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Urbanisation, Crisis, and Resilience: The Multiple Dimensions of Urban Transformation in Beirut, Lebanon

Editors
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Editorial

The Myth of Beirut's Resilience: Introduction to the Thematic Issue

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Abstract
This editorial introduces a thematic issue of *Urban Planning* on recent developments in Beirut, Lebanon. It emphasises the multiple crises the city has been undergoing for some time, which include an enduring political and economic crisis, the impact of the Covid-19 pandemic, and most recently the devastating impact of the blast that happened in the port of Beirut on 4th August 2020. The editorial outlines the specific challenges resulting from these crises and addresses the concept of resilience, which is taken up by the articles included in this issue.

Keywords
Beirut; Lebanon; resilience; urban development

Issue
This editorial is part of the issue "Urbanisation, Crisis, and Resilience: The Multiple Dimensions of Urban Transformation in Beirut, Lebanon" edited by Liliane Buccianti-Barakat (Saint Joseph University) and Markus Hesse (University of Luxembourg).

1. Introduction

Beirut's urban transformation is a subject of significant multi-disciplinary inquiry in the social sciences, urban studies, and political geography (see Arsan, 2018; Bou Akar, 2018; Fawaz, 2017; Fregonese, 2009). We have selected the city as subject of inquiry against the backdrop of the multiple crises Beirut has been undergoing for some time. These include an enduring crisis of the economy and with respect to the political system and institutions, which emerges on the grounds of a civil war lasting more than a decade. As many other countries did in similar ways, Lebanon in general, and Beirut in particular, were hit by the Covid-19 pandemic. The most recent element is the blast in the port of Beirut which happened on 4th August 2020 and left a devastating impact on the city, on its people, and urban life (Fregonese, 2021).

These events created a rather complex assemblage of threats and problems challenging the country and its capital city, and were seen by many as a crystallisation of Lebanon's complicated historical trajectories. However, these episodes do not supplant the rich historical setting both ancient and modern Lebanon represents for urban scholars. Beirut's cultural and geographical liminality, and continuing role as a prominent urban confluence with multi-faceted geographic positionality, imbue it with an especially abundant empirical interest and topical relevance. While there is no doubt about the material and intellectual challenges associated with the current crises, the articles presented here aim not only to provide some novel accounts of urban development in Beirut and Lebanon more generally, but also to inspire politics and policy in the attempt to prepare for recovery. It will be a matter of debate as to how far the concept of resilience can provide some orientation here, and the selection of conceptual and particularly empirical articles included here may be seen as a contribution to this debate.

This thematic issue has evolved from activities under the umbrella of the Urban Commission of the International Geographical Union (UGI-IGU), whose 2020 annual conference was supposed to have taken

place in Beirut, Lebanon. The same applied to its follow-up conference in 2021, which was devoted topic-wise to the multiple challenges of resilience. Both meetings were eventually held as digital conferences, but already offered some close encounter of members of the Commission with a range of researchers from the Middle East—Lebanon and Beirut in particular—and discussed related topics of urban development, policy, and research. Some of the articles included here were already presented on those occasions, others emerged from an international call-for-abstracts. The thematic issue offers a chance to shed some new light on a range of specific Mediterranean and Arab urbanisms—not with respect to those places that already received some attention in recent years (such as Dubai or Doha), but to focus on a place that enjoys both variety and a rich history, while being subject to multiple political crises in recent times as well.

2. Urban Resilience

Resilience has had a stunning career over the last 10 to 15 years in the natural and social sciences, and increasingly also in geography and urban studies. By definition, resilience addresses the ability of subjects (individuals, collectives) to absorb short-term incidents and the shocks they exert on societies, cities, and urban regions (Meerow et al., 2016; Townshend et al., 2015). The main premise is that by undertaking precautionary measures, a locale could also recover from unforeseen events, shocks, and crises, and thus regain a state of equilibrium, however defined. The city we are dealing with here as a case in point seems to perfectly demonstrate these variegated challenges.

The huge resonance that the term and concept of resilience received in the last decade(s) was of course spurred on by the three major crises we have witnessed in recent times: the financial crisis in 2008–2009 challenging socio-economic systems also through countermeasures (such as austerity); of course the Covid-19 pandemic as the most visible and enduring crisis widely affecting societies and individuals; and climate change as a persistent, long-term crisis, an epitome of our times. In relation to these three crises separately and in combination, resilience is discussed as a proper response, a strategy for dealing with both the short-term outcomes of disasters, for organising recovery, and for a more substantial transformation. This may also explain why the resilience-frame has meanwhile reached policy mainstream, calling for approaching long-term, fundamental change at urban and regional levels. However, there is good reason to be cautious about both an inflationary and unconsidered use of this concept. If sustainable development has already been quite demanding in terms of effective practice, this applies even more so to resilience.

Our critical reading of resilience includes three aspects: positivism and policy hubris; the machinery of learning and knowing; and subjectification of the problem. First and foremost, concepts of urban and regional resilience deploy a certain sense of positivism, particularly as concerns the root causes of shocks and events that need to be overcome, and also the possible state of equilibrium to which one would seek to return. Additionally, the steering mechanisms of effective resilience would need to be systemic, which has raised some criticism given the implicated causal expectations and linear understanding of policy that are necessarily associated with this concept (Chelleri et al., 2015).

Secondly, the transformation of a conceptual idea into a best-selling product has been driven by a global machinery of learning, knowing, and dissemination. This has raised the suspicion of observers that the equilibrium some resilience actors are searching for is mainly an economic one: creating a tool for the commodification of urban development strategies and benchmarking for bringing the competitive gesture of global urbanisation to the fore (Leitner et al., 2018).

Thirdly, there is a certain degree of subjectification inherent to the concept of resilience. One of the key points in Graefe's (2019) work is to consider the resilient subject as an ideal counterpart to the current neo-liberalised and financialised form of capitalism. This follows the assumption that every form of society needs a subject that suits it. Hence through individual resilience programmes, the subject is rendered fit to endure the uncertainties of present and future. The welfare state was previously the stabilising force against the insecurities and crises of capitalist economies, whereas the appeals for flexibility and measures under the rubric of resilience are articulated in terms of self-motivated actions. This applies even more to cases where the state either failed or remains absent from such traditional role model.

Beirut as a case and place of multiple crises provides a huge challenge for applying the concept of resilience in practice. On the one hand, there are urgent needs for recovery in various regards, involving a wide range of technical and scientific expertise, civil society engagement, and state action—responsibility of the latter seems the most important factor in the trajectory of crises that the country and capital city are undergoing for quite some time. On the other hand, the site can be considered a testing ground par excellence for the very circumstances that may allow for (or not) to recover from shocks and crises. Beirut's experience in approaching recovery and becoming more resilient could thus provide insights, practices, and learning outcomes that render useful for other places as well—if resilience would ever work out there, it would have proven its general value as a guideline for (re-)development.

3. Beirut: Past and Current Developments

Beirut is a crossroads in the middle of the eastern Mediterranean basin. This location made the continuity of the port city's history since ancient times.

Originally called Beroth, City of Wells by the Canaanite-Phoenicians, Beirut is an ancient settlement dating back more than 5,000 years. Its history has included so many ebbs and flows; so many destructions and reconstructions along the centuries (Buccianti-Barakat & Chamussy, 2012). Long considered as a crossroads between Asia, Africa, and Europe, owing to its strategic location, Beirut gained prominence as a Levantine city in the mid-19th century. Since its independence in 1943, the modern state finds itself subject to myriad external pressures which often have destabilising internal effects.

The city's traditional role as a maritime and commercial entrepôt and university city was widened to become a nascent financial centre in 1956 with the introduction of banking secrecy laws. Its subsequent international reputation as a diplomatic hub and tourist resort with various monikers such as the "Switzerland" or "Paris" of the Middle East coincided uneasily with growing geopolitical and migratory pressure flowing from the expulsion of Palestinians by Israel, and it ended abruptly with the outbreak of civil war in 1975. In the 1960s and early 1970s, Beirut became an important cultural centre and a major educational, medical, and commercial hub in the Arab region. However, since the independence of Lebanon in 1943, the city suffers from human-made hazards, i.e., internal and external conflicts and social crises. It underwent several setbacks during the 15-year civil war (1975–1990) and fell victim to several destructions since the 1990s due to the reconstruction of downtown Beirut entrusted to *Solidere*, a private company, and increasing financialisation of real estate. Periods of post-war reconstruction are the backdrop for new socio-economic and political dynamics (Fawaz et al., 2018).

Reconstruction after the civil war had only limited success as concerns achieving its ostensible aim of restoring the city's former international status. Alongside the rise of centralised market-led urbanism, laissez-faire urban planning, the embedding of sectarian polarisation, and neglect of basic infrastructure are all factors that raise questions about the model of urban regeneration implemented and arouse new socio-political tensions. Post-modern redevelopment of the inner-city as a site for speculative real-estate investment occurs alongside an intensive, unplanned urbanisation along the coastlines to the north and south, and in stark contrast to the "misery belt" of informal sprawl on the periphery of the city. At the same time, Lebanese people have worked hard after the war to rebuild their shattered homes and lives, and by 2018 Beirut had regained its cultural dynamism and lust for life.

4. Multiple Crises and the Myth of Beirut's Resilience

Recent crises not only comprise a long-standing concern about the state's economic failure and clientelist political environment but were exacerbated by the outbreak of Covid-19. As if that would not already be enough of a crisis, on Tuesday, August 4th, 2020, Beirut suffered an extraordinarily strong blast that destroyed its famous commercial port and all the historic districts along the seafront, stretching across a perimeter of several kilometres. The explosion was reportedly felt in Syria, Turkey, and parts of Europe, and was heard in Cyprus, which is more than 240 kilometres away, and it claimed the lives of 220 humans and left more than 6,500 injured (Al-Hajj et al., 2021). The blast was considered one of the most powerful non-nuclear explosions in history according to the United States Geological Survey (2020).

"La catastrophe de trop" (the one disaster too many), as the Lebanese had put it after the double explosion, rendered the country in a fundamental social, health, and economic crisis. The day after the explosion, hundreds of Lebanese volunteers came down to clean, sweep, and distribute water and food to the inhabitants of the stricken areas. At the same time, national associations and NGOs such as ICOMOS Lebanese members, were mobilized on the ground to bring first aid to the residents, followed by international NGOs, the Lebanese diaspora, and many countries around the world helping with medicines, food aid, etc. Once again, the Lebanese took an active part in the reconstruction of the affected neighbourhoods updating the myth of Beirut's resilience.

As the Lebanese writer Nadia Tueni, a francophone poet who is the author of numerous volumes of poetry, wrote: "Elle est mille fois morte, mille fois revécue" (It is a thousand times dead, a thousand times relived). In the novel *Stone of Laughter*, Hoda Barakat, a Lebanese author, explores the devastated spaces that the civil war opens up in each individual. The clearing has also been associated with the political and psychological amnesia that followed the civil war. Instead of reconciling their differences, the fighting factions and religious sects have chosen not to come to terms with their belligerent past, but to switch from military to tacit documentary form. Paradoxically, the amnesia of Beirut's post war physical reconstruction has played an important role in providing historical continuity between the city's defining myths—the myth of self-consumption and the myth of self-renewal.

According to popular folk culture and history alike, Beirut was propelled into history by a moral judgement, passed long ago, that the city deserves destruction. The 15 years of civil war was just another that endowed Beirut with seductive appeal and notoriety. Beirut's self-consumption, the foundational problem of Lebanon, presents a necessary condition for the cyclical myth to be realized. The second defining myth relates that Beirut will be destroyed but it will rise from the ashes. Popular songs and poetry to this effect reassured citizens in their makeshift shelters that the city would be rebuilt. Even the warlords who were overseeing fulfilment of the myth of self-consumption always insisted that the phoenix would eventually rise again.

The myth of self-destruction feeds the myth of resilience. But a historical survey of this cycle quickly reveals that most of the calamities in the history of Beirut

were natural, not man-made (earthquakes, tsunamis, etc.). An important matter is time: Until now, the transition from destruction to re-construction has rarely been the responsibility of the same generation. Today, the Lebanese crisis results from a system put in place at the end of the civil war. And the warlords are running the country now. For the Palestinian filmmaker, director, and producer Mai Masri, Beirut is a city that refuses to die. For her, this crumbling city with a tortured past is brimming with culture that continues to inspire artists and tourists. The element of the unexpected, even chaos, leaves significant space for creative expression.

5. The Articles in This Thematic Issue

The authors of the articles presented in this thematic issue have chosen different topical matters for discussing the challenge of resilience in the case of Beirut and the multiple crises of the capital city and country. Their subjects include a conceptual reflection of urbanisation of Beirut, a critical discussion of heritage conservation practice, informal urbanisms and their sustainable design, issues of place identity and public space, urban restructuring and densification, or neighbourhood-oriented planning. Accordingly, methods and approaches are varied, from qualitative inquiry, theoretical reflection, and secondary sources' assessment to GIS-applications and agent-based micro simulations. By initiating and presenting this selection of articles, we follow the commitment of the UGI-IGU in general, and its Urban Commission in particular, to promote the production, exchange, and dissemination of geographical knowledge across different parts of the world and to bring the various research communities in conversation with each other. While we do not expect that academic knowledge can be easily "transferred" to practice, the authors of these articles are certainly motivated as well by the need to seek strategies, instruments, and tactics that may help Beirut and Lebanon to recover from their multiple crises.

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Conflict of Interests

The authors declare no conflict of interests.

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Article

Urbanism and Geographic Crises: A Micro-Simulation Lens on Beirut

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Abstract
At a geographical and strategic confluence, the ancient city of Beirut, Lebanon, has witnessed crises from natural and human causes over the centuries. The modern urban and peri-urban development is a result of neo-classical economics, laissez-faire regulations, and complex socio-political structures. This article considers the contemporary housing situation and asks about its resilience to crises. The methodological approach is speculative simulation. We capture the urban status quo through agent-based simulation, and simulate a range of independent shocks. Although the goal of the article is exploratory and not historical replay, the shocks considered are historical exemplars, such as the explosion on August 4th, 2020. Looking across peri-urban Beirut, we measure qualitative effects on housing economics and dynamics. The research question thus addressed is to determine the optimal amount of capital needed for regeneration without triggering a price increase in the housing market. The contribution of the article is a data-and-modelling approach to humane questions of interest to urban scholars. The simulation model is available open source to provoke further enquiry.

Keywords
agent-based simulation; Beirut; econometrics; exogenous shocks; housing dynamics; urban form

Issue
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1. Introduction

> Out of suffering have emerged the strongest souls; the most massive characters are seared with scars. (Kahlil Gibran)

The capital city of Lebanon, Beirut, has witnessed crises from natural and human causes since its founding some 5000 years ago (Mansel, 2010). The city's current urban and peri-urban development is a result of neo-classical economics, laissez-faire regulations, and complex socio-political structures (Krijnen & Fawaz, 2010). The contemporary socio-technical system reflects multiple socio-economic transitions over time, in line with Hölscher and Frantzeskaki's (2021) theory.

Contemporary urban environments, such as Greater Beirut, manifest themselves as complex, interconnected socio-technical systems. As Termos et al. (2021) note, *agent-based models* have emerged to complement econometric and social science models in the study of such systems. Agent-based modelling (ABM) is a micro-simulation approach to the study of complex systems. From the local behaviour of the modelled actors, system-level properties emerge. ABM has found wide application in fields from anthropology and economics to biology and linguistics (Van Dam et al., 2013). Heppenstall et al. (2021) summarise the "enormous promise" of ABM for dynamic spatial simulation, including for the geographical and urban planning fields.

This article brings ABM to bear on the crises of Beirut's history in the 21st century. We draw on the spatially-explicit agent-based simulation model of Termos et al. (2021). Those authors studied migration caused by the Syrian War and its effect on the housing

market, segregation, and urban dynamics. We look at shorter-term consequences on residential housing of three events which left indelible reverberations on the city and its built form. In particular, the article's main research question is to *determine the optimal amount of capital needed for regeneration without triggering a price increase in the housing market*. It is important for a supply-side driven urban development that housing prices remain constant and do not increase with regeneration. Unlike demand-driven housing policies, by encouraging home ownership through subsidies to home buyers, demand for housing rises along with a spike in housing prices (Floetotto et al., 2016).

The contribution of the article is a data-driven quantitative-qualitative modelling approach to humane questions through agent-based simulation. We offer a methodological approach complementary to and triangulating with equation-based quantisation and literature-based enquiry. Specifically, we provide an approach that informs the choices that planners, policy makers, and humanitarian organisations might have made in response to shocks upon the urban environment, from a socio-economic perspective. For this purpose we examine three case studies: the 2005 popular uprising which followed the assassination of the Lebanese prime minister in February 2005 (Knudsen & Kerr, 2012) and the 2006 Israel-Hezbollah War, centred on Lebanon in July–August 2006 (Salamey, 2014); the influx of refugees from 2011 that followed the onset of the Syrian War (Cherri et al., 2016); and the Beirut Port explosion, an accidental blast in August 2020 considered among the largest artificial non-nuclear explosions (Valsamos et al., 2021). Although adopting historical case studies, this article does not address the causes or geo-political context of the case studies, nor deviate from neutrality over political, jurisdictional, or boundary questions.

After recalling the historical background in the next section and then reviewing the literature in Section 3, in Section 4 we present the methodological approach. Simulations examining the three case studies are described in Section 5, accompanied by a discussion. Section 6 concludes the article with an outlook.

2. Historical Background: A Snapshot

After 15 years of civil war that ended in 1990, Beirut downtown was destroyed (Fisk, 2002). A landmark of this destruction is a 25-story Holiday Inn hotel still standing with its bullet-riddled exterior as a witness to a vicious war that divided the city into two parts: Western Beirut with predominately Sunni Muslim population and Eastern Beirut with predominately Christian population. The two parts were divided by a demarcation line known as the Green Line, generally stretched from the north of Beirut to the south (Figure 1). Buildings along the Green Line were either severely damaged or destroyed. The neighbourhoods along this line were mostly abandoned and became uninhabitable such that vegetation grew naturally along this line—hence the Green Line. During the war, people started to move to the side of the city where they felt more secure, and the city grew more divided.

Rafik Hariri was the first prime minister after the war: A real-estate billionaire who built a business empire in Saudi Arabia. Hariri was the godfather of the peace treaty that ended the civil war in 1990, known as the Taef Accord, named after the Saudi city where the deal was brokered (for a detailed account on the reasons behind the war and its ramifications, refer to Fisk, 2002).

Hariri was the maestro of a mega-project known as *Solidere* to rebuild Beirut, perhaps one of the largest urban redevelopment projects undertaken until that time in West Asia. The name Solidere is the French acronym for "The Lebanese Company for the Development and Reconstruction of Beirut Central District." By agreement with the government, which was controlled by Hariri himself, Solidere enjoyed special powers of eminent domain as well as a limited regulatory authority codified in law. Solidere rebuilt Beirut Central District (BCD) and restored it to its initial state with a modern and lavish style. Despite its attractive and aesthetic urbanism, BCD was not inclusive to all segments of the population as it was before the war. The new BCD is now home for luxury brands and high-end shopping plaza with mostly vacant residential units owned by the wealthy Lebanese diaspora and expatriates from oil-rich Arab countries.

It took many years after the war for the Green Line to gradually fade away. With some limitations, citizens of Beirut started to move across neighbourhoods that previously were unthinkable. However, cognitive dissonance remained prevalent in housing and the quarters of Beirut remain identified by the religious-political factions of their respective dominant population.

The housing sector experienced a boom in the mid-1990s with the restoration of damaged dwellings (also outside BCD) and the building of a new wave of high-rise residential towers. Most of the new urban development took place in the suburbs to accommodate the increasing demand for housing by the middle class. The majority of the Lebanese population lives in urban or sub-urban areas for the lack of job opportunities in the peripheries. According to World Population Review figures, in 2020 around 86% of the Lebanese population lived in cities, and 50% lived in the Greater Beirut area (World Population Review, 2022).

The residential real estate market took a new turn in the early 2000s and beyond when commercial banks started to introduce mortgage lending. With interest rates on mortgages subsidized by the Central Bank (Banque du Liban [BDL]), mortgage lending soared and so did housing prices. All this came to a sudden stop with the assassination of Hariri in February 2005. The Syrian army, which had been present in Lebanon throughout the war time, started a complete withdrawal from Lebanon in April 2005. The Lebanese economy took

a harder blow once again by the Israel-Hezbollah war in July–August 2006. The continuous bombardment of Beirut suburbs and other targets across Lebanon for 33 days destroyed hundreds of buildings and displaced hundreds of thousands of people (Soliman, 2009). Subsequently, and on another wave of reconstruction, housing prices took to a new high in late 2007 and continued to rise until 2015.

