *The American Journal of Psychiatry, 164*(10), 1476–1488. DOI: 10.1176/appi.ajp.2007.07030504

Fawaz, M., & Bou Akar, H. (2012). Practicing (in)security in the city. *City & Society, 24*(2), 105–109. DOI: 10.1111/j.1548-744X.2012.01070.x

Finn, M. (2013). Posttraumatic understanding: the connections between posttraumatic stress and architectural design. *Innovation Incubator*, 1-26. Available from: http://www.perkinswill.com/sites/default/files/PosttraumaticUnderstanding_2013.pdf

Gehl, J. (2010). *Cities for people*. Washington, DC: Island Press.

Gombrich, E. H. (1994). *The Sense of Order: A Study in The Psychology of Decorative Art* (2nd Ed.). New York, NY: Cornell University Press.

Habib, M., Haagenrud, S., Ludvigsen, B., Møystad, O., & Saad, R. (n.d.). Selected areas from the Beirut Green Line, 1975 – 1990. *Photographs and model, 1995-97*. Available from: http://almashriq.hiof.no/lebanon/900/910/919.other_areas_and_worlds/beirut/greenline/greenline.html

Hanna, J. (2016). Changing realities: Traumatic urbanism as a mode of resilience in intra-war Beirut. *International Planning History Society Proceedings, 17th IPHS Conference, History-Urbanism-Resilience, 17*(3), 383-388. DOI: http://dx.doi.org/10.7480/iphs.2016.3.1836

Held, P., Owens, G.P., Schumm, J.A., Chard, K.M., & Hansel, J.E. (2011). Disengagement coping as a mediator between trauma-related guilt and PTSD severity. *Journal of Traumatic Stress, 24*(6), 708-715. DOI: 10.1002/jts.20689

Hendin, H., & Haas, A.P. (1991). Suicide and guilt as manifestations of PTSD in Vietnam combat veterans. *Regular Articles*, The *American Journal of Psychiatry, 148*(5), 586-591. DOI: 10.1176/ajp.148.5.586

Karam, E. G. (n.d.). *IDRAAC, Institute for Development, Research, Advocacy and Applied Care, Edit*orial. Available from: http://www.idraac.org/contentfiles/1210PDF.pdf

Karam, E.G., Fayyad, J., Karam, A.N., Melhem, N., Mneimneh, Z., Dimassi, H., & Tabet, C.C. (2014). Outcome of depression and anxiety after war: A prospective epidemiologic study of children and adolescents. *Journal of Traumatic Stress,* 27(2):192-9. DOI: 10.1002/jts.21895.

Karam, E. G., Mneimneh, Z. N., Dimassi, H., Fayyad, J. A., Karam, A. N., Nasser S. C., Chatterji, S., & Kessler, R. (2008). Lifetime prevalence of mental disorders in Lebanon: First onset, treatment, and exposure to war. *PLOS Med 5*(4), 579-586. DOI: https://doi.org/10.1371/journal.pmed.0050061

Karimi, K. (2013). Urban challenges' forum Beirut: Normalities and abnormalities of a complex city. *Journal of Space Syntax, 4*(1), 110-122. Available from: http://joss.bartlett.ucl.ac.uk/journal/index.php/joss/issue/view/7

Kellou-Djitli, F. (2013). Psychology of space [Psychologie de l'espace]. *Courrier Du Savoir*, 16, 37-41.

Kessler, R. C., Aguilar-Gaxiola, S., Alonso, J., Benjet, C., Bromet, E. J., Cardoso, G., … Koenen, K.C. (2017). Trauma and PTSD in the WHO world mental health surveys. *European Journal of Psychotraumatology, 8*(5), 1353383. DOI: 10.1080/20008198.2017.1353383

Kopec, D. (2012). *Environmental psychology for design*. New York, NY: Fairchild Books.

McLaughlin, K.A., Koenen, K.C., Friedman, M.J., Ruscio, A.M., Karam E.G. Shahly, V., … Kessler, R.C. (2015). Subthreshold posttraumatic stress disorder in the World Health Organization world mental health surveys. *Biological Psychiatry.* 77(4), 375-84. DOI: 10.1016/j.biopsych.2014.03.028.