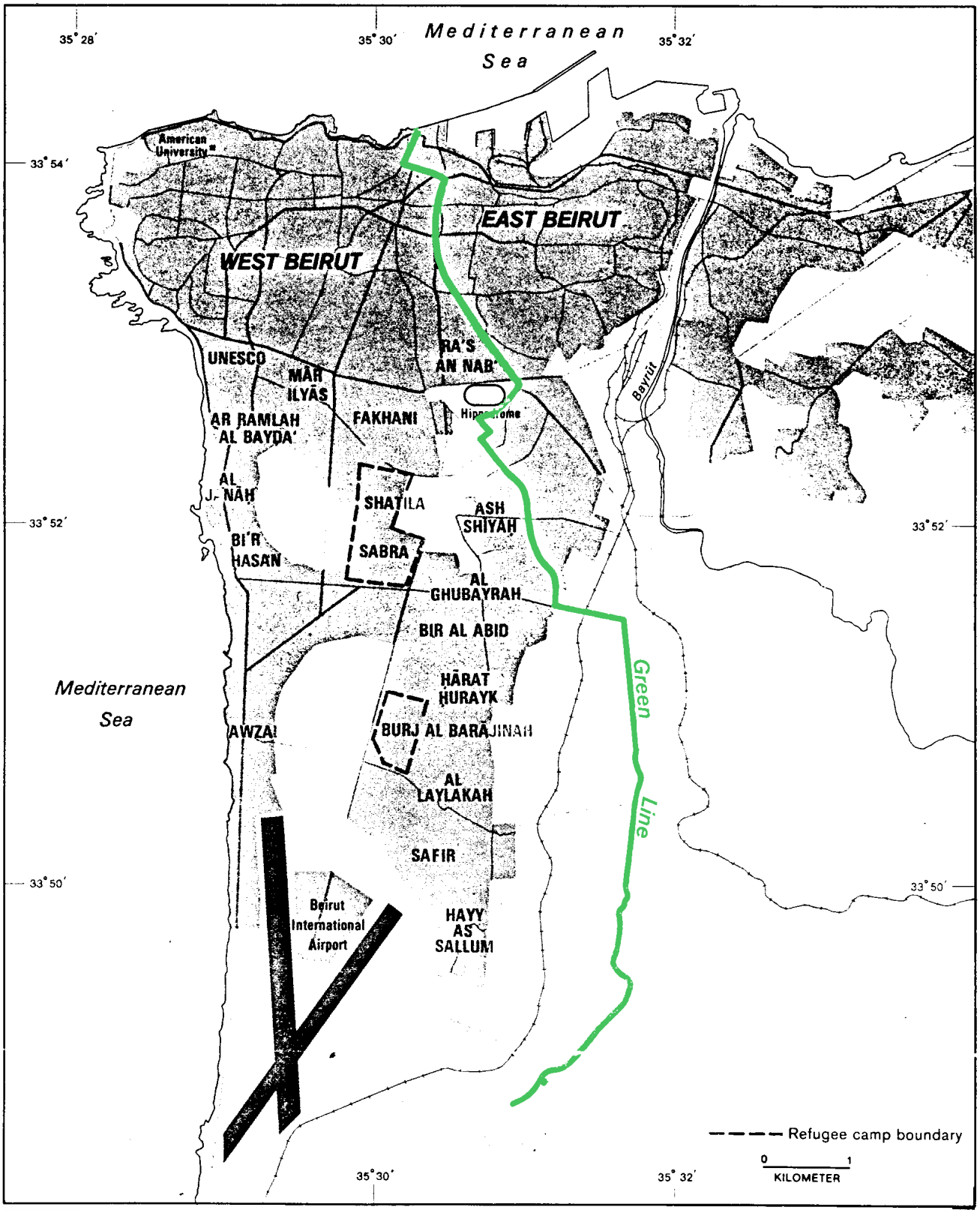

Figure 1. Map of neighbourhoods in Beirut in 1986, which also shows the Green Line. Source: U.S. Central Intelligence Agency in Wikimedia Commons.

Civil war in Syria broke out in 2011. Scores of Syrians fled their country to Lebanon seeking a safe refuge. By 2014 the number of Syrian refugees in Lebanon reached around 2 million, almost 40% of the host population. Foreign capital inflow started to dry up and the BDL was under immense pressure to defend the currency peg that had been maintained since 1994. The fixed peg was brought to an end by the end of 2019 due to chronic corruption and poor policies that led to the drainage of foreign reserves. This was followed by a sharp and continued currency depreciation and rapid economic meltdown hitherto unseen since the 19th century (World Bank, 2021).

3. Related Work

Van Dam et al. (2013, p. ix) define an *agent* as "a representation of a decision-making entity in the real world, be it an individual or an organisation." Then, ABM is "a paradigm for simulating the actions and interactions of autonomous heterogeneous agents, which do not need to be perfectly rational or perfectly informed, in order to study the emergent system-level effects of collective agents' behaviour within a certain environment, over time" (Chappin et al., 2019, p. 322). ABM first of all addresses the question of "What happens when…?" Thus, Van Dam et al. (2013, p. 55) state: "Agent-based models are constructed to discover possible emergent properties from a bottom-up perspective. They attempt to replicate, in silico, certain concepts, actions, relations or mechanisms that are proposed to exist in the real-world, in order to see what happens." This paradigm is complementary to other, historically more common methodologies, such as equation-based modelling (as common in econometrics) and qualitative theories (as common in some social sciences; O'Sullivan & Haklay, 2000).

As a paradigm of enquiry, ABM came of age in the last decades of the 20th century. Besides many other fields, it is now seen in geography, urban planning, and urban studies. For instance, agent-based models have been exploited to reproduce the evolution of the urban form (Stanilov & Batty, 2011); to model characteristic urban dynamics, including segregation, gentrification, and informal settlements (Patel et al., 2012; Picascia et al., 2015; Schelling, 1971); to plan urban land use (Ligtenberg et al., 2001; Zidar et al., 2017); to study the housing market (e.g., Yun & Moon, 2020; Zhang & Li, 2014), residential search behaviour (Huang et al., 2014), and the sharing economy (Overwater & Yorke-Smith, 2022); and more broadly in participatory urban planning (Ampatzidou et al., 2018).

Hölscher and Frantzeskaki (2021, p. 1) categorise research about urban transformations into three categories: "in cities" studies "diverse factors, processes and dynamics driving place-based transformations"; "of cities" studies "outcomes of transformative changes in urban (sub-)systems"; and "by cities" studies "changes taking place on global and regional levels as a result of urbanisation and urban development approaches." This article's interest intersects the first two categories.

The notion of transformation is seen in the multi-level perspective (Geels, 2005), which considers socio-technical transitions in terms of three "levels": innovative practices (niche experiments); structure (the regime); and long-term, exogenous trends (the landscape). The triad for ABM is state, environment, and time (Van Dam et al., 2013); thus multi-level perspective misses time in its analysis, while ABM misses niche. The common between both is environment/landscape and state/regime (we are grateful to an anonymous reviewer for pointing out this connection).

Soliman (2021) identifies how Lebanon is an archetypal example of "urban informality," and connects the multi-layers of formal and informal with socio-technical transformation, particularly with sustainable transition processes—which are crucial in a crisis-ridden region.

As fitting a historic city at the crossroads of trade, Beirut is well-known in the literature (Kassir, 2010; Knudsen & Kerr, 2012; Mansel, 2010). As narrated in Section 2, notable post-independence events include the Lebanese Civil War, the Cedar Revolution, conflicts with Israel, the Syrian War "spillover" and refugees, and the economic collapse and 2020 port explosion. Krijnen (2018) reviews the post-Lebanese Civil War gentrification. The war and subsequent politics are treated by Fisk (2002) and Salamey (2014). Cherri et al. (2016) and many others study refugees, and Barbarino et al. (2021, p. 1) point out that "the migration-city-nexus has become central in migration and urban studies alike." Bisat et al. (2021) dissect the contemporary Lebanese economic collapse. Srour and Yorke-Smith (2016) apply agent-based simulation to study the Port of Beirut processes. Valsamos et al. (2021) highlight the study of the port explosion with simulation methods.

4. Methodology

At a high level, the methodological approach is to study selected historical shocks to the Beirut residential housing market by means of ABM and simulation. To achieve this, we adapt the spatially-explicit ABM of Termos et al. (2021).

4.1. Model

The ABM of Termos et al. (2021) models the urban dynamics of residential housing of Beirut. Its original purpose was to study the possible societal consequences and economic indicators of migration, notably the influx of refugees during the 2010s (Cherri et al., 2016). The ABM includes both economic and cultural components. We adopt and extend this model, both conceptually and in implementation.

The economic model adopted in the ABM is the rent gap theory. The concept of the *rent gap* was introduced

by noted British geographer Neil Smith: the difference between the actual (current) economic return from land, and the maximum potential return if the land were put to its "highest and best use" (Smith, 1979). Thus, the ABM can observe gentrification effects from the decline and regeneration of properties.

In the ABM, agents represent households. Each household lives at a location in the city, which represents a residential dwelling. Note that more than one household can live at a location, and such apartment blocks are common in Beirut. The agents seek to move if their income permits, if their current dwelling is too poor in maintenance, or if the *cognitive dissonance* with their neighbours is too great (Portugali, 2011). Locations have a maintenance level representing the condition of the dwelling; it declines in time, and can be repaired or redeveloped; the decline is faster if the location is unoccupied. Agent types are either (Lebanese) citizens or (Syrian) refugees; each agent has an income level. Refugees will tolerate poorer living conditions and denser population, if they have no other option. For details of the model, we refer to Termos et al. (2021) and the references cited therein.

We make the following modifications to the above *baseline* model:

- Extending the geographic range from the strict boundaries of the municipality to a large portion of peri-urban Beirut. This is important because of the urban sprawl and population percentage outside the municipal boundary, which is relatively small.
  Validity: Income, maintenance, and cognitive dissonance can be modelled for Greater Beirut in the same way as for within the municipal boundaries. Indeed, the formal boundary of the city is much smaller than the de facto city, and the urban form is seamless and unabated between the two. Note we do not assume the income (and other attributes) is identical between districts, but rather base it on data: this is equally true for districts within the municipal boundary and those without.

- Including the building density per district. This is important because residential options are not uniform between districts.
  Validity: The lack of building density is a valid development of the Termos et al. (2021) model. Indeed, its lack is a deficiency of their original ABM.

- For each case study, calibrating on housing price and population data for the point in time, and removing refugees' influx if prior to the Syrian War.

  Validity: It is necessary to calibrate each case study at the relevant month when the case begins. It would be invalid to assume that, e.g., 2011 data is a starting point for a case in 2006. Moreover, since there were no Syrian refugees prior to 2011, of course they cannot be in the simulation prior to that point.

The simulation cycle is one month.

A visualisation of the ABM is seen in Figure 2. The model is implemented in the dedicated ABM language NetLogo (Wilensky, 1999), version 6.2 (base model available at www.doi.org/10.4121/13033154). The model of this article is available at www.doi.org/10.4121/18780524.

It is important to recognise that this article demonstrates a data-and-modelling approach on three historical case studies. We provide calibrated models that characterise the historical situations but do not precisely replicate them. This intention has three reasons. First, the ABM provides a stylised but grounded abstraction of the modelled socio-technical system (Edmonds et al., 2019; Van Dam et al., 2013). Second, data of sufficient granularity is simply not available for Lebanon: for example, there has been no population census since 1932 (Maktabi, 1999). Third, the ABM can be validated and prove insightful for planning and policy decisions—and for retrospective analysis—without the overhead of attempting overly-precise replication (Sun et al., 2016).

4.2. Data

In order to calibrate the simulation, six items of data are required: geo-locational, demographics, building density, housing prices, property conditions, and (particularly after 2011) refugee population. Data paucity on Lebanon is an ongoing challenge (Faour & Mhawej, 2014; Government of Lebanon & UN, 2017). As with the base model, our data acquisition process follows that of Termos et al. (2021). Whereas those authors consider the years 2009–2015 for their analysis, the case studies in this article go back further to 2005 and forward to 2020. Termos et al. (2021) also did not consider building density because they considered only population-based shocks, not physical or economic shocks; therefore we explain in more detail the process for obtaining this data.

Open-source GIS data came from OpenStreetMap (www.openstreetmap.org/relation/5466662), the Central Administration of Statistics (2022), and Facebook Connectivity Lab and Center for International Earth Science Information Network (2016). We note that OpenStreetMap is crowd-sourced, with the pros and cons of that source.

Population is estimated from UN (population.un.org/wpp), World Bank (databank.worldbank.org/source/population-estimates-and-projections), and WorldPop (www.worldpop.org). Refugees numbers are estimated from UN High Commissioner for Refugees figures (www.unhcr.org/lebanon.html).

Table 1 gives summary statistics. Note we down-scale the actual number of households to 500. The reason for this is that we are not attempting a 1–1 scale simulation,

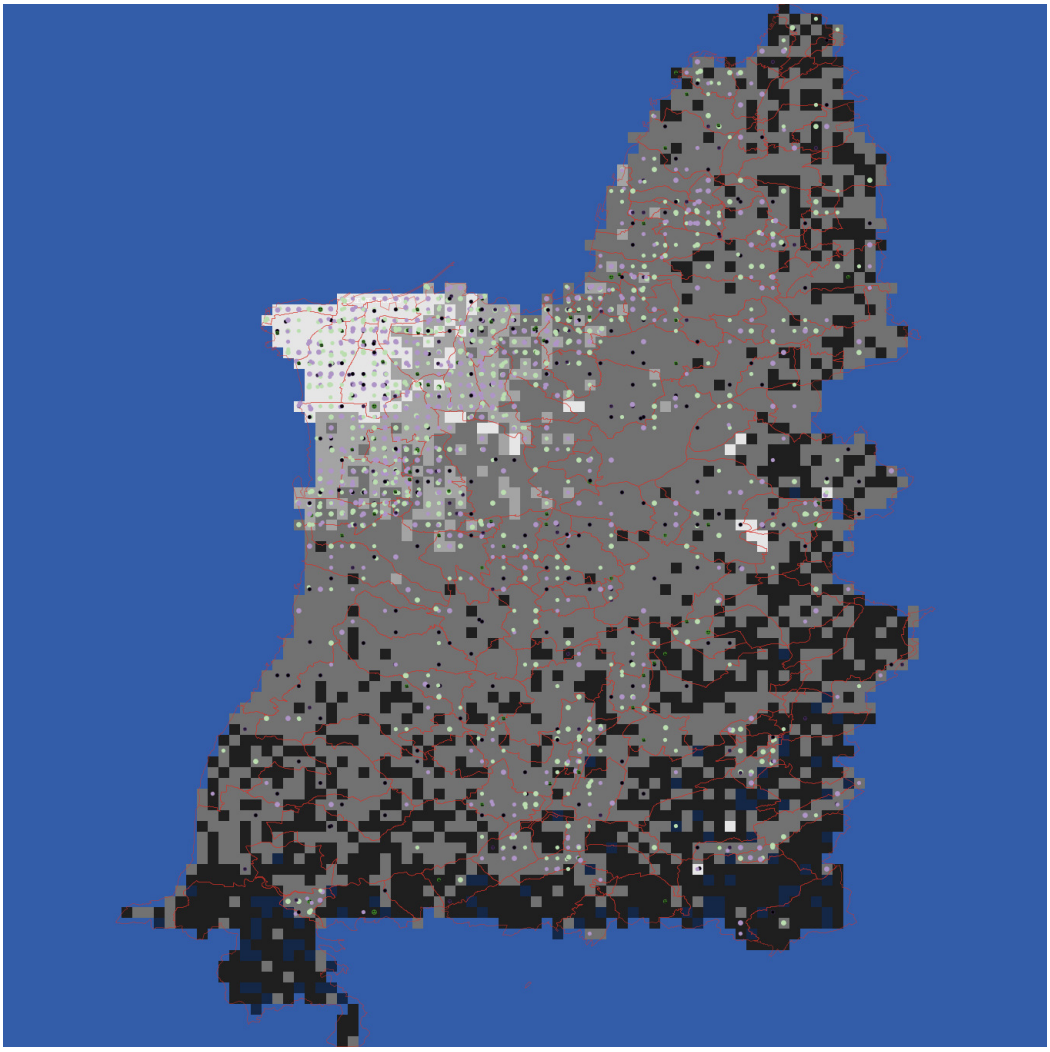

Figure 2. Geographic visualisation of the Greater Beirut region captured in the simulation. Municipal Beirut is seen top left; the Mediterranean Sea borders the west and north. Greater Beirut extends along the coastline and inland (Faour & Mhawej, 2014); the higher-evaluation area bottom right is relatively less occupied. Squares are coloured by the maintenance level of the properties (brighter = better condition). Household agents are depicted by circles; colour denotes income quartile (bright white = top 25%, bright grey = next 25%, dull grey = next 25%, black = bottom 25%). District boundaries are shown by red lines.

nor is it necessary to examine the urban dynamics effects we wish to study. In this regard we follow common practice in ABM. Note that not all agents (circles) are visible in Figure 2, due to emigration and immigration effects. Further, note that more than one agent can reside in a given location (square).

Table 1. Summary statistics of Greater Beirut simulation.

Quantity	Value
Total population	2.2 million
Population density (/km^2)	4,100
Geographic area (km^2)	537
Number of districts	223
Number of households (in simulation)	500
Number of buildings (in simulation)	3,879

4.2.1. Population Density

First, we identified our target localities using GIS data. Then we matched the coordinates of these target 223 districts with those of the GIS data and computed population in each district, in addition to population of the five nearest points to each district. We then traced population growth for the periods of the events under study, that is, 2005, 2011, and 2020.

4.2.2. Housing Price

Termos et al. (2021) developed a housing price index for Lebanon using a partial equilibrium model, a type of econometric approach. To capture the variation in housing price for each district we included another variable to the previous econometric model: the distance from

each district to downtown Beirut. The hypothesis is that districts closer to the centre have higher housing prices. In the actual urban area, there are exceptions where a more distant district is in fact more affluent than a closer district. We injected knowledge into the model by manually intervening in the most prominent few such outliers. For example, Ouzaii vs. Jounieh and Sin el Fil vs. Baabda. We note that, even if they remain present, the outliers do not affect the results (qualitatively) because they comprise three or four districts out of 223.

Altogether, the econometric model now includes interest rate, building permits, construction cost, in addition to distance. We use the inverse distance for a direct interpretation of the results. For robustness, we replaced building permits with population growth in one iteration. We found that the econometric model with population growth has a better fit (higher R-square); details are provided in Appendix A in the Supplementary Material.

4.2.3. Building Density and Maintenance Level

We constructed building density by regressing building permits over population and distance from the centre of downtown Beirut. To compute the maintenance level in 2005 we used a survey from 2017 that was based on expert opinion. Based on that survey we created an instrumental variable by regressing the survey data on house price, population, and distance from the centre. Then we used the regression line to estimate the maintenance levels in 2011 and 2020. In these regressions we created a quadratic equation with an interactive term Price × Density as one of the explanatory variables in order to capture the nonlinearity of the maintenance level. This allows for maintenance variations that satisfy a matrix with four quadrants as in Table 2.

Appendix A gives further details. We note here that the obtained coefficient on population diminishes from 0.132 in 2005, to 0.112 in 2011, to 0.0969 in 2020, indicating that as population is rising, new building density as proxied by building permits is decreasing but still positive. This is interpreted as being due to limited land available for construction but also reveals that some regeneration is taking place because the coefficient is still positive. For example, while in 2005 a 1% increase in population leads to 13.2% more building permits being issued, this figure drops to approximately 9.7% in 2020.

5. Results and Discussion

With the simulation model and the data in place, we can now proceed to study with our data-driven quantitative-qualitative modelling approach three case studies of 21st century shocks to Beirut. Each case is treated separately, i.e., with a separate instance of the ABM. The parameter values at initialisation were retained the same as Termos et al. (2021). The only exception is that, obviously, the refugee immigration rate was set to zero until simulated time reached 2011.

5.1. Case 1: Uprising of 2005 and Conflict of 2006

A nationwide uprising followed the assassination of prime minister Rafik Hariri on 14 February 2005. People flocked to downtown Beirut to protest the murder. The Syrian army had maintained a presence of thousands of troops in Lebanon since the early years of the Lebanese civil war in 1975 (Fisk, 2002). Under the pressure of the non-sectarian protests, the Syrian army withdrew from Lebanon in April 2005. Lebanon entered a period of political turmoil; the assassination fuelled political and sectarian tensions. Increased uncertainty loomed over the future of Lebanon and crippled its economic growth in the months to follow, but later brought a capital influx to a newly "independent" Lebanon from its diaspora.

Amid this heightened political upheaval, a devastating war waged by Israel on Lebanon in July 2006. This war was a blow to Lebanon's economy. It is estimated that the damage to the infrastructure cost at least $3.5 billion, 16% of the GDP (Kotia & Edu-Afful, 2014). In addition, 15,000 homes were destroyed, and one million people displaced. It took the next five years before the destruction was restored. Soliman (2004, 2009) discusses how the displacement from southern Lebanon to Beirut affected the urban fabric of the city.

The impact of the war on Lebanon's economy was multi-faceted. First, there had been already a strain on capital inflow since the Hariri murder a year earlier. The uncertainty that engulfed the investment environment due a series of political and security rundowns slowed down the economic prospects of the country. Second, the displacement of tens of thousands of people who were left homeless by the war added to the government's burden to provide temporary housing for the needy. Housing prices cooled down after the war but started to spike in 2007 and continued to rise well into the year 2015. Third, demand for housing had been strong due to the government programme that provided a generous interest rate subsidy on residential mortgages. Additionally, the BDL offered another subsidy to mortgage lending by allowing commercial banks to use part of their required reserves to sell mortgage loans at an affordable rate. These two programmes together

Table 2. Quadrants of maintenance variations.

		Price	
		High	Low
Building Density	High	Medium-high maintenance	Low maintenance
	Low	High maintenance	Medium-low maintenance

fuelled the demand side of the housing market. With a slower supply of housing, prices soared. The continuous increase in demand combined with easy access to credit created the pretext for a perfect storm: a housing bubble was in the making. This housing bubble came to burst with the economic meltdown which started Autumn 2019 (see Section 5.3).

In the ABM we model the assassination and war as follows:

- An influx of capital and immigration (of diaspora) after 2005;
- Widespread destruction to residential dwellings in the most-affected bombed districts with building conditions set to zero: Chiyah and Haret Hreik;
- Varying damage to residential dwellings in other districts, and a decrease in maintenance level in general (reflecting the collateral and intentional infrastructure damage);
- Household agents who were living in destroyed or badly damaged buildings have to move, and seek another place;
- Influx to Greater Beirut of households displaced from southern Lebanon;
- An increase in the tolerable cognitive dissonance, due to the (forced) mixing of sectarian backgrounds as displaced persons sought shelter;
- Increase in available household mortgage credit ratio;
- Targeted post-war regeneration. Namely, reconstruction of destroyed neighbourhoods, increased lending credit, and an increase in economic capital due to external injections, e.g., from Iran and Qatar.

Details of the model implementation of these are described in Appendix B.

We examine two scenarios in an explorative manner by studying the impact on housing and household mobility for eight years after January 2005: one scenario as if the 2005 and 2006 events did not occur (baseline scenario) and one if they did (Figure 3).

Figure 3 shows that, four years after the 2006 war, the effect is still marked on the most heavily-impacted areas of Beirut (south of the municipal boundary). In Figure 3 we also see the displaced households spread around the margins of the municipality, in lower-condition dwellings. In the following years, the reconstruction investments and the regular economic cycle lead to regeneration—and refugees from Syria start to arrive (see next subsection). Median house prices are higher in the event scenario (by 55%), as indeed occurred in the historical data. By considering various scenarios of interest, policy makers might use the ABM to, for instance, examine relative inequality between districts in terms of recovery from the war damage, and ask whether district-specific or general-economic interventions could be better.

5.2. Case 2: The Syrian War From 2011

The popular uprisings in 2011 took to the streets of Tunisia, Egypt, Libya, Syria, and Yemen in what came to be known as the Arab Spring. People were demanding a democratic transition from dictatorships that dominated these nations for more than 40 years. In Syria, the uprising failed to bring about a political change but rather seeded a protracted civil war. More than 1.5 million refugees—officially registered with the UN or not—

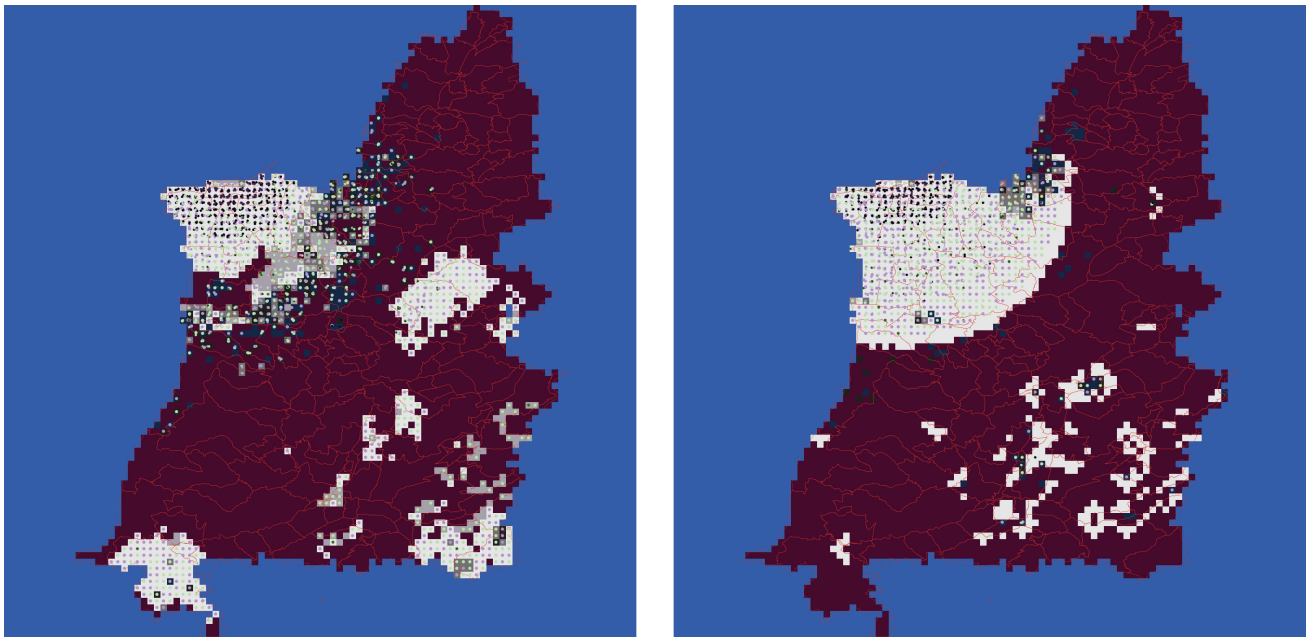

Figure 3. Beirut in 2010, a year prior to the Syrian refugee influx. Scenario with 2005 and 2006 events (left); same time point in the no-events scenario (right).

fled Syria to seek safe shelters in neighbouring Lebanon. Ten years on, with the war in Syria apparently ending, the majority of the Syrian refugees still reside in Lebanon for various reasons. The significant presence of refugees exerted extreme pressure on the Lebanon's already inadequate infrastructure, especially water supply and electricity power networks. With the collapse of the Lebanese economy in 2020 (see next subsection), added pressure is felt in the energy and food sectors.

The impact of refuges on the urban dynamics of Beirut and its housing market is enormous, as examined in detail in Termos et al. (2021). In the ABM we model the refugee influx from January 2011 with a single change: immigration of large numbers of generally low-income households.

We explore the effects of three refugee scenarios: no influx (baseline), influx during a time window (four years), and ongoing influx. We examine population balance (Lebanese, refugees, "guest" workers, affluent expats), population distribution and mixing, mean household income, mean property price, and maintenance levels. We run the simulation for up to 50 simulated years, to study the longer-term effects. Figure 4, for example, shows mean prices at four time points during the simulation, compared for four different levels of capital in the economy. On the horizontal axis is time at four points in time, measured in time as months from January 2011. On the vertical axis is mean house price in nominal USD. In each graph, at each time-point, prices are shown in four scenarios for parameter "Kapital." This is a simulation parameter of the level of capital in the economy (Picascia et al., 2015).

Higher capital implies more scope for investment and regeneration according to the rent-gap theory. However, we see that higher capital does not necessarily result in higher prices: see both scenarios at month 600, where the highest prices are at lowest levels of capital, as Termos et al. (2021) discuss. We also observe differences between the no-refugee and refugee scenarios: without sufficient capital, the economy cycle in the longer term cannot overcome structural deterioration to the housing stock (Termos et al., 2021).

Further, using the ABM we can examine interventions and policy measures that the government or non-government organisations (e.g., World Bank, UN High Commissioner for Refugees) might consider. For instance, changes to the income support granted to UN-registered refugees, or intervention to improve housing conditions.

5.3. Case 3: Economic Collapse From 2019 and Port Explosion in 2020

Between 1997 and 2019, the Lebanese Pound (Lira [L.L.]) had been pegged to the U.S. dollar by maintaining an exchange rate of L.L. 1,507 to USD 1. In the wake of the October 2019 protests against the government, and the consequent economic collapse, this peg came to a halt and the exchange rate of the Lebanese Lira against the dollar depreciated catastrophically to reach a bottom of L.L. 8,000 in July 2020, L.L. 15,000 in March 2021, L.L. 19,000 in July 2021, and then L.L. 27,000 in December 2021.

It is estimated that the total banking assets were nearly $150 billion by the end of 2019, three times the value of Lebanon's GDP. Most of these assets had been invested in government bonds through the BDL. Throughout 2020 and up until mid-2021, inflation had risen to 400%, unemployment to 40%, the minimum monthly wage dropped from what was equivalent to $533 (nearly L.L. 800,000) to $42 at an exchange rate of L.L. 19,000 per dollar. According to the World Bank estimates, by July 2021 more than 50% of the Lebanese population lived under the poverty line. It is also worth noting that there were an estimated 1.3 million Syrian refugees still living in Lebanon, many as formal or informal tenants in Greater Beirut.

In light of the economic collapse and currency depreciation, the impact on the housing market in Lebanon was twofold:

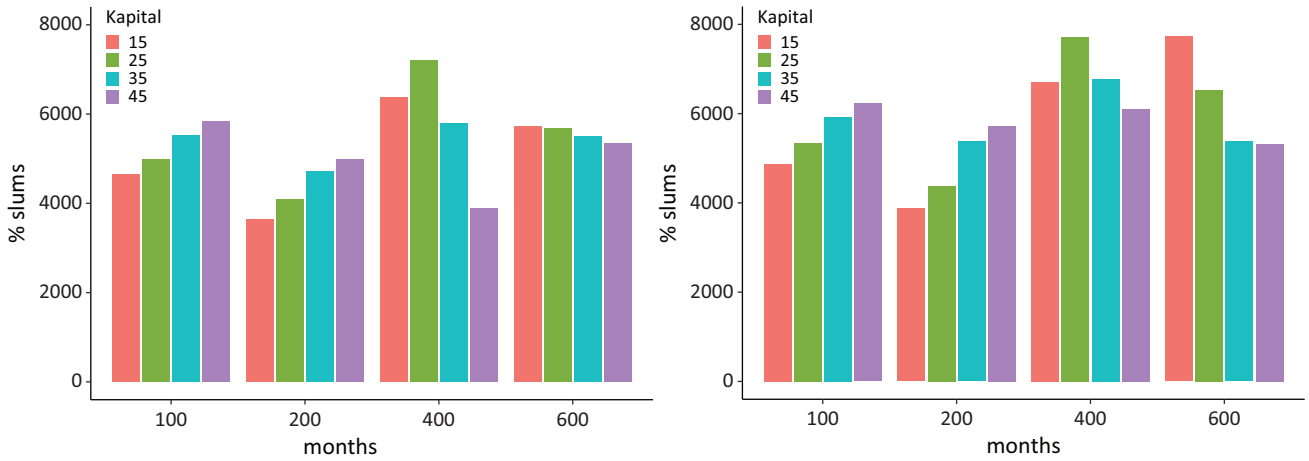

Figure 4. Mean property prices over time according to various levels of capital: no-refugee scenario (left); ongoing refugee immigration scenario (right). Source: Termos et al. (2021, p. 19).

1) *The rental housing market.* Given the enormous depreciation in the Lebanese Lira, property owners are assuming sharp declines in the contractual rents they receive in light of the new exchange rate. Given the rise in unemployment and the decline in purchasing power, demand for housing has already dwindled. We expect that this new dynamic in the rental market will further shrink the demand side because in pre-crisis dollar: a rent of $1,250 amounts to a third of a middle-class household monthly income (L.L. 6,000,000) but in a post crisis dollar, a rent of $308 would eat up the entire monthly income for this group of households, at an exchange rate of L.L. 19,500 per dollar.

2) *The home ownership or the mortgage market.* A unique dynamic was at play in the mortgage market at the onset of the crisis. The banking sector, being under immense pressure by depositors demanding their deposits, has developed a cheque-clearing market in which the bank pays a depositor a cheque that can be only liquidated to pay a debt of a borrower at either the same bank or at another bank within the country. By this market mechanism, banks managed to reduce their liabilities and mitigate the risk borne by their assets. This has given a rise to demand for real estate in the period that followed the collapse of the banking system and the inception of capital control. Obviously, this unique market irregularity did not clear out all real estate supply. While banks stopped issuing any new loans, particularly real estate mortgages, the mortgage market is stalled. In a market that is hungry for foreign reserves to complete half-finished real estate projects, and in a country where more than 75% of consumer products are imported, real estate supply has exceeded demand by many folds. The drop in real estate prices was under way by 2021. According to some estimates, this drop has reached 40% to 50% in high-end properties by July 2021.

In the context of the "tragedy in the making" of the economic collapse (Bisat et al., 2021), on 4 August 2020, a huge explosion rocked the entire city of Beirut with reverberations felt as far as Cyprus. It was described as among the largest non-nuclear explosions in modern history (Valsamos et al., 2021). The explosion was a result of detonation of roughly 2,750 tons of ammonium nitrate stored in a warehouse at the Port of Beirut for more than six years. Nearly 200 people were killed and more than 6,000 injured. The force of the blast ravaged the surrounding densely residential areas and commercial districts around the port. The direct loss left 31,000 houses uninhabitable, 13,000 households without shelters, and around 300,000 people displaced (UN Development Programme, 2021). We thank an anonymous reviewer for suggesting that these UN estimates might be true in the immediate time after the explosion, but after the initial cleaning of debris the numbers have been revised downward to around 15,000 damaged homes and 250 completely destroyed.

In the ABM we model the currency crisis and explosion as follows:

- Decrease in household incomes, by an average of 50%;
- Widespread destruction to residential dwellings in the most-affected districts with building conditions set to zero: Marfaa, Medawar, and Remeil;
- Varying damage to residential dwellings in other districts, such as Bachoura, BCD, and Saifeh;
- Household agents who were living in destroyed or badly damaged buildings have to move, and seek another place;
- Increased emigration rate from metropolitan Beirut and Greater Beirut;
- Most damaged areas cannot be regenerated for some time, at least 12 months.

We ran the simulation from a start date of January 2019, for a period of 10 simulated years. In the shorter term, the effect on the city and its residents can be seen (Figure 5). In the longer term, assuming sufficient capital in the economy, the regeneration process means that residents can move back (Figure 6). Note the greater population and population density in the no-explosion scenario.

Quantitative metrics from the simulation show the difference the 2020 events make on urban dynamics, even eight years later (i.e., 2028). In both scenarios (with and without explosion), the percentage of *slums*—defined as areas with low maintenance level or overcrowding—is substantial. This is due to the decline and economic cycle of the housing market and the continued presence of a large low-income population, both refugees (from Syria) and also Lebanese (due to the currency crisis). However, the explosion scenario has 71% slums vs. 67% for the no-explosion scenario. Interestingly, median house prices are higher in the explosion scenario (by 75%) after eight years (note these nominal figures cannot be compared with those in the other case studies, due to the starting conditions: they are valid internally within each case study). This reflects increased demand for the reduced supply of inhabitable dwellings.

Foreign reconstruction aid, or fiscal aid to the Lebanese public sector, is expected to improve economic conditions. At the time of writing, such aid has been withheld by the international community due to the lack of government in Lebanon. The ABM allows us to explore the what-if effects of such intervention, such as localised regenerations in the east, as seen in Figure 7 (left) and structural aid to the property market (right). Localised regeneration has the advantage of sooner benefitting the residents and condition of the most affected area;

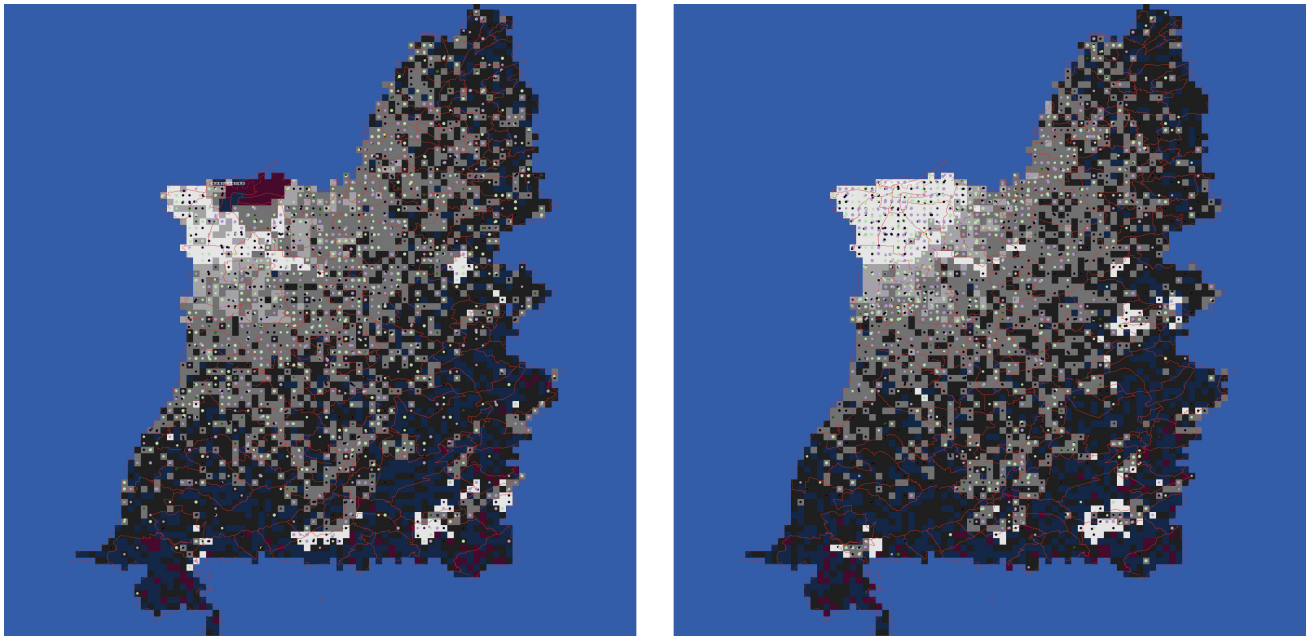

Figure 5. Six months after the explosion (left); same time point in no-explosion scenario (right).

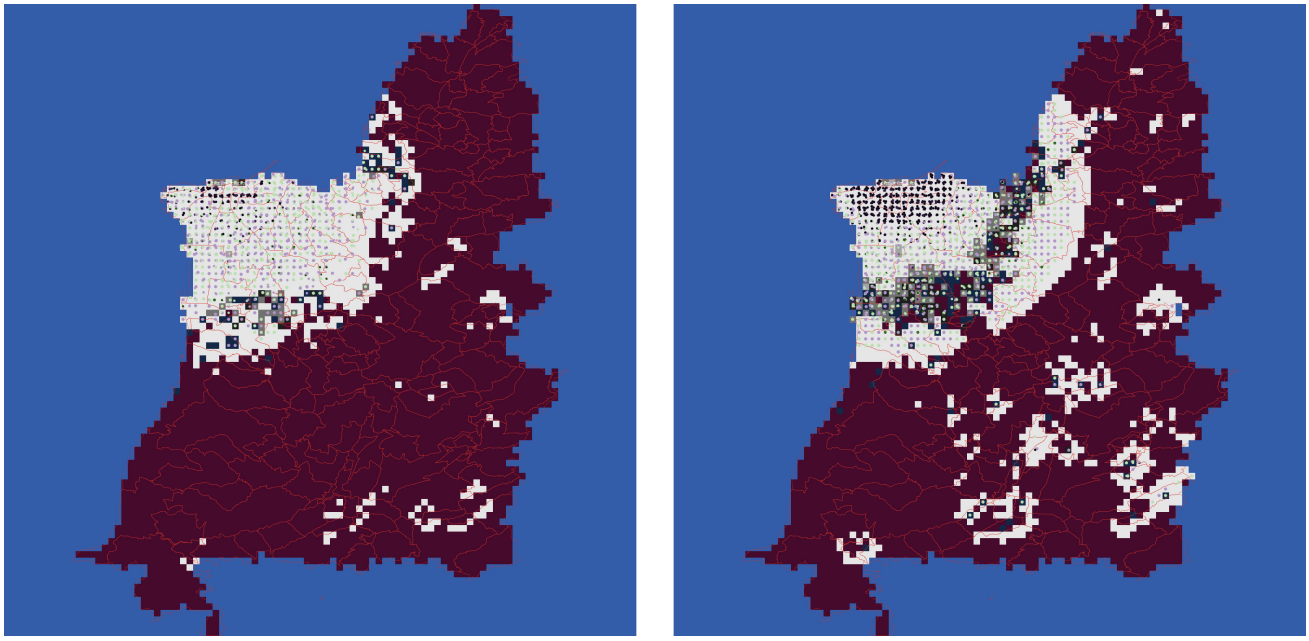

Figure 6. Eight years after the explosion (left); same time point in no-explosion scenario (right).

however, structural aid is more effective overall across the city, and also can regenerate the affected areas after a few years in time.

6. Conclusions

This article brings to bear ABM on three of the crises of Beirut's 21st century history. We examined the consequences on the residential housing and urban dynamics of Greater Beirut of a popular anti-government uprising and a border conflict, a spillover of a neighbouring war, and a currency collapse exasperated by a large downtown accidental explosion. The contribution of the article is to show the feasibility of a data-driven quantitative-qualitative individual-level simulation, a methodological approach complementary to and triangulating with other methodologies such as equation-based quantisation and literature-based enquiry. Specifically, we studied how ABM can give insights in determining the optimal amount of capital needed for regeneration without triggering a price increase in the housing market. Further, by using the ABM for "what-if" analysis and for understanding emergent urban outcomes, planners, policy makers, and humanitarian organisations

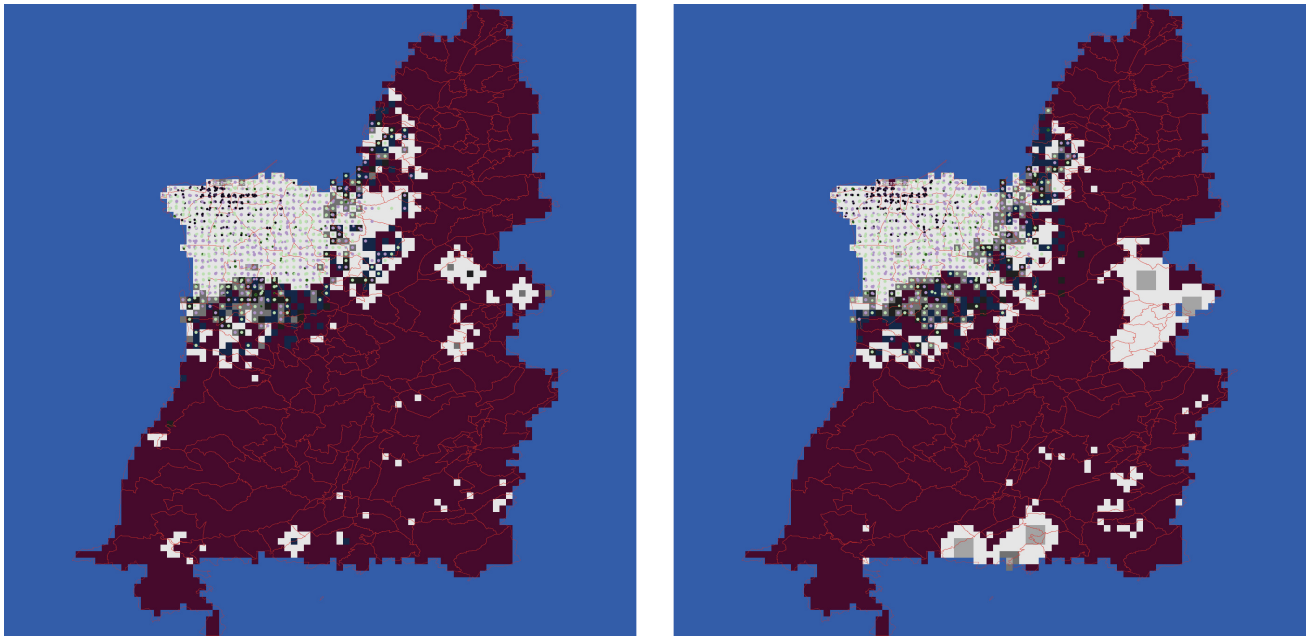

Figure 7. Effect of housing reconstruction aid, seen eight years after the explosion (left); effect of structural aid to the property market seen at same time point (right).

have a tool to help in responding to shocks upon the urban environment.