Marx, B.P., Foley, K.M., Feinstein, B.A., Wolf, E.J., Kaloupek, D.G., & Keane, T.M. (2010). Combat-related guilt mediates the relations between exposure to combat-related abusive violence and psychiatric diagnoses. *Depression and Anxiety, 27*(3), 287-293. DOI: 10.1002/Da.20659

Pascoe, S. (n.d.). *The Death and Life of Beirut*. Available from: https://www.academia.edu/6961549/The_death_and_life_of_Beirut

Pavlakis, P. [Paul Pavlakis]. (2017, December 15). *The Maladaptive Self* [Video file]. Retrieved from: https://www.youtube.com/watch?v=dnoaW6Qp1Os

Pornin, S., & Peeters, C. (2009). Environmental psychology, Design and Wellbeing [Psychologie environnementale, Design et Bien être]. Available from : https://www.millenaire3.com/ressources/psychologie-environnementale-design-et-bien-etre

Public Library of Science (2008). Mental disorders and exposure to war in lebanon. *ScienceDaily*. Available from: https://www.sciencedaily.com/releases/2008/03/080331223834.htm

Robinson, S., & Pallasmaa, J. (2015). *Mind in Architecture: Neuroscience, Embodiment,*

and the Future of Design. Cambridge, MA: MIT Press.

Roe, J. (2016). Cities, green space, and mental well-being. *Oxford Research Encyclopedia of Environmental Science.* DOI: 10.1093/acrefore/9780199389414.013.93

Roessler, K. (2012). Healthy architecture! Can environments evoke emotional responses? *Global Journal of Health Science*, *4*(4), 83-89, DOI: 10.5539/gjhs.v4n4p83

Scannell, L., & Gifford, R. (2010). Defining place attachment: A tripartite organizing framework. *Journal of Environmental Psychology, 30*(1), 1-10. DOI: 10.1016/j.jenvp.2009.09.006

Shaw, M. (2008). New wars of the city: Relationships of "urbicide" and "genocide". In Stephen Graham (Ed.). *Cities, War, and Terrorism: Towards an Urban Geopolitics* (pp.141-153). Blackwell Publishing, Oxford, UK. DOI: 10.1002/9780470753033.ch8

Surjan, A., Kudo, S., & Uitto, J.I. (2016). Risk and Vulnerability. In Juha Ilari Uitto and Rajib Shaw (Eds.). *Sustainable Development and Disaster Risk Reduction*. Springer, Tokyo: Japan (pp. 37- 55). DOI: 10.1007 /978-4-431-55078-5_3

Taylor-Hochberg, A. (2014). Nobel prize in medicine is awarded to three who discovered brain's 'Inner GPS'. *Archinect News.* Available from: https://archinect.com/news/article/110716179/nobel-prize-in-medicine-is-awarded-to-three-who-discovered-brain-s-inner-gps

The Center for Treatment of Anxiety and Mood Disorders (2017). *What is Trauma*. Available from: http://centerforanxietydisorders.com/what-is-trauma/

The National Institute of Mental Health Information Resource Center (n.d.). *Post-Traumatic Stress Disorder*. Available from: https://www.nimh.nih.gov/health/topics/post-traumatic-stress-disorder-ptsd/index.shtml

Ujang, N. (2012). Place attachment and continuity of urban place identity. *Procedia - Social and Behavioral Sciences, 49*(2), 156-167. DOI: 10.1016/j.sbspro.2012.07.014

Vecchiato, G., Tieri, G., Jelic, A., De Matteis, F., Maglione, A.G., & Babiloni, F. (2015). Electroencephalographic correlates of sensorimotor integration and embodiment during the appreciation of virtual architectural environments. *Frontiers in Psychology, 6*, 1-18. DOI: https://doi.org/10.3389/fpsyg.2015.01944

Wellness & Performance (2011). *About the Associative Awareness Techniques™ (AAT™) Program*. Available from http://www.wellnessandperformance.com/about.html

YaBeyrouth, From Beirut to Greater Beirut: The Seventh and Last Chapter [من بيروت للصغرى إلى بيروت الكبرى: الفصل السابع الأخير](2019). Available from: https://www.yabeyrouth.com

Zeisel, J. (2006). *Inquiry by Design: Environment/Behavior/Neuroscience in Architecture, Interiors, Landscape and Planning* (2nd Ed.) New York, NY: W. W. Norton.

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