With the ABM, we can identify the areas and scope of potential built regeneration in Greater Beirut and its peri-urban area. We see that localised interventions, such as in the area most damaged by the 2020 explosion, appear less important than the general economic situation. We can likewise examine the impact of refugees on the housing market. We see that with sufficient capital in the economy, the shock of large population influxes can be absorbed in the long run. Overall, we can examine the capital–price trade-off in scenarios of interest to policy makers.

It is worth noting how this article enlightens future studies on how one can use GIS data to measure population at the cadastral level or even at the street level and over different periods. This would have not been possible without the use of algorithms to match GIS data with our target localities. In such countries where population census is rare, we bridge this gap by using this technology. Another advantage that is brought about by using (open access) GIS and geo-coded data is that we were able to obtain population counts for the various periods of study or in continuous time if desired; something that is not available with the conventional census data.

A number of expedient directions for future work are opened up by the methodology developed here. We mention two. First, we provided a demonstration of feasibility and potential value of ABM in the study of Beirut's urban dynamics and economy, going beyond prior work that studied only population shocks. One can increase the level of fidelity modelled, bringing together detailed building GIS data with household behaviours. This would blend spatial micro-simulation (cf. Valsamos et al., 2021) with agent-based micro-to-meso simulation. Second, there is a rich vein of macro-economic data analytics that can further inform and complement the ABM: for instance, how Lebanese banks developed non-cash agility in the mortgage market in order to clear out housing supply during the currency crises. This would complement purely econometric analysis of the property market with behavioural aspects from household residential mobility decisions.

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Conflict of Interests

The authors declare no conflict of interests.

Supplementary Material

Supplementary material for this article is available online in the format provided by the authors (unedited) and it consists of the appendices. The NetLogo model source code is available online at www.doi.org/10.4121/18780524.

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Article

Conservation of Beirut's Urban Heritage Values Through the Historic Urban Landscape Approach

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Abstract
Cities are complex urban systems with dynamic transformations in their socio-economic and environmental dimensions. Several studies have shed light on the fragility of the urban heritage and the strategies of its conservation. The historic urban landscape (HUL) approach is a new framework adopted by UNESCO to deal with urban heritage. This article aims to apply the HUL approach to the rehabilitation and management of Beirut historic neighbourhoods impacted by the massive Beirut port explosion, focusing on Armenia Street in the Mar Mikhael neighbourhood as a case study. The application of the HUL framework allows for the re-evaluation of heritage not as an individual physical form but as an urban fabric interconnected to the city, inclusive of its cultural, social, architectural, and urban layers. The article investigates the application of the four tools identified within HUL recommendations—(1) regulatory systems, (2) community engagement, (3) planning, and (4) financial tools—by proposing implementation strategies in the assessment of urban heritage to mitigate major risks. The result reveals that cooperative efforts among private and public stakeholders can play a vital role in the development of Beirut heritage, acting as catalysts for urban heritage conservation. Strategies for establishing a new legislative framework that is focused on protecting Lebanese cultural heritage and ensuring sustainable adaptation planning are highlighted.

Keywords
Beirut; collaborative tools; historic urban landscape; intangible heritage; tangible heritage; urban lab

Issue
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1. Introduction

In modern conservation practice, the consideration of the "urban dimension" is essential to properly debate the limitations of the traditional architectural conservation principles. Beirut, a city that has been burdened by several urban development issues, including uncontrolled urbanisation and lack of infrastructure, and multiple crises, such as economic crises, political unrest, and the massive port explosion, is selected as a case study for the application of the historic urban landscape (HUL) approach. The city epitomises the dilemma of heritage protection under the guidelines mentioned in "The UNESCO Recommendation on the Historic Urban Landscape" (World Heritage Training and Research Institute for the Asia and the Pacific Region, 2016), which include a comprehensive approach in understanding historic areas as dynamic multi-layered structures including cultural and natural attributes as well as preserving the quality and sustainability of the built environment while promoting their social and functional diversity. The HUL approach was defined in the Vienna Memorandum 2005 and adopted by UNESCO and the World Heritage Centre in 2011 to identify new urban

conservation tools that contribute to the conservation of urban heritage values through an innovative toolkit (Bandarin & van Oers, 2012). Amongst other principles, the HUL approach relies on collaborating with the community in conservation efforts and developing strategies within an adequate regulatory and financial framework, intending to protect the integrity and authenticity of the heritage context in its tangible and intangible forms.

In Beirut, the priority in protecting the heritage core of the city has shifted towards integrating heritage buildings and assets into the modern functions of the city; however, the established debate between the conservation of heritage and its unavoidable and necessary adaptation to the new requirements remains an issue. Furthermore, this tension has been further complicated by the August 2020 Beirut port blast, which has had a catastrophic impact on the city's urban heritage. Within this challenging context, this study aims to assess the potential of the implementation of the HUL framework within the context of the case study of Armenia Street in Beirut's Mar Mikhael neighbourhood to identify opportunities to achieve sustainable urban heritage conservation through effective community engagement. To achieve this goal, the study objectives include the definition of HUL principles and tools, highlighting relevant local and regional examples, the analysis of the current Lebanese urban policies, their impact on the status of the city's urban heritage, and the port blast as an inflexion event. Moreover, it examines the applicability of the HUL approach in the context of Beirut's urban heritage, identifies the challenges facing implementation in the post-disaster situation, and suggests ways to implement HUL tools that address the identified challenges. The article also demonstrates its applicability through an urban design intervention focused on the case study area of Armenia Street.

2. The Historic Urban Landscape Approach: Definition and Principles

The HUL approach represents a fresh understanding of the historic environment as "it provides the basis for integration of urban conservation within an overall sustainable development framework through the application of a range of traditional and innovative tools adapted to local contexts" (World Heritage Training and Research Institute for the Asia and the Pacific Region, 2016, p. 11). In addition to natural disasters, regional conflicts, and the lack of management capacity, any urban development or regeneration project can adversely impact heritage sites (van Oers, 2010). The HUL approach provides a means by which to respond to the need to improve the management process and enable the sustainable conservation of heritage urban contexts that face these aforementioned challenges (Taylor, 2015). It achieves this by providing a set of solutions to resolve planning problems within historic contexts without "freezing" heritage sites (Roders, 2019). According to the HUL approach, cities should establish the most fitting procedures and utilise the most appropriate techniques and solutions that suit their context. The common principles of the HUL approach most commonly identified in the previous ten years of its application as described in Roders (2019) include activities that involve elements of *identification*, *integration*, and *prioritisation*, underpinned by *participation* and *partnerships* (Roders, 2019). Specifically, *identification* encompasses the undertaking of surveys and mappings of the city's natural, cultural, and human resources and the subsequent identification of which values and characteristics should be conserved through participatory planning and stakeholder discussions. Based on this, the degree to which these characteristics are vulnerable to socio-economic stressors is determined. *Integration* aims to ensure that urban heritage values and their vulnerability conditions are then included in the broader framework of city urban planning to *prioritise* the conservation of areas of heritage sensitivity that demand specific attention concerning planning, design, and execution of development projects. This process is underpinned by the establishment of *partnerships* and local management structures for the specified conservation and development projects, along with management procedures for the diverse set of activities between public and private players.

In demonstrating the applicability of the HUL approach, 28 case studies with different contexts were analysed in the book *Reshaping Urban Conservation—The Historic Urban Landscape in Action* (Roders & Bandarin, 2019). An example in the Lebanese context (Tripoli) highlighted the morphological structure of the urban river corridor as an integral part of the heritage of local inhabitants and the necessity to update the existing regulations (Ginzarly & Teller, 2019). Another regional case study took the tangible and intangible values of Aleppo city in the context of post-conflict reconciliation (Alsalloum, 2019). Moreover, NAHNOO (a youth-led non-governmental organisation in Lebanon) conducted a study focusing on the urban transformations of the Beirut neighbourhoods of Achrafieh and Mar Mikhael and the conservation of their cultural heritage (Aoun et al., 2020). Adopting the HUL approach, this report highlighted the importance of the economic and social diversity of the Mar Mikhael neighbourhood. In the case of Tripoli, the development of a strategy aiming to conserve natural heritage is highlighted, while in the last-mentioned example the social and economic aspects were mainly adopted to approach the HUL recommendations in Beirut. In this article, the constraints of the urban planning development in Beirut are identified and their impact on the implementation of sustainable heritage conservation is investigated.

3. Beirut: The City Context and the Complexity of Its Urban Heritage

Historically, Beirut was a small Phoenician port with little strategic importance. It grew during the Hellenistic

period, becoming a large and significant Roman city and military base during the fifth century (Salam, 1998). At the end of the 19th century, Beirut became a vilayet under Ottoman rule. After World War II, the city remained an important port for the French Mandate territories characterised by slow urban growth.

Beirut has a rich urban heritage that dates back to Ottoman and French Mandate periods. The current Lebanese conservation laws date back to 1933 and only conserve monuments built before the 1700s. As Beirut's 1954 Master Plan concentrated high densities in the historic centre, this hampered the effort to conserve the remaining heritage. Moreover, the latest modifications to the Lebanese building regulations (especially 2004) further intensified pressure on this vulnerable urban fabric by increasing the allowable total exploitation of land to maximise real estate development profit (Mohsen et al., 2020).

During the civil war reconstruction, many heritage buildings were destroyed or threatened with complete demolition. Most recently, the 2020 Beirut blast resulted in the damage of more than 640 historic buildings (UNESCO World Heritage Convention, 2020). In post-war settings similar to that of today's Beirut, a redrafting of the conservation practices is essential to better address current political, cultural, and economic realities while also considering the attitudes of numerous stakeholders concerning modernity, national identity, and authenticity (Saliba, 2013).

3.1. The Urban Heritage of Beirut and Conservation Laws

Lebanon still lacks proper legislation that protects built heritage. The main regulation is the outdated 1933 High Commissioner decision on antiquities (Ashkar, 2018). The first clause in the 1933 Lebanese Antiquities Protection Law No. 166 declares that any building constructed before 1700 is considered an antiquity, automatically registered in the General Inventory of Historic Monuments, and protected from demolition and degradation. However, this law has a very narrow perspective in defining and classifying the built heritage and in protecting the heritage urban fabric. As a result, only 75 buildings out of a total of 500 buildings in this inventory are in Beirut; thus, most of the built heritage in the capital city remains unprotected and subject to several threats.

In 1995, concurrently with the establishment of the Lebanese Company for the Development and Reconstruction of Beirut Central District s.a.l. (Solidere), the minister of culture instructed the Association for the Protection of Sites and Ancient Houses to list all the buildings built before 1945 on the perimeter of the city centre to protect them and prohibit their demolition. Consequently, 1,016 buildings were listed in Beirut neighbourhoods located in the peripheral area of the central district, which included Mina El Hosn to Medawar, via Zokak el Blat, Bachoura, Saifi, part of Moussaytbeh, Ras Beirut, Rmeil, and Achrafieh neighbourhoods. This inventory was protected from demolition by the 1996 Decree No. 1879. The following year, investors and developers working in the periphery of the central district lobbied to revise this listing, reducing the inventory by 531 buildings. The argument adopted was that as these buildings were standalone; the new recommendation to conserve all historic buildings constituting a street or a district did not apply. This was a turning point that empowered developers to request the re-classification of what was considered "built heritage," thus designating buildings in categories D and E as not being of sufficient heritage character. However, under the terms of the 2010 Decree No. 57, the Council of Ministers maintained the freezing of the demolition of the 209 heritage buildings listed in categories A, B, and C. Table 1 shows the heritage buildings classification criteria in Beirut and the number of protected buildings in Beirut.

A new conservation law was submitted to the Parliament's General Assembly for issue in 2017 but has remained postponed until now. This new law aimed to ensure fairness for building owners while placing responsibility on the state to protect monuments, edifices, buildings, and heritage installations that are isolated

Table 1. Beirut heritage building classification criteria.

Year	No. of Protected Heritage Buildings	Law or Decree	Classification Criteria
1933	75	Law No. 166	Constructed before the year 1700.
1996	1,016	Decree No. 1879	Constructed before 1945.
1998	485		Built before 1945, located in a cluster of heritage urban fabric.
2010	209	Decree No. 57	Categories A, B, and C: A — High significance and contributing to patrimonial culture heritage; B — High architectural value, illustrating a type, a period, or a construction method, and they are in good condition; C — High architectural value, illustrating a type, a period, or a construction method, but they need several interventions to rehabilitate or maintain.

or that form an urban fabric through the "Transferring the Development Rights" programme (Khechen, 2018). Nevertheless, the new law still falls short in terms of addressing the many concerns of heritage advocates, as it does not address modern-era or intangible heritage (UN-Habitat, 2018).

3.2. The Beirut Port Blast

The reconstruction of Beirut's port and the damaged surrounding areas represents an opportunity to reformulate and adopt new approaches in conserving the remaining urban heritage in Beirut. The consideration of these historical areas as economic and social assets constitutes a basis for establishing local policies for the management of tangible and intangible heritage to achieve sustainable development. Following the Beirut port blast and within the context of the economic crisis, Law No. 194 was issued in response to the urgent need to protect Beirut's historical heritage landmarks. This aimed to protect the damaged areas and facilitate their reconstruction, by putting the affected area under study, stopping the consolidation of plots, and freezing building permit approvals (and real estate development) for two years subject to renewal (The Embassy of Lebanon, 2020). In the current context and specific post-catastrophic conditions, there is a need for a new classification model to re-assess the built heritage surrounding the Beirut Central District. This assessment depends not only on the architectural significance of the building presented by its type, morphology, construction system, and materials, but also on its state of conservation. Another important indicator is the existence of "group value," which denotes the importance of the heritage building in its surrounding urban fabric.

4. Application of HUL Within the Beirut Context

The HUL approach offers a framework that enables the consideration of the complex issues identified within the Beirut context. This section aims to discuss the four tools (Figure 1) identified within the 2011 HUL recommendations, highlight the challenges in applying them, and develop an action-based programme to implement them in Beirut.

4.1. The Regulatory System

Regarding the regulatory system in Lebanon, Table 2 summarises the urban planning regulations and construction, municipal, and rental laws that directly impact the heritage context in Beirut (World Bank, 2003).

In analysing the applied laws, the shortcomings identified include outdated planning regulations that do not suit modern planning requirements, building codes that do not sufficiently consider the characteristics and condition of heritage buildings when regulating building heights and setbacks, and municipal laws that do not incentivise tenants and residents to value conservation through methods such as reducing taxes or promoting economic and social co-benefits.

4.2. Knowledge and Planning Tools

Mapping and documentation tools play an important role in aiding planning. Collecting data, detailed

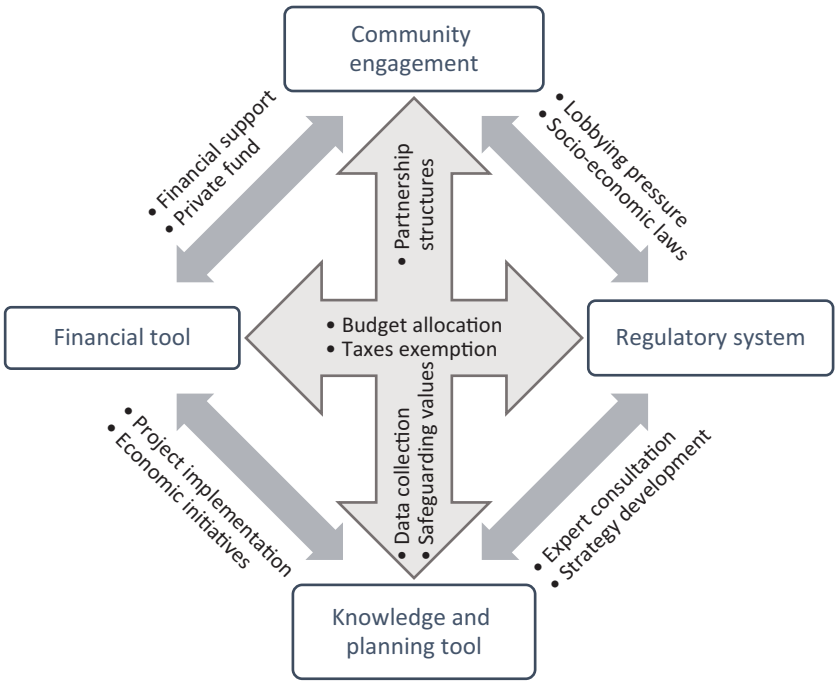

Figure 1. Interrelation between 2011 HUL recommendation tools and the context of Beirut.

Table 2. Lebanese regulations with direct impact on Beirut's urban heritage.

Urban Planning Regulations (Decree/Law No. 69 of September 1983)	Elaborate plans and regulations for the historic sites that are responsible for delimiting the districts which must be conserved or developed.
Construction Law (Law No. 646 of 2004)	The construction law is important in the conservation context as it regulates the appearance and structural integrity of buildings.
Municipal Law (Decree/Law No. 118 of 1977)	It gives the municipalities the responsibility of ordering owners to rehabilitate and restore buildings at their expense and controlling infringement on regulations.
Rental Law (The "Old" 1945 Rent Law and Rent Acts No. 159 and 160 of 1992)	The new rental law in 1992 allows periodic revisions of rents. However, most rented residential and commercial divisions in historic buildings in Beirut have contracts that are mostly older than 1992. Thus, most rents are fixed at a very low price, which discourages refurbishment initiatives from both owners and tenants.

Source: Adapted from World Bank (2003).

surveying, and GIS-based mapping coordinate visual data and capture the visual morphology of the city. While the use of this kind of urban heritage mapping in Beirut is still in its infancy, there is an urgent need for detailed and updated surveys and mappings of the city's natural, cultural, and human resources. In particular, Beirut contains significant modern built heritage (from the 1960s) that should be included in the urban heritage conservation plans but is yet to be recorded (Tabet, 1998).

4.3. Community Engagement

The stakeholders involved in the Beirut Heritage Conservation Plan are defined as public and private groups. The two most influential public stakeholders are the Directorate General of Antiquities (DGA) and the Municipality of Beirut. The DGA, under the Ministry of Culture, has the mandate to protect and conserve national heritage, including maintaining sites and buildings and overseeing and undertaking research and excavations. Despite attempts to save the damaged built heritage after the port explosion, shortcomings in the human, financial, and logistical resources of the DGA remain a significant obstacle in managing the conservation process.

The private stakeholder group involves experts working in academia and in practice, as well as in consultancy and advice, such as the Lebanese universities, the Order of Engineers and Architects, urban planners, conservationists, craftsmen, and specialists in vernacular architecture. This group is capable of communicating and establishing links at various levels and has the flexibility to respond to the encountered challenges. In addition, the community-based groups are considered as private stakeholders who are in contact with the heritage resources on a daily basis, e.g., owners, residents, and users. It also includes developers/private sector, with an (economic) stake in the heritage resource (Roders, 2019).

The World Heritage Committee (2013) implemented five recent projects in Lebanon aiming to conserve urban heritage listed as world heritage sites. These projects identified an insufficient level of coordination and communication among stakeholders, mainly due to the lack of human resources at the DGA main and regional offices. However, following the port explosion, the participation of the private sector stakeholders in the efforts to safeguard the built heritage in Beirut was considered to be highly efficient and enabled positive collaboration with administrative institutions.

Further examples of successful collaboration and empowerment initiatives can also be identified. The first is the Order of Engineers and Architects' workshops, where experts and administration representatives collaborated with citizens to establish a process of negotiation before decisions were taken to reconcile points of view. The Order of Engineers and Architects, in collaboration with several faculties of architecture in Lebanon, then produced the Beirut Urban Declaration, which lays out a broad vision for methods to reform and improve afflicted regions. These included focusing on the conservation of heritage urban fabric, considering the afflicted area's heritage character, identifying priorities for interventions, and establishing an observatory (Order of Engineers and Architects, 2021).

The second is the Beirut Arab University Urban Lab project selected by UNESCO, the UN Population Fund, and the UN Office on Drugs and Crime within the framework to promote youth-led initiatives in response to the Beirut blast (UNESCO, 2020). This aimed to empower citizens to cooperate in urban planning decision-making processes by encouraging children's participation through play using strategically designed cognitive maps of the territory of the Beirut blast in a game environment. One of the activities implemented in June 2021 was the "Beirut Miniature Model Art Exhibition" at St. Nicholas public staircase, which included activities aiming to give children a greater awareness of their local neighbourhoods and a coping strategy after the stressful event.

4.4. Financial Tools

In the absence of a clear financial strategy to fund heritage conservation and management projects in

Lebanon, investment in the conservation of built heritage on a national level is a significant challenge to local administration bodies. This is due to the lack of protection laws in its regulatory system and the lack of financial resources that could be invested in the conservation and maintenance of heritage assets. During the post-war reconstruction phase, Beirut witnessed fast urban growth and limited availability of land. The state actively developed a neoliberal economic development model, focusing on urban areas and especially Beirut, which had defined policies for nearly all successive governments since the 1990s (Ashkar, 2018; UN-Habitat, 2018).

As a result of the 2019 economic crisis, the government established a strategy to reduce its expenditure. This limited the human and financial resources available to the DGA, Beirut Municipality, and all public stakeholders involved in urban heritage development and in turn restricted the national capacity to conserve and manage Beirut's built heritage. The only current mechanism to fund any intervention or project is via co-financing by international governments and institutions, which, in the past decades, have supported projects in five Lebanese cities, which had heritage cores listed in the World Heritage List (World Heritage Committee, 2013).

4.5. Challenges in Applying the HUL Framework

A SWOT analysis was undertaken for Beirut in general and the selected pilot study in particular to understand the strengths, weaknesses, opportunities and threats associated with the implementation of the HUL approach and subsequently help inform strategies for future urban development (Table 3).

Within the context of each of the abovementioned areas, the main challenges facing the establishment of a sustainable urban heritage conservation strategy in Beirut are the efficacy of public administration and the agencies assigned the task of monitoring the management of Lebanese territories and ecological resources (Salam, 1998). Since the end of the civil war in 1990, the government has listed properties as

Table 3. SWOT analysis for HUL application in the context of Beirut and the selected street.

	Beirut	Armenia Street
Strengths	The multicultural diversity of the inhabitants indicates positive interaction with and acceptance of unconventional urban interventions and new landscape settlements.	Location of the urban heritage core in the areas that have economic and cultural potential, and that could be adapted into any new development strategy.
	Designation criteria: Outstanding universal value of many significant landmarks and heritage buildings in addition to the authenticity and integrity of their heritage value.	
Weaknesses	Lack of effective heritage preservation laws.	Funding issues and lack of coordination between different stakeholders.
	Lack of efficacy of public administration and agencies.	
	Lack of public spaces and green areas in Beirut makes the implementation of urban development projects in heritage neighbourhoods difficult.	Private ownership of heritage buildings requires substantial involvement of inhabitants in the safeguarding of urban heritage.
	Lack of benchmarking and databases of a national heritage asset.	
Opportunities	Wider interest and focus on safeguarding cultural heritage after the Beirut port blast by national experts and many international institutions.	Revitalising existing natural patches.
	Development of a new governance model to manage the heritage asset in Beirut.	
Threats	The unpredictability of the political situation and complexity of the current governmental arrangements prevent the implementation of new laws and regulations.	Gentrification in Mar Mikhael neighbourhood for the past decade due to real estate speculation.
	Growing threats of pollution and environmental problems.	High-rise buildings replacing historic buildings.
	Investment fuelled land speculation.	

protected heritage buildings, without giving their owners any incentives or grants that encourage their conservation. This led owners to successfully petition to delist their heritage properties to allow them to sell them freely to developers, who were likely to demolish them (Zgheib, 2020).

Since the 1990s, real estate capital investment has fuelled land speculation, culminating in real estate booms focused on upscale building developments. Furthermore, gentrification had a significant role in Beirut's urban regeneration and growth (Ashkar, 2018). Concerning the Armenia Street pilot case study, gentrification took place when its main economic activity pattern changed from handmade crafts to restaurants and pubs, which is reflective of the general economic trend in Lebanon over the past two decades (Gerbal et al., 2016). However, in the current climate, even these economic activities are shutting down; thus, there is an even greater need to set new objectives for urban heritage development in the area.

4.6. Developing a Practical Action-Based Programme to Implement the HUL Framework in Beirut

The first step towards implementing the HUL approach in Beirut is related to the political establishment. Specifically, it is recommended that the government set up an administrative unit for managing cultural heritage. The organisational structure of this heritage management unit needs to be determined, should ideally be recruited from the pool of public stakeholders involved in urban planning decision making, and should ideally encompass an inter-disciplinary team with proven expertise and experience in such areas as project management, public procurement, architectural design and planning, conservation expertise, and social sciences. The aim of this unit should be to formulate and implement all the relevant actions to conserve urban heritage. The following section presents actions proposed by the authors to implement the action-based programme required to integrate the HUL approach into the post-disaster recovery of Beirut:

- The *establishment of regulatory systems* that support the need to protect remaining heritage from real estate speculation in Beirut, through the development of new regulations and building laws that protect urban heritage values. This should involve the modernisation of heritage management by expanding the concept of heritage, amending laws, recognising, and encouraging networking of cultures and public participation.
- The *integration of community engagement* and financial tools that reinforce the need to ensure support for local authorities through capacity building, financial support, and employment of technical expertise. The law allows for the establishment of technical offices at municipal levels (UN-Habitat, 2018). Since Beirut municipality has a technical office, it is recommended to sustain it and support its role by ministries, such as the Ministry of Interior and Municipalities or the Ministry of Public Works and Transport. This should strengthen transparency in decision-making processes to achieve positive community engagement through informative and collaborative methods. Moreover, supporting small scale urban interventions (also known as "urban acupuncture") that promote liveability in strategically selected areas and encourage participatory initiatives aims to increase involvement of communities and capacity building, which places people at the centre of projects (UNESCO, 2013).
- The *implementation of knowledge and planning tools* that include the reinterpretation of urban heritage values by including measures that protect modern heritage and the establishment of an independent commission to conserve Beirut urban heritage. Additionally, undertaking surveys, inventory, and documentation of buildings and landmarks of historical, artistic, religious, scientific, architectural, handicraft value, and popular markets are the basis for conserving the urban fabric in a clear policy. Furthermore, the establishment of a new master plan for Beirut, with a holistic vision that applies to all districts, establishes their relation to the port, the function of this port, and their relation to the Beirut Central District. Several points should be considered in its formulation: A general policy based on the right to conserve the private property of residents and secures financial funds that allow the rehabilitation and conservation of property should be adopted and governed by the local administration and public institutions. Urban heritage must be included in the process of economic development, furthermore, the promotion of resilience through integrating cultural activities and the creative industries into the planning, financing, and implementation of post-disaster recovery action plans should be undertaken (Hamad, 2021).

5. Application of the HUL Approach in the Armenia Street Pilot Study

Armenia Street is located in the Mar Mikhael neighbourhood near the Beirut Central District. It extends from the Electricité du Liban building from the West passing through Mar Mikhael Station until the Beirut River to the East. The historical buildings on the street are remnants of an affluent residential neighbourhood that dates back to the late Ottoman and French Mandate periods (Figure 2). In the early 1920s, it became a destination settlement for Armenian immigrants. Before that, it had also included small old industrial workshops for crafts, carpentry, and metal work (El Samad, 2016).

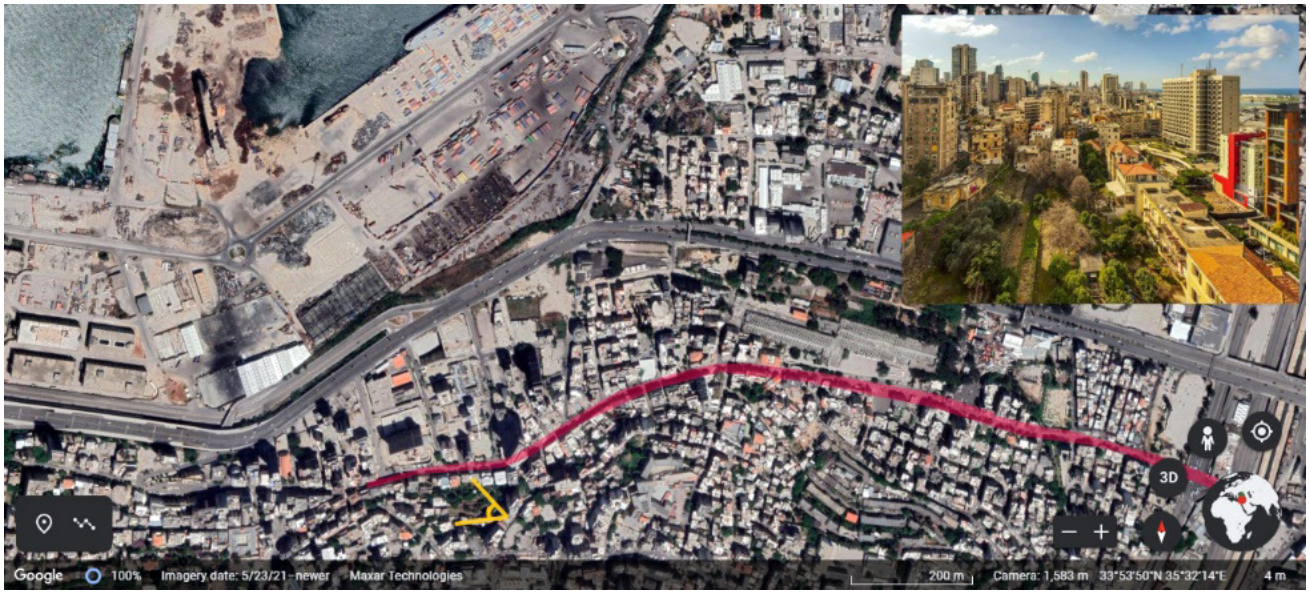

Figure 2. Aerial view of the east end of Armenia Street. Source: Adapted from Google Earth and Mrad (2020).

Over the past decades, art galleries, restaurants, and pubs have replaced the small old industries and businesses that previously characterised the area. Since then, the street has attracted a younger demographic and has evolved to become a vibrant nightlife spot. Real estate developers took advantage of the high-density exploitation factor allowed in the building code, changing the neighbourhood character and replacing old buildings with high-end towers, furthermore contributing to the gentrification of the area, the displacement of residents, and exacerbating a shortage in affordable housing (Ashkar, 2018). Nevertheless, Armenia Street still maintains its identity characterised by the continuous rows of historical buildings of similar heights and setbacks.

5.1. Threats, Risks, and Damage Assessment

As discussed above, many historical buildings have been lost and replaced with high-rise buildings due to the absence of heritage protection laws and policies. Heritage buildings are also threatened by the new transportation infrastructure. An example of a project that was refused by many activists is Fouad Boutros highway, which was set to cross Armenia Street, destroy 28 heritage landmarks, and fragment the remaining green spaces.

Following the Beirut port blast, the surviving historical buildings were regarded at risk of collapse, potentially displacing thousands of residents. Figure 3 identifies four damage assessment levels published in the Order of Engineers and Architects weekly survey, illustrating a large number of heritage buildings along Armenia Street. The map highlights the lots containing heritage buildings, indicating that these lots are mainly classified as having buildings in need of immediate structural strengthening and/or on-site structural strengthening rather than isolation or evacuation.

5.2. Natural and Cultural Assets

Armenia Street is characterised by its connection to higher areas through several public stairs and passages that create an important heritage asset for pedestrian networks and have the potential to revive abandoned spaces by reintegrating them into the urban fabric of Mar Mikhael (Figure 4). Beirut has been losing its green spaces at a dramatic rate during the past decades due to rapid urbanisation and currently has only 0.8 m^2 of green space per capita compared with the recommended minimum of 12 m^2 per capita by the World Health Organization. The remaining green patches in this area, scattered throughout the street and backyards of the old buildings, are fragmented but particularly significant. Figure 5 illustrates the mapping of the main existing trees in the selected pilot study classified according to their type and based on a field survey conducted in 2021. One of the few studies evaluating how green infrastructure can reduce the effects of climate change in Beirut's peri-central districts revealed the type of trees that can improve the pedestrian thermal comfort level during the hot summer days. It correlated between the vertical distribution of leaf area density and physiological equivalent temperature values (Mohsen et al., 2016). Moreover, community gardens and edible landscapes can play a crucial role not only in creating "sustainable cities and communities" (UN, 2020a), as mentioned in the SDG 11 adopted by the UN in 2015, but also as contributors to "ensure healthy lives and promote well-being for all at all ages" (SDG 3; UN, 2020b). Green Infrastructure consequently mitigates the urban heat island effect, minimising the energy consumption and pollution emissions related to food transportation, and promotes physical activity.

Integrating natural with cultural and tangible with intangible attributes forms the basis of the HUL

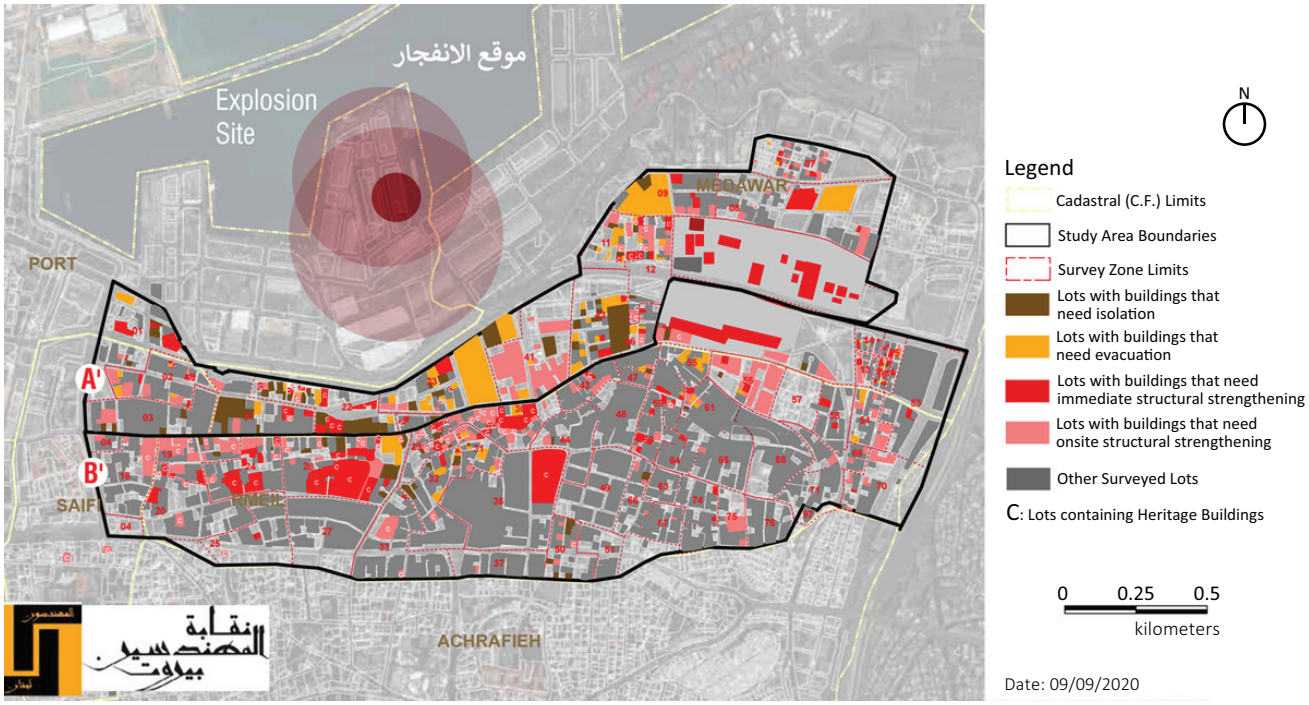

Figure 3. Beirut explosion: Weekly structural assessment report. Source: Order of Engineers and Architects (2020, p. 10).

approach; it is thus important to assess the intangible heritage of Armenia Street to regenerate the threatened area. According to the GAIA-heritage surveys (MEDNETA, 2015), small arts, crafts, and design industries are facing challenges due to the increased number of new restaurants and bars, as well as the real estate speculation since 2008. The study undertaken by Buccianti-Barakat and Hariri (2015, pp. 32–42) highlighted Mar Mikhael resident perceptions of arts, crafts, and design, and recreational activities. The survey found that the older population was very sensitive to changes that affect their traditional environment. However, in sectors to the north of Armenia Street, residents seemed less affected by the noise pollution of restaurants and pubs.

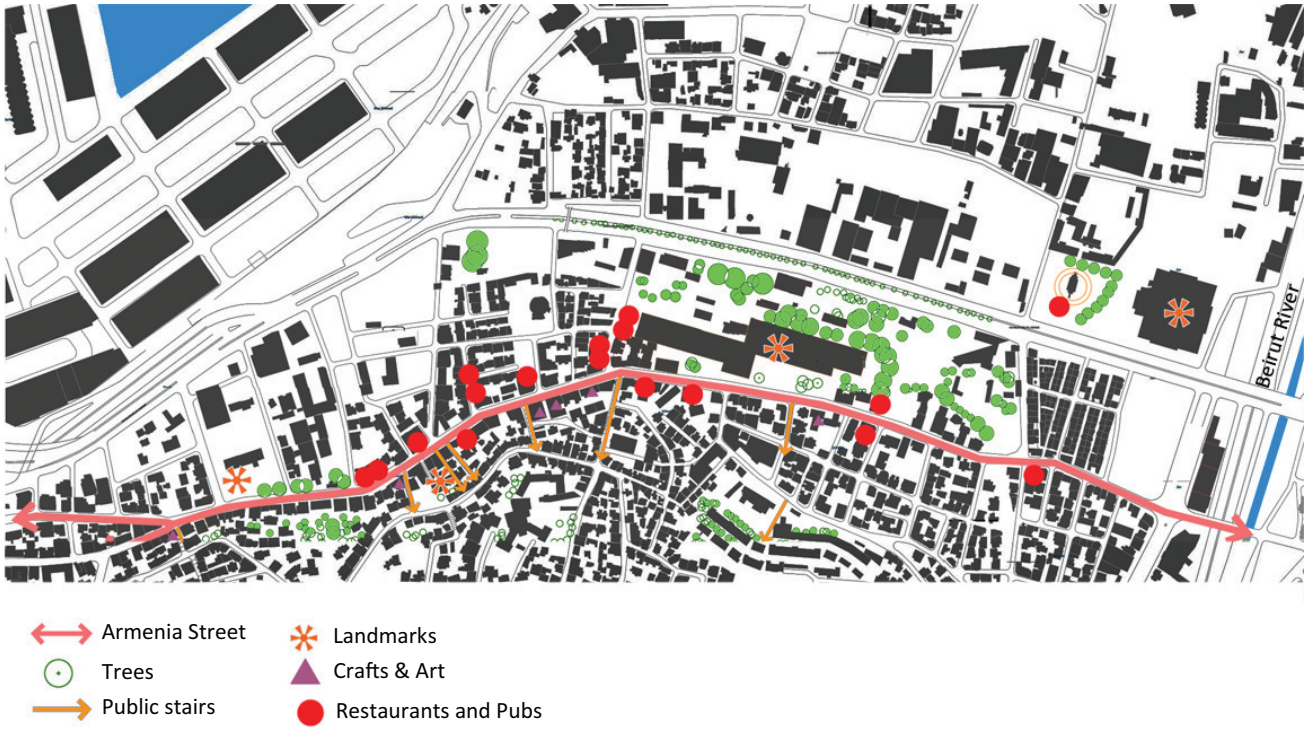

Figure 4. Commercial and cultural activities in Armenia Street.

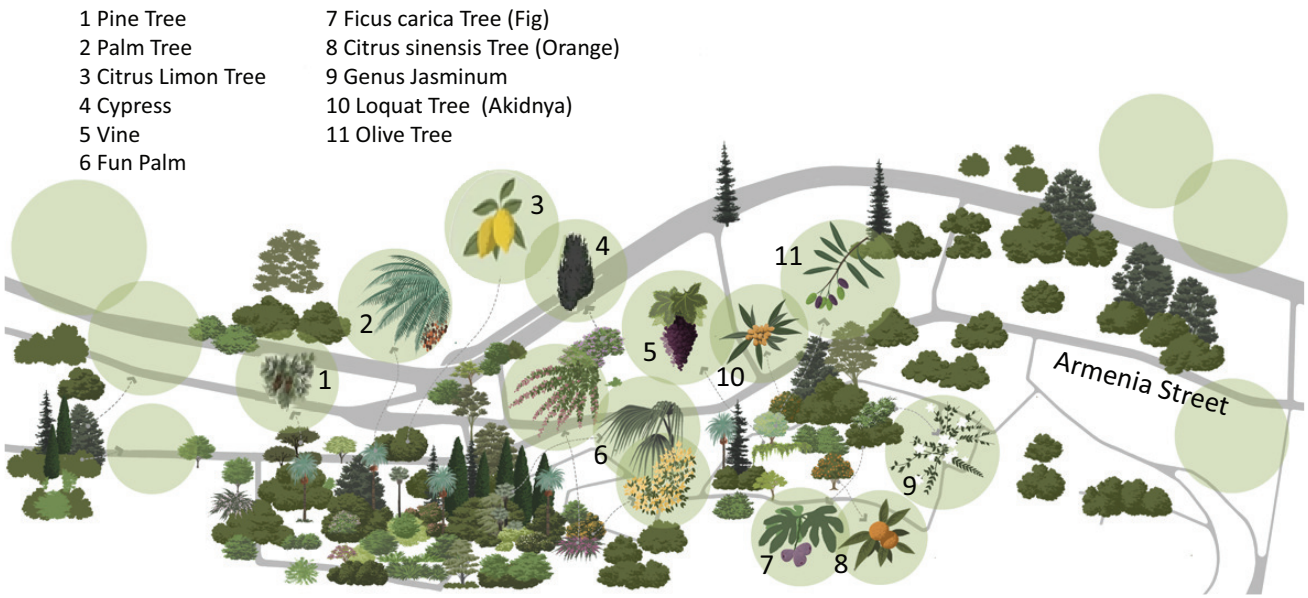

Figure 5. Existing natural assets surrounding Armenia Street: 2021 field survey. Source: Beirut Arab University Urban Lab (2021).

5.3. Proposed Urban Intervention

Following a socio-spatial analysis of the current situation, informed by the analysis described in Section 4 of this article, HUL recommendations were applied to Armenia Street to inform the formulation of an urban intervention for the area. This utilised the set of HUL tools, the two main ones being the regulatory and planning tools, where the mapping of the built heritage, natural assets, and economic and cultural activities in the street, in addition to the analysis of the regulatory system, were used to identify the challenges and threats facing urban heritage streets.

Following this, a consultation process with residents highlighted the priorities that the intervention should aim to address. Semi-structured interviews were conducted on 20 residents in Armenia Street to assess their socio-economic attributes as well as the reasons behind their attachment to the place and to understand whether they prefer to keep their building as it was before reconstruction commenced or if they are indeed flexible to changes such as the internal and/or external architectural details and materials. Moreover, during the survey, residents were asked about their willingness to improve the outdoor open spaces with a focus on the need to improve the pedestrian infrastructure.

This investigation covered 10 heritage buildings that were damaged due to the port explosion. It turned out that four of these buildings had not been restored and their residents had not returned to them after the explosion. In the absence of official statistics about the occupants of these buildings and their conditions, it will be difficult to determine the priorities of restoration by the official authorities and concerned associations. The interviewed inhabitants stressed the importance of the safe return of the residents who were displaced due to the explosion, and their fears due to the uncertainty of the preservation of their right to return to their rented homes due to the old rental law, especially Law No. 194 which protects them for one year only, where the lease contracts were extended for a full year from the date of publication of the law, that is, until October 22nd, 2021. As a validation of their concerns, Beirut Evictions (beirutevictions.org), a website dedicated to documenting and mapping the fate of old-rent buildings, shows the high rate of eviction in the past ten years in the Beirut neighbourhood.

The findings also revealed the need for economic incentives to maintain the heritage of the buildings and to encourage owners to preserve their lots/buildings, as well as to protect them from real estate speculation.

The resulting proposed urban intervention (Figures 6 and 7) focuses on the spatial and functional connectivity with the surrounding fabric by reconnecting the alleys between the buildings, existing public staircases, and remaining green areas, as well as proposing paths to re-stitch the street with the port and surrounding neighbourhoods. The main features include:

- Reconnecting the street with the Beirut waterfront through Fouad Boutros Street and by creating pedestrian bridges above Charles Helou highway;
- Adding trees to create a green network by reconnecting the existing green patches and promoting edible urban gardens;

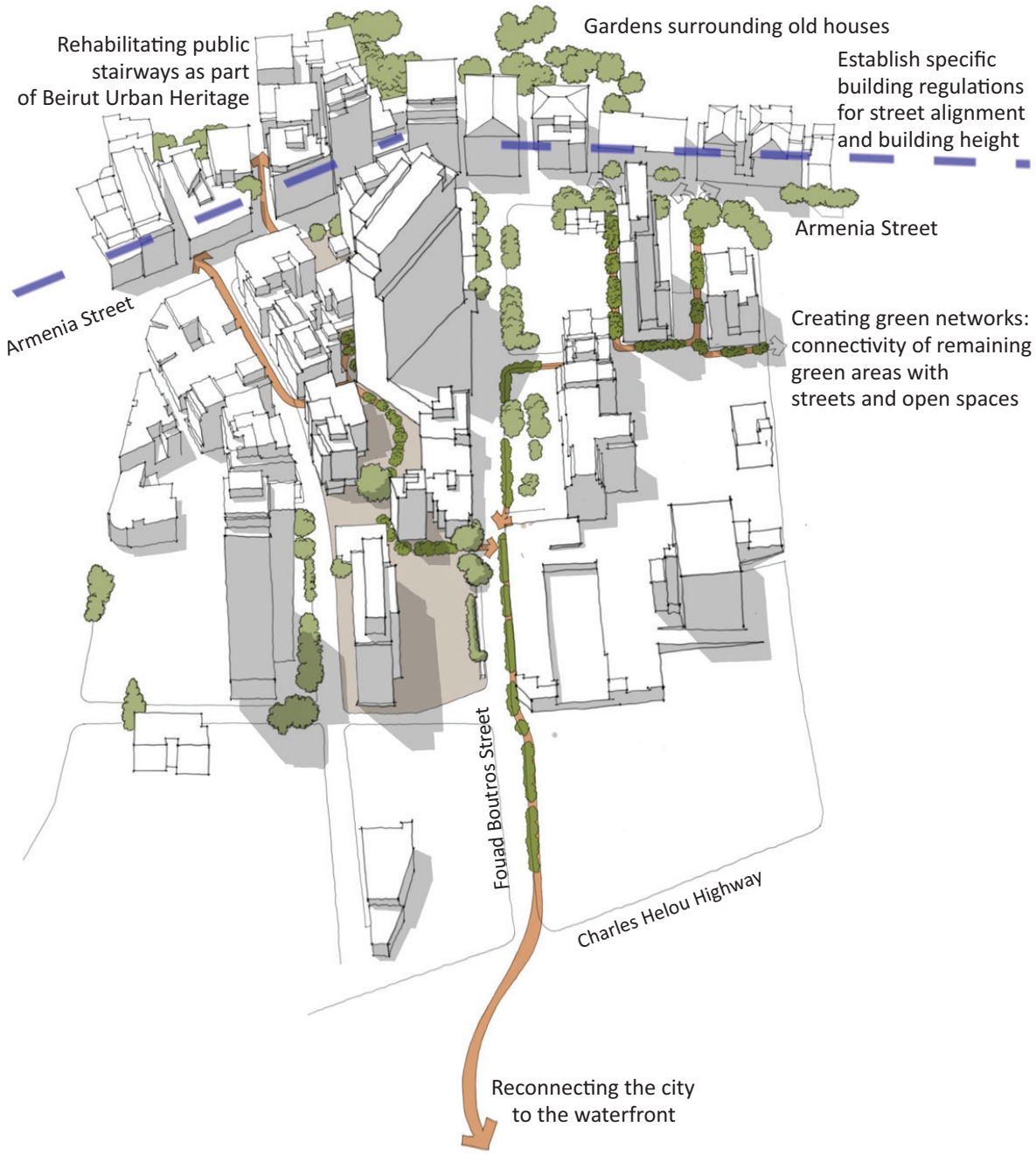

Figure 6. Proposed urban interventions in Armenia Street.

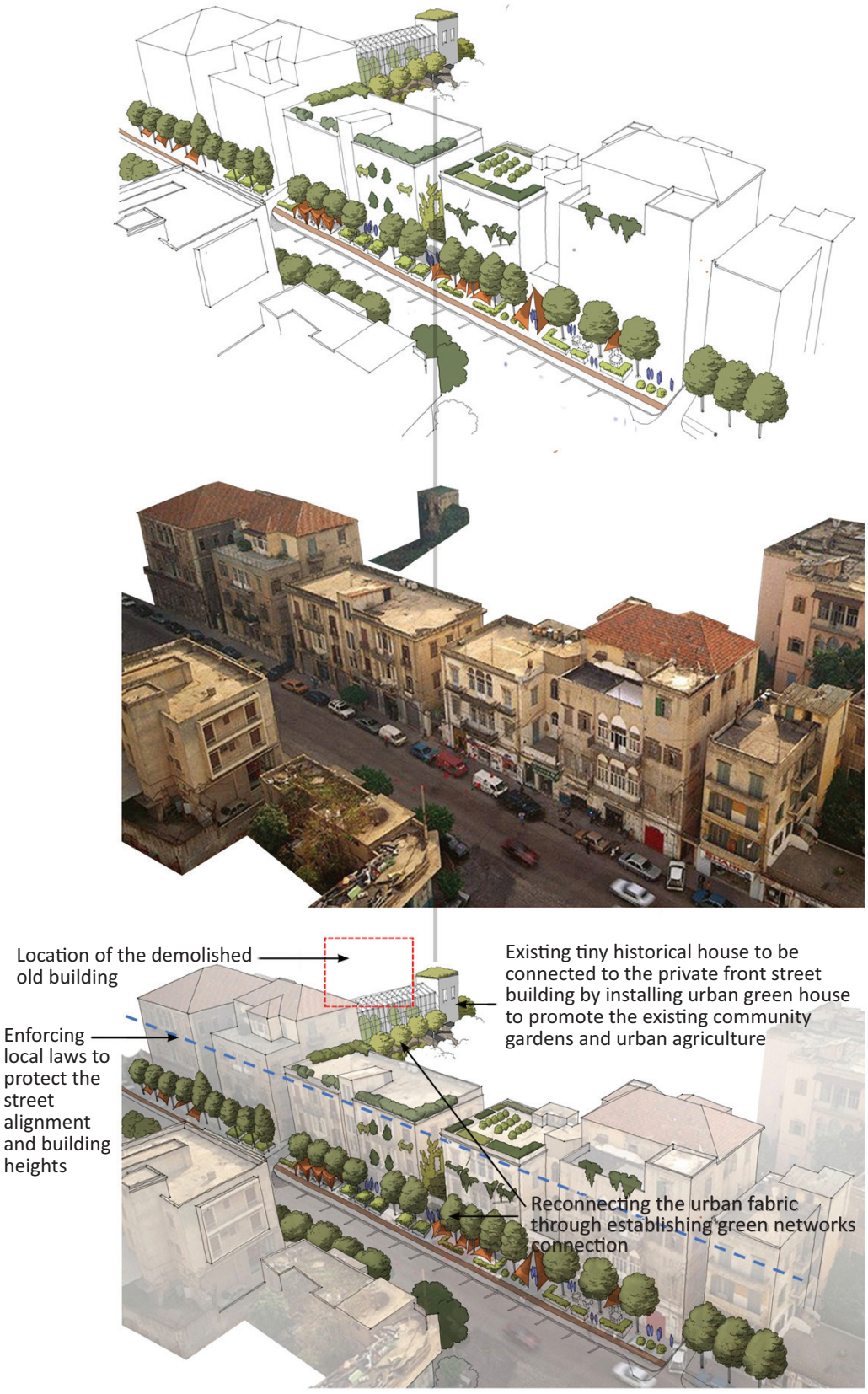

Figure 7. Proposed street interventions.

- Preserving the tangible and intangible values of heritage buildings;
- Improving the walkability and quality of pedestrian pathways by creating shading areas and improving the liveability of the street;
- Rehabilitating public spaces, especially the heritage stairways for community-centred activities and events;
- Revising building laws to incorporate Armenia Street (and all Beirut heritage streets) within a designated planning zone, where regrouping of parcels is forbidden in order to avoid the construction of high-rise towers, and limiting maximum heights to maintain the heritage fabric.

6. Conclusions

While the HUL approach aims at a long-term sustainable urban heritage development, current short-term conservation action plans to assist recovery plans all focus on the structural stabilisation of damaged buildings. Adopting the HUL approach adds to the uniqueness of the area's urban fabric and can uphold its environmental integrity by improving the liveability of urban settings impacted by climate change, urbanisation, amongst other issues. Beirut's intangible heritage, such as traditional cultural activities and daily inhabitants' experiences and behaviours, is considered a resource and can contribute to its urban heritage's rehabilitation and development through powerful community engagement and innovative interventions.

In applying the HUL framework to Beirut, the overall findings can be summarised as follows:

- The conservation of the historic value of a heritage site is in large part influenced by the transparent and effective involvement of residents in heritage management. This is demonstrated in the small interventions proposed in the pilot study in this article, which highlights that the contribution of private owners of built heritage is essential to achieving a more considered evolution of the streetscape of Armenia Street;
- Investment in cultural heritage through conservation, adaptive reuse of cultural heritage assets, and tax incentives should be encouraged;
- Current regulations have failed to safeguard surviving green spaces from aggressive real estate development. Nonetheless, remaining green patches can contribute to the formation of a green network, which may be strengthened by planting trees parallel to roadways and pavements.

The findings of the analysis of the selected pilot study have significant policy implications in the wake of the post-blast reconstruction processes as they demonstrate how the defined set of tools can be used to develop solutions to overcome the challenges encountered.

In the case of Armenia Street, the steps to establish an effective urban conservation strategy that adopts the HUL approach are as follows:

1. To conduct natural, cultural, social, and architectural surveys and mapping of the area;
2. To analyse the data collected to identify and define the neighbourhood's significant assets and values and the challenges and problems facing their conservation;
3. To apply a decision-making process to prioritise which values should be conserved through participatory planning and stakeholders' discussions.

It should be noted that while Armenia Street is one piece of mosaic forming the urban pattern of Beirut, this holistic approach should ultimately be applied all over the city and should consider urban heritage values and their sensitivity to the broader city urban plan. The above process should be reflected in a new master plan and a revision of the regulatory system that allows the updating of the building regulations, rental law, and national preservation listing criteria of built heritage. Together with suitable management structures and their funding resources, these will ultimately pave the way for the conservation and development efforts for the heritage streets in Beirut to commence.

In conclusion, while HUL does provide a promising route to balancing urban heritage conservation with sustainable development of historical areas facing processes of urban transformation, its successful application requires a better understanding of the approach and the requirements needed to establish an infrastructure that supports the collection of information and the development of adequate management processes. Municipalities have a crucial role in formulating planning policies to conserve and manage urban heritage by adapting the HUL approach and planning the city's local distinctiveness.

Conflict of Interests

The authors declare no conflict of interests.

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Article

The Evolutions, Transformations, and Adaptations in Beirut's Public Spaces

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Abstract
Beirut, Lebanon, has been a nexus for the east and west, has undergone episodes of conflict including the civil war between 1975 and 1989, and still witnesses instability to the present. This status has affected its everyday life practices, particularly as manifested in its public spaces. Over time, Beirut's population has reflected the ability to adapt to living with different states of public spaces; these include embracing new public space models, adjusting to living in the war-time period with annihilated public spaces, and establishing a reconnaissance with post-war reintroduced, securitized, or temporary public spaces. Lefebvre's space production triad serves to distinguish among spaces introduced through planning tools, from spaces appropriated through immaterial space-markers, or spaces established through social practices. This article provides an overview of the evolution of Beirut's public spaces, starting with the medieval city and through into the 19th century, before examining the impact of instability and the conditions leading to the emergence of social spaces in the post-war period. It particularly highlights public spaces after 2005—when civic activism played an important role in raising awareness on the right to inclusive public space—by referring to literature, conducting interviews with public space protagonists, and addressing a questionnaire survey to inhabitants. The cases of Martyrs Square, Damascus Road, and the Pine Forest are presented, among other spaces in and around Beirut. The article reflects on the ability of some public spaces to serve as tools for social integration in a society that was segregated in the bouts of Beirut's instability.

Keywords
Beirut; Damascus Road; Lefebvre; Martyrs Square; Pine Forest; public space; social integration

Issue
This article is part of the issue "Urbanisation, Crisis, and Resilience: The Multiple Dimensions of Urban Transformation in Beirut, Lebanon" edited by Liliane Buccianti-Barakat (Saint Joseph University) and Markus Hesse (University of Luxembourg).

1. Introduction

This article aims to investigate the evolution of public spaces in Beirut, Lebanon, starting from the medieval city and through into 19th-century changes. It explores transformations and adaptations of Beirut's public spaces caused by the civil war (1975–1989), with social divides and consecutive instabilities to date. Public spaces are "meeting places," which influence how people experience cities (Rydin, 2011, p. 112). Particularly in divided societies, the "management of co-existence" in public spaces to avoid alienation and exclusion requires an understanding of contextual social relations, different values, and spatial practices (Healey, 1997/2006, p. 111; Makakavhule & Landman, 2020).

Public spaces have been studied in terms of their morphology, activities, users, regulation, and management (Carmona et al., 2008; Carr et al., 1992; Gehl, 1996; Madanipour, 2003). Morphologically, in addition to parks and squares, streets are the basic public space form. Streets are places of everyday encounters, festivities and protests, and the loci for social and political activities (Carr et al., 1992; Gehl & Gemzøe, 1996; Hou & Knierbein, 2017). With their surroundings, streets are mnemonic spaces, which generate, preserve, and perpetuate collective memories or "narratives and commemorative

practices'' (Hebbert, 2005, p. 592; Larkin, 2012, p. 13). In terms of public space uses and activities, these include necessary, optional, or social ones, which are dynamic and change through time (Brown, 2006, p. 22; Carr et al., 1992; Gehl, 1996; Landman, 2016). Activities are governed by social conventions, economic and legal practices including direct and indirect control mechanisms, which could lead to exclusion (Loukaitou-Sideris & Banerjee, 1998; Papachristou & Rosas-Casals, 2019; Staeheli & Thompson, 1997). Public spaces are relational, embedded in their contextual, social, political, and cultural traits (Knierbein & Tornaghi, 2015). Those that facilitate social practices and the coexistence of differences simultaneously affect and are shaped by everyday life, reflecting the society producing them (Knierbein, 2015; Lefebvre, 1991; Madanipour, 2003, p. 146).

Tying the importance of providing public spaces that enable social practices and the coexistence of differences in Beirut, Lefebvre's (1991) space production triad serves to explore the evolution, transformations, and adaptations of its public spaces. How were Beirut's public spaces produced throughout history? What is the impact of instability on these spaces? What conditions led to the emergence of social spaces? Research content for this article derives from a desk-based literature review on Beirut; several interviews conducted during 2020 and 2021 with public space protagonists, specifically in relation to the informal public transportation system, the Beirut Pine Forest; and one public space designed in the neighborhood of Naba'a in an eastern suburb. Also, an online questionnaire survey was conducted in September 2021, which provided an indicative sample of inhabitants' perspectives on Beirut's public spaces. The 122 responses yielded information on frequenting spaces along the war-time demarcation line, the availability of public spaces in various neighborhoods within Beirut and Greater Beirut, the activities performed in these spaces, and perceptions on their symbolism.

2. The Production of Public Space

In explaining social space, Lefebvre (1991) referred to space representations, representational spaces, and spatial practices as the three constituent components. These are respectively qualified as conceived, lived, and perceived spaces. Lefebvre (1991, p. 42) emphasized that space production requires tracing the historical evolution, considering that relations among the three components include "interconnections, distortions, displacements." "Representations of space" are spaces designated on maps by built environment professionals, through acquired "knowledge and ideology," and an official authority's decision (Lefebvre, 1991, pp. 38–42). Written in 1974, Lefebvre's reference was to modernist, top-down, land zoning, and car-oriented planning, which Rydin (2011) explained as comprehensive—often based on professional judgement, existing norms, and dominant views—resulting in plans fixing public space locations. Without users' participation, the plans become tools for meeting influential actors' agendas, such as investing in profitable central locations, while neglecting marginal ones, despite the latter's importance in people's daily practices (Madanipour, 2004). Designed public spaces are often highly programmed, more limited in terms of appropriation and improvisation, and less responsive to changing social needs (Gastil & Ryan, 2004; Knierbein, 2015; Kostof, 1992). In this sense, Lefebvre emphasized the importance of opposing approaches that could deter the production of social spaces (Cutts & Minn, 2018). This grounds the quest for different provision mechanisms, such as allowing for versatile, temporary spaces, whose socio-spatial role increases in times of crises (Franck & Stevens, 2007; Haydn & Temel, 2006; Landman, 2020). "Representational spaces" are spaces that are lived, affecting how users interact with and within them, by attributing meanings through signs, symbols, images, language, or even memories (Lefebvre, 1991, p. 39). Representational space is dynamic and fluid, it intertwines with spatial practices situationally and relationally (Lefebvre, 1991, p. 42). In divided societies, conflicting meanings, values, and expressions could dominate and be perpetuated across generations, thus excluding some users from these spaces (Healey, 1997/2006). Dismantling such representational spaces requires suitable conditions to facilitate social integration beyond kin or the dominant power (Healey, 1997/2006). This is possible through public space provision with place-based identities, interest-based identities, consensus-oriented processes, and the institutionalization of the collaborating groups, as identified by Mady and Chettiparamb (2016, p. 296). "Spatial practices" refer to everyday interactions unfolding in time, with and in a specific context, among people and objects (Lefebvre, 1991, p. 38). Social practices require social spaces, which are constituted when the spatial, social, and mental components interact and coexist under "favorable circumstances": If one is missing, "oppositions, contrasts, or antagonisms" might arise (Lefebvre, 1991, pp. 39–40).

Lefebvre's triad has been widely used in various disciplines (Dorsch, 2013), more specifically in relation to public space to explain, for example, its resistance to commodification (Tornaghi, 2015), its co-production and reshaping (Wolf & Mahaffey, 2016), factors influencing its variations in Qatar (Salama & Wiedmann, 2013), or its state in neoliberal urban dynamics and regeneration in South Africa (Landman, 2019; Nkooe, 2018). More specifically, in the context of divided cities, the triad served to explain power relations and the construction of urban divides, or how lived space could counter divisions reinforced by conceived space (Nagle, 2009; Véron, 2016). Regarding Beirut, the triad has been used to explain the promotion of public space identity (Saksouk-Sasso, 2015) and people's role in shaping reconstructed urban spaces (Deeb & Harb, 2013; Fawaz, 2014). In this article, Lefebvre's triad is used to

examine the historical evolution of the three spatial components, whether the domination or absence of one has affected the role of urban spaces in people's everyday lives, and whether "favorable" conditions resulted in social space production.

3. Beirut's Public Spaces

This section examines the political and socio-cultural evolution along with the tools and conditions that led to Beirut's public space production, starting from the medieval city with its spontaneous urban development and concluding with the end of the civil war (Figure 1). It is important to note that Beirut witnessed a series of cascading planning approaches from one era to another, with transitions, continuities, and disruptions, and actors involving the governing authorities and the represented prominent local communities, as will be explained in the following sections.

3.1. Utilitarian Places, Imported Models, and Market-Led Development

The medieval, walled port city of Beirut was open to external influences, with an internal religious and cultural mix, leading to a complex social structure. The city was functionally partitioned in relation to the port and the main road, later named Damascus Road, linking it to the hinterland. Inside, Christian and Muslim communities lived in quarters, each with their own center and public spaces (M. Davie, 2001). Formed through customs and traditions, public spaces were "lived" and "perceived," functional, and utilitarian gathering spaces, as reflected in their names (M. Davie, 2001). The squares or *sahas* were geometrically irregular spaces at crossroads and some served as marketplaces or *souqs* (M. Davie, 1999, 2001). *Souqs* were distributed according to their merchandise and the more strategically located ones were surrounded by several public amenities (M. Davie, 2001,

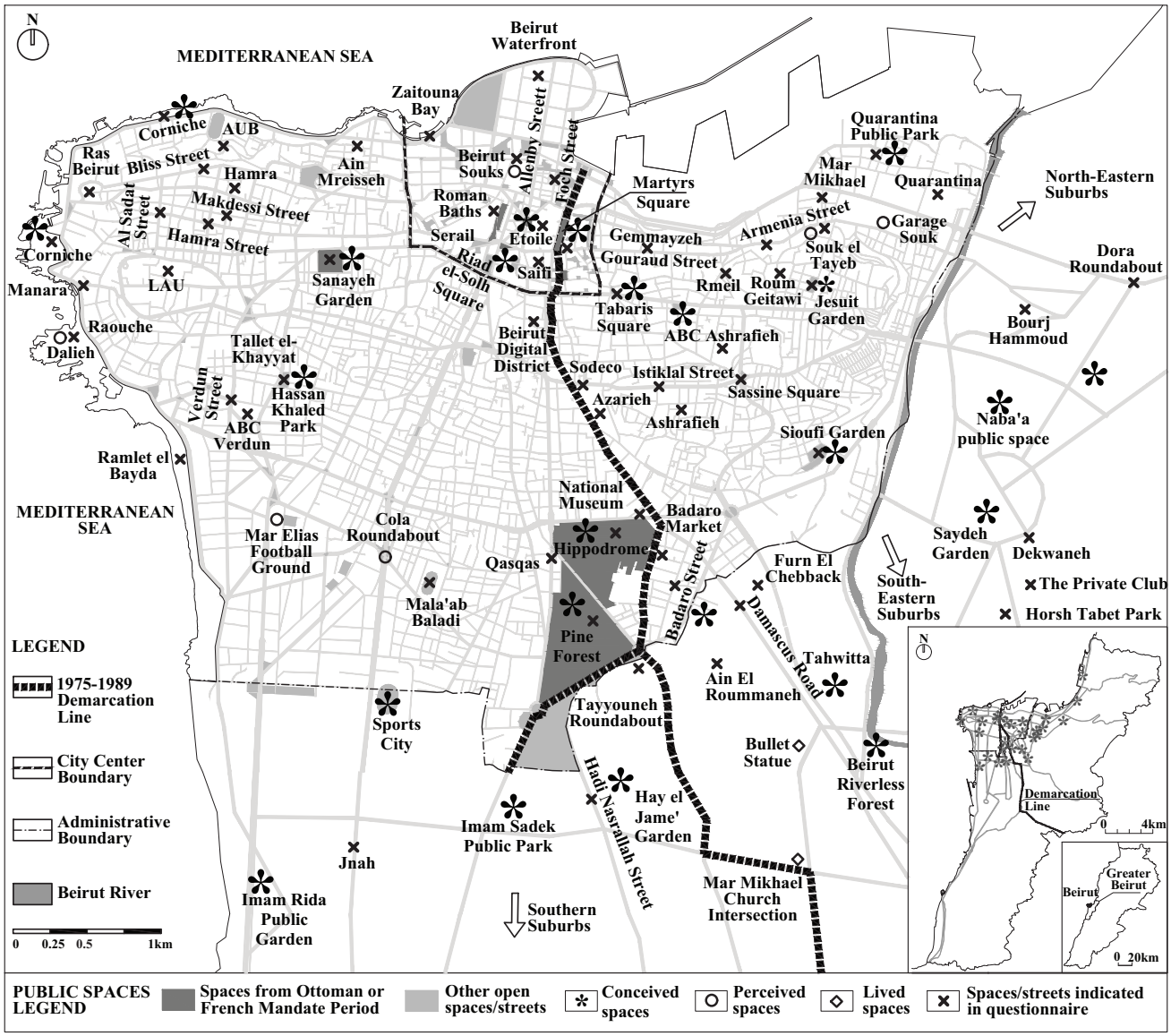

Figure 1. Beirut's public spaces through time and as indicated by questionnaire survey respondents.

p. 30). Other *sahas* were linked to churches and mosques serving different religious communities (Öztürk, 2006). Transitioning from the medieval city meant the persistence of "social practices" while spaces were gradually "conceived" according to modernization plans and "lived" according to the spirit of the age.

The first half of the 19th century marked Beirut's expansion beyond the walls, as it became the third most important Mediterranean port following Alexandria and Izmir (M. Davie, 2001; Khalaf, 2006; Saliba, 1998). Its new position as a global trade center influenced ideologies, economic processes, and social structures, giving Beirut a "European" atmosphere with some residents' newly adopted lifestyles, as evident in their public space practices (M. Davie, 2001; Khalaf, 2006, p. 52). Transformations continued in the second half of the 19th century, with Ottoman power reflected at various scales. Between 1857 and 1903, these included infrastructure projects such as the port modernization, the construction of Damascus Road, and the port railway. On the city scale, urban expansion included the demolition of the city walls and the emergence of new neighborhoods, with infrastructure including the seaside promenade or Corniche to the west, schools, religious, and administrative buildings, including the Serail, in 1853, and the neo-Ottoman style clocktower, in 1895, thus stamping Beirut with Ottoman symbolism (M. Davie, 2001; Dumont, 2013; Hanssen, 2005; Khalaf, 2006; Tozoglu, 2019). These significant morphological transformations were possible through the "Tanzimat," in 1856, which instituted the municipality, urban codes, land regulation, and systematic planning to replace organically developed urbanism; this enabled responding to urban densification following the drastic population increase after 1860 due to unrest in Mount Lebanon and Aleppo (M. Davie, 2001; Dumont, 2013; Öztürk, 2006; Saliba, 1998). Similar to other Ottoman cities, the local notables as municipal members—including merchants and community and religious leaders equally representing the Christian and Muslim communities—collaborated in space production, as part of the "urban embellishment" (M. Davie, 2001; Dumont, 2013, p. 194; Tozoglu, 2019). Beirut's modern conceived, lived, and perceived spaces were shaped by political, economic, and social factors.

On the public space scale, until the demolition of the medieval fabric, new public spaces emerged alongside the medieval ones in Beirut's multiple centers (M. Davie, 2001, p. 29). The existing pluri-functional public spaces did not lend themselves to representing Ottoman power, which necessitated "conceiving" new spaces, for example, the Hamidiye, el-Sur, and the Sanayeh Garden. In 1862 and east of the city walls, the *maydan*—a rectangular space serving horsemen during the Mamluk period (1291–1516)—was joined to the city and transformed into the Hamidiye Garden, renamed Union Square in 1908, then Bourj Square, and lastly Martyrs Square (M. Davie, 2001; Keilo, 2020; Khalaf, 2006). The Hamidiye reflected Ottoman power in its design, military parades, and demonstrations (M. Davie, 2001, p. 31). Over time, it became a gathering place for various groups with economic, recreational, and social activities; during the French mandate, it became "the meeting place of the upper bourgeoisie and newly affluent social groups" (Khalaf, 2006, p. 195; Öztürk, 2006). South-west of the city walls, albeit at a different scale and with an irregular form, sahat el-Sur was transformed from a marketplace with a coffeeshop serving the low-income class into an official public space with a fountain, used for parades and commemorations (M. Davie, 2001; Hanssen, 2005; Hindi, 2015; Khalaf, 2006). Though not centrally located, these two spaces became the city's lungs, serving the authorities and various socio-economic, ethnic, and religious communities (M. Davie, 2001; Khalaf, 2006). Furthermore, as part of connecting Ottoman territories to global economies, and with diplomatic and missionary activities locating in Beirut, the city experienced the rise of banking, commercial, and real estate development projects where public spaces became development tools (Dumont, 2013; Khalaf, 2006; Tozoglu, 2019). West of the medieval city, the Sanayeh Garden, with the vocational school established in 1905, served as a tool for developing in its vicinity businesses and religiously mixed residential projects for the "notable urban bourgeoisie" by increasing the location attractiveness and raising land value (Khalaf, 2006, p. 74).

Rather than having completely new projects, Beirut witnessed overlaps, disruptions, and continuities in its urban fabric over time, starting with Ottoman urban projects, disrupted by the French mandate (Hanssen, 1998). For the French, apart from new public spaces, modernizing the city included reconfiguring existing ones such as sahat el-Sur and Martyrs Square, continuing the Corniche and the demolition of the old *souqs* and garden houses, which started in 1915 and was completed in 1918 (Hanssen, 1998; Salam, 1998). The Haussmanian planning approach and their "mission civilisatrice" partly wiped away the Ottoman identity (Dumont, 2013; Öztürk, 2006). Planning was a tool for domination and the diffusion of modernist ideas, which impacted decision makers, urban planners, planning education, and the society at large (Verdeil, 2012). The 1927 and 1932 plans proposed a central square with radiating streets, flanked by official buildings, with the aim of establishing Beirut as a financial center, the "Paris of the East" (Dumont, 2013; Matsubara, 2016, p. 407; Öztürk, 2006). French ambitions were buttressed by a street naming system, which was akin to reinventing Beirut's identity (Keilo, 2020, p. 257). This system maintained local Christian and Muslim figure names as distributed in the eastern and western city parts, introduced new names, such as the central Place de l'Etoile Square, de Gaulle, Gouraud, Foch, and Allenby streets, but also renamed the Corniche to Avenue de Paris (Keilo, 2017, 2020). Beirut's complex social structure prevented the French "localism and swift Europeanization" scheme from fully imposing a new cultural identity, as

local resistance continued despite the elites who served the French authorities (M. Davie, 2001; Dumont, 2013, p. 196; Öztürk, 2006). Even the 1942 Ecochard plan was opposed, modified, and only partly implemented, with the contributions of local planners marking the transition from a colonial era (Verdeil, 2012).

Constituted in 1943, the Republic of Lebanon was characterized by a free-market economy, a weak state overpowered by notable families and strong sectarian community identities, and a lack of civic belonging (Khalaf, 2006). The government initially adopted the French planning system, yet the 1963 Ecochard plan for Beirut and its suburbs was modified to prioritize road infrastructure as a form of nation building and to serve trade interests (Matsubara, 2016; Monroe, 2017; Salam, 1998; Tabet, 1996; Verdeil, 2011, 2012). Beirut's expansion was left to real estate developers in a laissez-faire approach, providing few new public spaces, often reduced to road medians and roundabouts or leftovers after planning (Salam, 1998). Despite some "representational" and "perceived" transformations including changing some public space names (Keilo, 2020), the "conceived" public spaces by the Ottomans and French resulted in obdurate spaces. These included several streets, the Corniche, Sanayeh Garden, Martyrs Square, and Riad el-Solh Square.

3.2. Conflict, Annihilation, and Fragmentation

Following internal and external conflicts, the civil war erupted in 1975 between various Lebanese politico-sectarian parties; later there were interventions of foreign armed forces (Hanf, 1993; Khalaf, 2002; Traboulsi, 2012). The war had several implications on Beirut's public spaces. At the city scale, a demarcation line germinated from Martyrs Square, going along Damascus Road and south to the Pine Forest, splintering Beirut into east and west. This led to population displacement and segregation in the divided city parts with limited mobility across them. The demarcation line formed an inaccessible zone, a "no-man's land," a frontier that was intermittently crossed, a buffer having two backs facing each other, absent from everyday life, and its two extremes—Martyrs Square and the Pine Forest—slowly fading away from collective memory (Huybrechts, 1999, p. 216; Kabbani, 1998; Saliba, 1997; Tabet, 1996). The city center was destroyed, signifying the erasure of Beirut's cultural and collective memory (Tabet, 1996). Outside the center, fighting alienated the "familiar spaces of the city," including transportation terminals and public spaces, which were avoided (Khalaf, 2002, 2006; Nucho, 2016, p. 23; Tabet, 1996; Yahya, 1993). Beirut's divided parts were further fragmented along streets converted to militia frontiers, which generated multiple urban centers over time (M. F. Davie, 1993; Khalaf, 2006). These newly formed "lived" spaces were differentiated with militia space-markers, checkpoints, and barriers, which affected mobility across them and limited inhabitants' daily practices to the confines of their communities (M. F. Davie, 1991, 1993; Khalaf, 2006; Nucho, 2016; Yahya, 1993). In 1989, the Taif Agreement marked the end of the war, while Lebanon continues to undergo intermittent instability to date. The war left a "fragmented city" with irreconcilable memories, commemorations of violent events, a publicly mistrusted weak state, dominant politico-sectarian leaders, and the prevalence of private real estate development (Albrecht, 2017, 2020; M. F. Davie, 1991, p. 2; Huybrechts, 1999; Khalaf, 2006).

4. Drivers and Inhibitors of Social Space Production

Post-war Beirut faced an imbalance among the limited "conceived," exclusive "lived," and scarce "perceived" public spaces, resulting in "oppositions, contrasts and antagonisms," which manifested at the metropolitan, city, and public space scales (Figure 2).

4.1. Conceived, Perceived, and Lived Spaces

Post-war reconstruction prioritized reviving existing "conceived" spaces by reconnecting the street network including the demarcation line, and replanning Beirut's center under the public-private partnership real estate company Solidere. The center's public spaces were no longer social spaces, the inhabitants' melting pot, similar to their pre-war role (Tabet, 1996). In contrast, initiatives by activists served to realize inclusive "perceived'' spaces.

Dismantling the demarcation line excluded reinserting Martyrs Square and the Pine Forest in the city, maintaining them as deserted until 2005 and 2016, respectively. The fragmented polycentric city, with densifying east and west parts and expanding suburbs—with changed social structures and politico-sectarian tensions—kept forming new frontiers (Bou Akar, 2012, 2018). These "lived" spaces of "different politico-religious territories" were marked by monuments, signs, securitization, and stamped by collective memories, affecting everyday social practices (Ababsa, 2002; Fawaz et al., 2009, p. 181; Genberg, 2002; see Figure 3). On the one hand, mobility across these boundaries became a practice that differed according to "sectarian geographies," meaning that inhabitants moved mostly within rather than across community territories (Bollens, 2012; Monroe, 2011; Nucho, 2016, p. 3). On the other hand, securitization affected social interaction—physically, symbolically, or perceptually—by sealing off public spaces, resulting in the emergence of "militarized landscapes" and limiting possibilities for encounter across the different communities (Fawaz et al., 2009, 2012; Nemeth, 2010, p. 2489; Nemeth & Hollander, 2010).

The reconstructed city center with its highly controlled public spaces—Beirut *souqs*, Etoile (Nejmeh), Riad el-Solh, and streets—and circumscribing highways

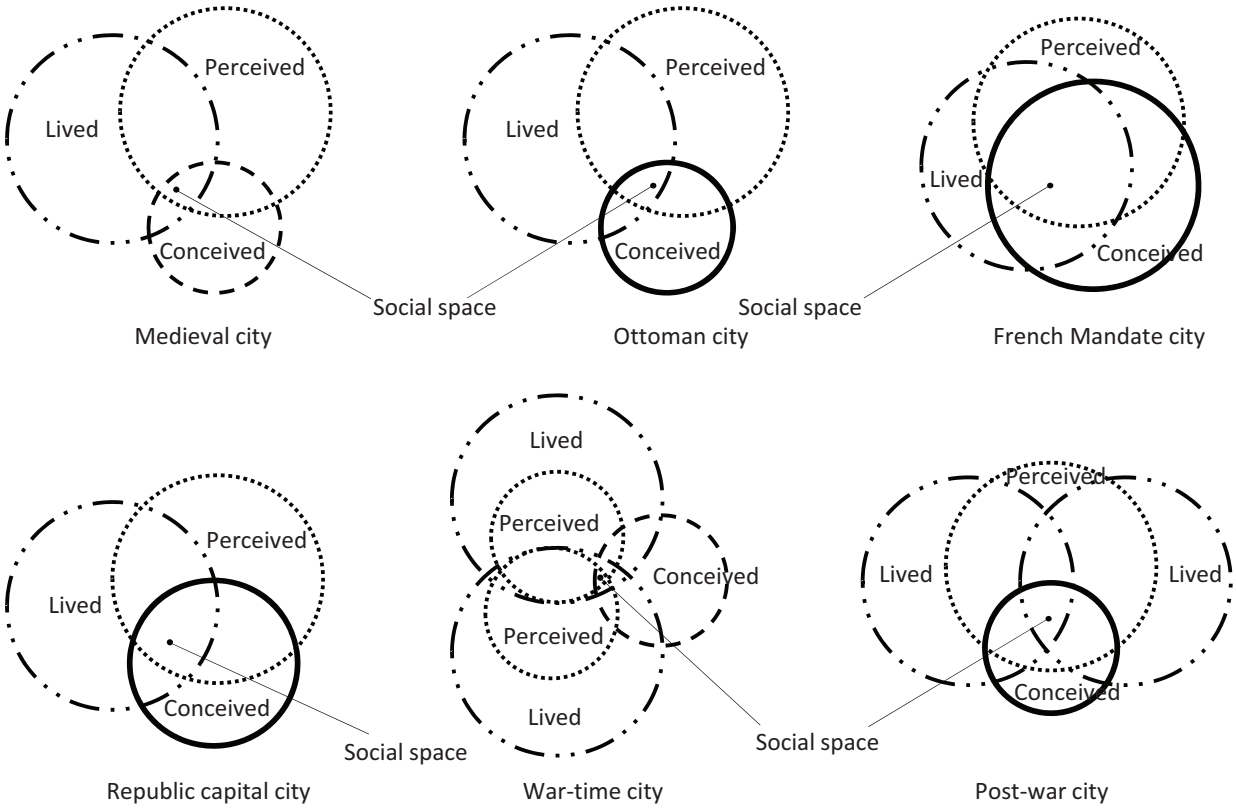

Figure 2. The space production triad in Beirut's various eras.

was disconnected from its surroundings physically, experientially, and perceptually, forming a sanitized area. This resulted in shifting most social practices from the center to the margins and strengthening the multiple "lived" spaces in and around Beirut, where communities continued to perform their daily practices within their comfort zones (Deeb & Harb, 2013).

In the absence of a post-war plan for the Beirut metropolitan area, real estate development projects or some municipal ones resulted in fragmented and uncoordinated "conceived" public spaces, scattered around rather than equitably distributed. Urban planning was also used as a tool by politico-sectarian parties to serve their communities and delineate their territories, consequently forming new frontiers (Bou Akar, 2018). These initiatives included the refurbishment of inherited public spaces such as the Corniche and Sanayeh Garden. Except for the Corniche, these central spaces were not "perceived" in people's daily lives due to control mechanisms, namely enclosure, limited access, and

Figure 3. Representational spaces: Photographs of religious and political figures within designed road medians in Chiyah (see Figure 1 for the exact location).

securitization. Marginal spaces were neglected in dense neighborhoods and refugee camps, which stood in contrast to the private open spaces of gated projects, disrupting the public domain alongside the "lived" spaces of various politico-sectarian groups, while the need was imminent for spaces that support not only the necessary and optional, but rather the social practices.

4.2. The Production of Social Spaces

Under the stated conditions, it was incumbent on third parties to provide inclusive public spaces, either by transforming obdurate "conceived" ones, or temporarily appropriating others. The year 2005 marked a turning point for Beirut's public spaces, with the reinstatement of a civic identity and an awakening of their role as catalysts for social integration (Khalaf, 2006). The "de-alienating" or re-programing of "conceived" public spaces formed a platform enabling diverse users to exchange different "local knowledge" (Healey, 1997/2006, p. 129; Knierbein, 2015, p. 54). From 2015 to 2019, local activists organized themselves and reclaimed, transformed, and produced inclusive social spaces across Beirut and its suburbs. Examples include reclaiming Martyrs Square, the reopening of the Pine Forest, a new co-designed space in an eastern suburb, and other initiatives related to mobility, public access to the sea, temporary play areas, and marketplaces.

Beirut city center's "conceived" public spaces were tools for increasing the "exchange value" of nearby properties, while overlooking their "use value" (Lefebvre, 1991). They were highly controlled, underused spaces. Martyrs Square remained a void in the city, serving as car parking, until 2005, when it became the epicenter for civic activism, with recurring demonstrations including the solid waste management crisis in 2015 (Geha, 2019) and, more recently, the nationwide demonstrations in 2019. United in their aim to provide "accessible, inclusive, and safe" spaces, demonstrators "reconfigured, transformed, and revived" these spaces, while responding to physical, cultural, and social characteristics, to accommodate activities addressing different users (Sinno, 2020, pp. 199–200). In the absence of squares, this "placemaking" approach was evident elsewhere on streets, highways, and road intersections in and around Beirut (Sinno, 2020). Similarly, awareness raising, active collaboration, and building new shared meanings was the approach of the NGO Nahnoo, which started a campaign in 2011 to reopen the Pine Forest, a goal achieved in 2016 (Mady, 2018; Figure 4). Their second goal to remove "conceived" infringement on the forest, reconnect its parts, and re-stitch it in its surroundings in 2021 is ongoing, as stated by one member of Nahnoo (E. Saad, interview, March 9, 2021).

Away from Beirut's central spaces, the municipality "has either closed these parks, opening them intermittently, or privatized them like Sanayeh, or demolished them as in Tallet el-Khayyat, where a parking lot is now under construction," as indicated by one UN-Habitat social development coordinator (M. Nazzal, interview, October 28, 2020). Accordingly, UN-Habitat's role was to facilitate the provision of inclusive public spaces, especially in vulnerable neighborhoods, one being in Naba'a in the eastern suburb of Bourj Hammoud. This densely populated neighborhood has diverse Lebanese communities and also hosts Syrian refugees and migrant workers, all living in poor conditions, where even streets barely serve as public spaces. A project to co-design a much-needed public space in this neighborhood was completed in 2016, where UN-Habitat moderated the collaboration of the municipality, residents, and refugees (Mady, 2019). In 2020, the conditions of shared identity and collaboration were missing, with the municipality's priorities shifting after the Beirut port explosion. One member considered the space as "simply not convenient at this time and in this location….There is a conflict in this space," referring to the schism among conceived, lived, and perceived spaces (G. Krikorian, interview, October 28, 2020). UN-Habitat considered the disengagement by the municipality and residents—conditions necessary to produce social space—as detrimental to the neighborhood. One resident who had actively worked to realize this space considered that it now "lacks liveliness, it is used but not much, not as

Figure 4. Martyrs Square and the Pine Forest turn into social spaces when activated by people's practices and their appropriations with signs, symbols and objects, and placemaking.

expected," and that neglecting it is "discriminatory" in a neighborhood which "gathers all sects and nationalities" and where social practices still occur (H. Fakhreddine, interview, October 30, 2020).

Responding to the lack of social spaces on a larger scale, other initiatives were implemented and included the right to shared mobility across communities, represented by the Riders Rights NGO. In 2015, a map of the existing bus system, indicating perceived spaces along routes and stops, was generated in collaboration between the NGO founders and riders, raising awareness on this social space within Greater Beirut (C. Faraj, interview, March 3, 2021; see Figure 5). Starting in 2012, several civic society initiatives mobilized campaigns for the right to access the sea and, more specifically, in 2013, this included the protection of the Dalieh cape from "conceived" projects neglecting its social practices (Saksouk-Sasso, 2015). Marginalized spaces in refugee camps were the concern of activists in terms of maintaining "perceived" play areas (Public Works Studio, 2018). Several initiatives set up temporary marketplaces for encounter after 2005 (Mady & Chettiparamb, 2016) and, more recently, in 2019, an initiative supporting livelihoods provided a temporary garage *souq* in the Mar Mikhael area (J. Zahawi, interview, November 26, 2020; see Figure 6). Other initiatives to reclaim, appropriate, or activate urban social spaces were documented across Beirut (Mazraani, 2020).

4.3. An Indication of Inhabitants' Perspectives on Beirut's Public Spaces

Further to the explanation of space production in Beirut specifically after 2005, the online questionnaire survey conducted in September 2021 indicated inhabitants' views, knowledge, and practices regarding the city's public spaces relative to their gender, age, and place of residence (Table 1). Almost 22% of respondents in the age range of 51–65 or above indicated that they lived through the civil war, while about 41% were in the age range 31–50, or were born during the war period, and the rest were born after the war ended. Respondents indicated their familiarity and practices within the former demarcation buffer comprising Martyrs Square, Damascus Road, the Pine Forest, and other spaces they frequent (Figure 1), the state of public spaces within their neighborhoods, their preferences for public space symbolism, and the activities they practice in public spaces.

About 53% of respondents aged under 31 considered Damascus Road to be unfamiliar or just another street. The remaining, mostly above 31 years of age, identified it as a famous street. This suggests these respondents' association of the street with the war-time demarcation line. Martyrs Square has been visited during demonstrations by about 44% of respondents of all ages and places of residence, while 32% go there to be in the center—their ages ranging above 31—and about 23% do not visit

Figure 5. Mobility as social space, identified through riders' practices, available conceived spaces, and lived spaces of the informal transportation system at the Cola Roundabout.

Figure 6. Temporary marketplaces reflecting social spaces in (left to right) Mar Mikhael, city center in Beirut Souks, and Makdissi Street.

Table 1. Description of the questionnaire survey.

Developing the survey	
The questionnaire was designed to collect data on: — Respondents' profiles (gender, age, and place of residence); — Respondents' familiarity and experiences in the former demarcation line's public spaces (Martyrs Square, Damascus Road, and the Pine Forest); — Their perceptions and practices regarding public spaces within Beirut and Greater Beirut; — Availability of public spaces within their neighborhoods; — Respondents' public space preferences regarding symbolism and activities performed in them.	
Administering the survey	
— The survey was sent to a WhatsApp list of 68 individuals for further dissemination and was completed by 122 respondents; — Questionnaire instructions indicated the survey's content and purpose and estimated completion time; — A consent form was included in the online questionnaire, to be selected by the respondent; — Duration: The questionnaire survey was available for one week, including a weekend.	
Respondent profiles	
Gender distribution	58.2% female, 41.8% male.
Age distribution	5.7% above 65, 17.2% between 51 and 65, 41.8% between 31 and 50, 30.3% between 21 and 30, and 4.9% between 18 and 20.
Place of residence distribution	28.7% outside Greater Beirut, 28.1% within Greater Beirut, and 43.2% in Beirut. The latter are distributed as 25.2% from the western part and 18.0% from the eastern part.

it. The first category confirms how this space became a destination following its activation through demonstrations, while the second category suggests their association with the square as an everyday public space. In addition to Martyrs Square, the city center is mainly a destination for its waterfront space at Zaitouna Bay and the Beirut Souks shopping center, while few respondents mentioned other squares and parks within the center. These respondents vary in age and place of residence, suggesting that the purposes of their visits are not necessarily related to the center's conceived but rather the perceived public spaces. About 61% of respondents, mostly aged above 31, do not visit or have not visited the Pine Forest, and about 26% coming from different suburbs and parts of Beirut visit it to be in contact with nature or practice sports. Two respondents in the age range 51–65 consider the Pine Forest far away from their activities, although there is public transportation from where they live in west Beirut, while three respondents of different age groups living in administrative Beirut are unaware of it, and five respondents think it is closed. The responses signal how the Pine Forest is not part of the spaces used by some inhabitants who lived through the war, while others are unaware of Nahnoo's campaigns.

Regarding visited and preferred spaces in and around Beirut, the sea waterfront and streets remain the main attractions, with 27% and 30% of respondents referring to them, respectively. Almost an equal number of respondents, each with 20%, refer to private spaces or malls and the city center as destinations. Other respondents refer to parks and the Pine Forest as attractions, with 17% and 13%, respectively. Only 2.5% referred squares, while 19% indicated no public spaces (these are respondents who do not walk), and around 6.6% referred spaces outside Beirut. Respondents who do not walk could indicate limited walkability and poor quality of streets as conceived spaces, and generally responses indicated the scarcity of conceived public spaces. Regarding destinations, respondents living within administrative Beirut tend to visit its spaces, including the center, and few visit spaces in Greater Beirut. Respondents within the eastern and western suburbs tend to visit Beirut in general, mainly the waterfront in the center, the Corniche in the western part, and spaces within their suburbs. This reflects what was stated in the literature on the limited mobility across areas and communities, yet this requires further validation with a more representative sample.

When replying to the availability of spaces within neighborhoods, about 48% of respondents indicated having only streets and about 24% referred to vacant lots and parking lots. Only 10% referred to parks and the remaining 20% referred to highways, unwalkable streets, squares, privately provided open spaces, or spaces outside Beirut. Among respondents who indicated streets as public spaces, half of them live in administrative Beirut, while only 24% come from Greater Beirut, and the rest from outside. This denotes the scarcity of conceived public spaces beyond the city center.

When asked about symbolism, in terms of preferred sculptures in public spaces or having them as green spaces, about 57% of respondents preferred having only green spaces, almost 40% preferred art or Lebanese figures, only 4% preferred seeing religious figures, and none

indicated political figures. This signals an aversion from lived spaces symbolizing politico-sectarian identities and the need for less programmed civic, social spaces, lending themselves to improvisation.

Regarding activities they perform in public spaces, almost 27% of respondents living in different parts of Beirut, and from different age groups—but mainly aged 21–30—use them to sit outdoors, and 25% to socialize and interact with others. Almost 19% of respondents use public spaces to practice outdoor sports, 11% to commute on foot, and the remaining indicated a combination of all these activities. This suggests people's wish for encounter, interaction, and presence within the city's social spaces.

Other comments shedding light on the state of public spaces indicated the need for safer, green spaces within the city, echoing the scarcity of conceived public spaces in Beirut. Some respondents emphasized that streets in Beirut are not walkable, requiring people to find ways to cross them, or as one respondent stated: "Generally, Beirut is not made for pedestrians. It's a pity." One respondent living outside Beirut, in the age range 31–50, stated: "We have [a] big lack of public spaces and that limits social interaction. I really believe it is done on purpose. That is why we started an intervention project in Karantina." This indicates efforts done for the production of social spaces and complements what other respondents commented regarding the need for more public spaces, or as another respondent said: "More open spaces [are] needed in Greater Beirut and not just in the city center!"

5. Conclusion

This article explored the evolution, transformations, and adaptations of Beirut's public spaces since the 1800s until the turbulences of 2019. Lefebvre's (1991) space production triad provided the framework for understanding resonances and dissonances across "conceived, lived, and perceived" spaces, and the conditions for providing spaces that enable co-existence of diverse social practices. This reading of Beirut's public spaces highlighted how inherited "social practices" tinted the imported "conceived" space models and the conditions that led to their transformation as "lived and perceived" social spaces during the Ottoman, French mandate, and Republic periods. The war caused the annihilation of public spaces and dominance of "representational" spaces, reflecting Beirut's politico-sectarian fragmentation. The securitization and commodification of urban spaces had adverse implications on "perceived" spaces for everyday life practices, leading to contestations and exclusions. In the post-war period, conditions leading to the production of social spaces were analyzed. On the one hand, divisions, control, spatial fragmentation, and inequitable attention to marginal areas deterred the production of social spaces. On the other hand, organized collaboration and consensus building enabled the understanding of differences and allowed for their co-presence by constructing common identities related to civic rights and place-based needs. This was manifested in examples of reclaiming existing spaces or co-designing new ones, and was corroborated through the questionnaire survey responses. Although further empirical work is required to validate these responses, they nevertheless highlight the importance of investigating the state of social spaces within present time Beirut. The dire need to produce alternative social spaces that facilitate interaction will remain as Beirut continues to witness unprecedented instability.

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Conflict of Interests

The author declares no conflict of interests.

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Article

Neighborhood Planning for a Divided City: The Case of Beirut

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Abstract
This article discusses planning within Municipal Beirut, Lebanon, while focusing on the specific context of divided cities and societies, proposing a series of recommendations based on socio-economic and political science and planning theory to understand such contexts. It explores the case of Municipal Beirut that has undergone a devastating blast on August 4th, 2020, and left thousands of households in critical condition by leaving an already shattered sectarian city/society with an unforeseen planning future. By examining successful examples or frameworks in other cities and similar-context cities in history with urban/social shocks, evaluating current planning initiatives, and analyzing the case study of the recent Beirut Urban Declaration report, this article investigates neighborhood planning as a flexible framework that one must undertake to provide the divided city of Beirut a healthy and sustainable development. It argues that difference and diversity are a noteworthy feature of the city of Beirut and its society and should hence be incorporated in any planning approach even if the consequences on the ground may differ. Considering that planning could change the spatial, socio-economic, and political dimensions of a defined urban space, this article explores which of these dimensions can be used to intensify or lessen contestations over space in Beirut under the current sectarian culture reflected in both social and spatial realms. In the wake of the blast and amid all these divisions, this article will show that neighborhood planning stands out as a flexible and sustainable solution. By establishing a spatially targeted program, introducing innovative tools for neighborhood planning and management, and initiating a small-scale governance structure, neighborhood planning will create an intermediate level between the municipality, citizens, and other local actors, enhancing its social capital and leading eventually to an undivided planning strategy at a national and city scale.

Keywords
Beirut; Beirut Urban Declaration; divided city; divided society; intra-urban inequalities; neighborhood planning; sustainable post-war recovery

Issue
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1. Introduction

The Beirut Port explosion on August 4th, 2020, was a watershed event in the history of Lebanon and the capital city of Beirut. Large sections of the Beirut Port and its infrastructure were destroyed, including the silos that contained most of Beirut's grain reserves. The blast also caused damage to several nearby residential neighborhoods and affected five major hospitals. Several governmental buildings were also damaged. It is a catastrophe that affected the neighborhoods of Medawar, Karantina, Al-Badawi, Mar Mikhael, Rmeil, Gemayzeh, St. Nicolas, and extended to Burj Hammoud, Ashrafieh, Bashoura, and Zuqaq El Blat (Figure 1). It reached the other neighborhoods of the city leaving behind more than 200 people dead and thousands wounded; in addition, it has damaged more than 6,000 buildings causing complete or partial destruction (Table 1), and the displacement of tens of thousands of residents of the area. This catastrophic event has mobilized the efforts of many professionals, scholars, private and public institutions, as well as NGOs. Amid a wave of local and international

organizations providing help and assistance for many, within the current turbulent and unstable socio-political landscape brought about by the 4th of August events, Beirut is impoverished by a series of overlapping poor management where sectarianism has emerged as a crucial mobilizing agent in the struggle for urban reform or preservation.

Since August 4th, and for many local and international professionals, scholars, and opportunistic developers, the impact of the Beirut Port blast offered an opportunity to appraise the relationship between many critical aspects of the city planning such as the relationship of the city to its suburbs, waterfront, and city center (Aouad & Kaloustian, 2021). The lack of local planning and cross sectorial master plans have generated clusters within the city; the city center has become one of those clusters, disconnected from its waterfront. Moreover, the contrasting situation between the strive to preserve the heritage and the complexity of its urban development have led to the increased urbanization and city growth; the infrastructure and service systems have, over the years, become increasingly deficient. The lack of public spaces impacts on urban climate, the urban divide, and inequality have only grown deeper since the blast, causing a combined and adverse impact on the quality of city life (Aouad & Kaloustian, 2021).

While this article proposes community-driven neighborhood planning as a method to guide post-war recovery in divided neighborhoods, the key question asked is not whether these methods will mitigate divisions among neighborhoods as a result of these interventions, as this is a different topic, but rather how the devastated neighborhoods should get organized to improve their quality of life within a clustered and divided city. This article first provides a short assessment of the divided city model—its undertaking, enactment, and drawbacks. It then provides examples of Beirut's past and current city policies, schemes, and approaches, and explores the evolution, objectives, and goals of its current and future urban trends. Through case studies and literature-based evidence, this article argues that the urban planning methods used prior to the blast, and possibly after, have led to the emergence of intra-urban inequalities in the affected areas and generated divisions as well as civic disinterest.

One initiative will be singled out in the next section, not because it provides a sustainable solution, but because it epitomizes a customary way of reshaping urban environments towards an undivided city through its attempt at bottom-up neighborhood planning: the Beirut Urban Declaration (BUD). Section 3 will describe and analyze the different recommendations provided by the BUD team and will critically highlight the different faux-pas

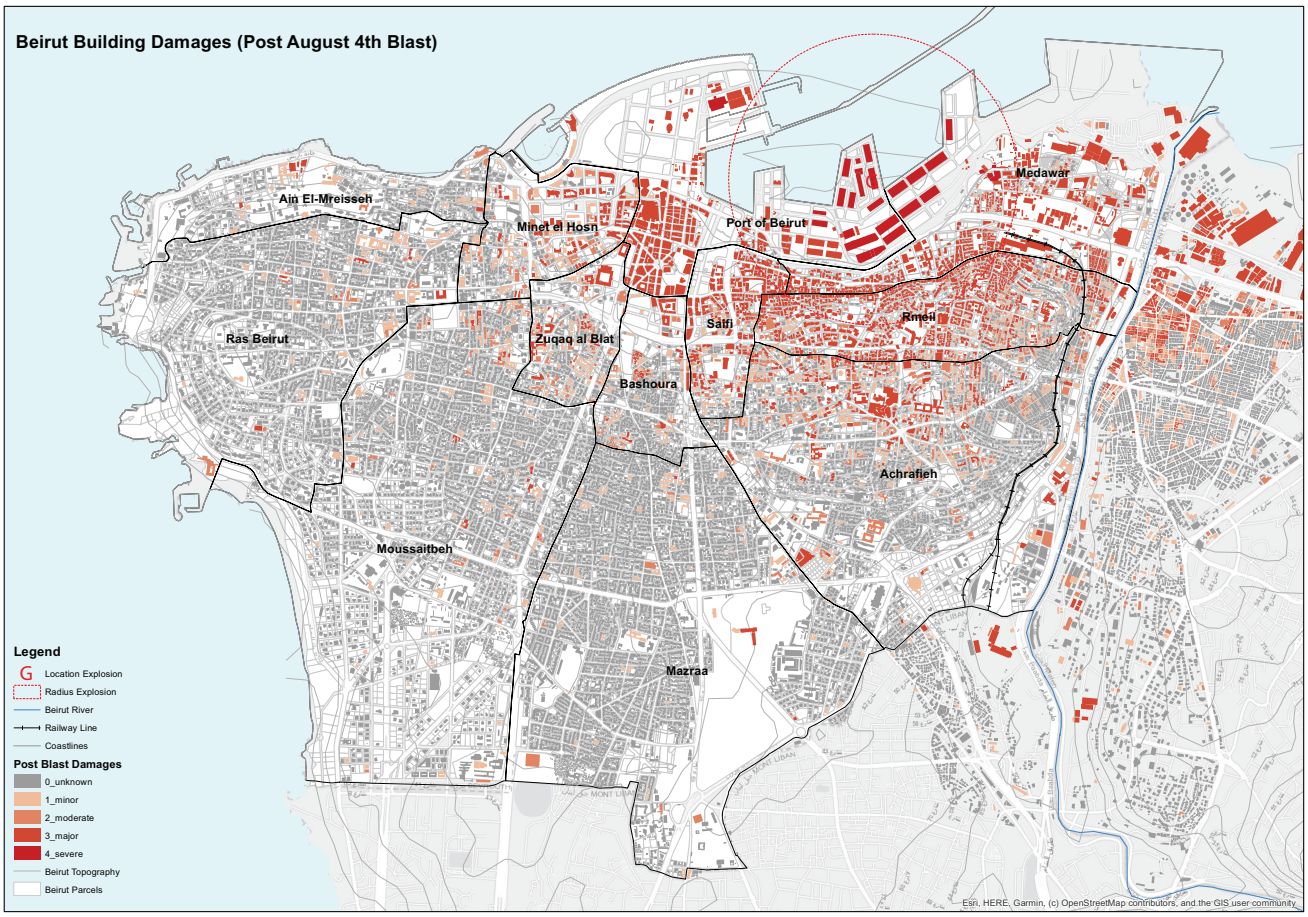

Figure 1. Post-blast building damages in Beirut. Source: Author's work based on the Order of Engineers and Architects (2020).

Table 1. Damaged buildings in Beirut from August 4th blast.

Damage Level	No.	%
Minor	2,236	33.81
Moderate	1,364	20.62
Major	2,981	45.08
Severe	31	0.47

Note: Surveyed from a total of 6,612 damaged buildings. Source: Order of Engineers and Architects (2020).

and missed opportunities. In response to the particular and failing urbanism of Beirut (political, social, spatial, anthropological, etc.). Section 4 will present a literature review on different neighborhood planning approaches within the same context of divided cities and introduce small-scale governance structure and innovative planning tools, and community-based neighborhood planning as a method to create an intermediate level between the different stakeholders (municipality, citizens, and other local actors) through enhancing its social capital and eventually leading to an undivided planning strategy at a city/national scale. Section 4 will go through the different recommendations for neighborhood planning in divided cities and overlay them with the BUD recommendations in order to draw conclusions in the final section.

2. Divided and Polarized Cities: Towards an Understanding of Intra-Urban Inequalities

In recent years, scholars, planners, developers, and policy makers alike have given particular attention to the concept of divided cities as a prolific model for understanding divisions related to social, cultural, economic, and political divisions. The divided city is a physical crisis nested within a political crisis (Calame & Charlesworth, 2009); the physical nature of the city stems from its local spatial, psychological, and economic dynamics that operate semi-autonomously and differentiates it from larger political milieus. In most cases, a divided society will eventually generate a divided urban space, hence a clear interrelation is established between a divided society and a divided city (van Kempen, 2007). It is a matter of the connection between social ramification and social inequality on the one hand and spatial segregation on the other. Inequalities can aggravate inconsistencies and abandon society's most vulnerable members. Bollens (2007) outlines the prospective role of cities in their ability to reunite divided societies, where he argues that urban planning could play a constructive role in reuniting divided cities:

> Division—whether it is physical or psychological—is an extremely difficult emotion that spawns hatred, grief, denial, depression, and forgiveness […]. Characterized by potent political, spatial, and social-psychological contestation [cities] are usefully described as "polarized." Where almost all cities are divided socioeconomically and culturally, polarized cities contain a depth of antagonism and opposition beyond what the word divided connotes. (Bollens, 2012, pp. 16-17)

2.1. Dividing Lines and Mental Frontiers

In extremely divided cities, the most notable processes behind division are political and ideological oppressions such as wars, as well as divide-and-rule and exit strategies of the colonizers (Caner & Bölen, 2016). This challenging situation is well reflected in questions of identity, national sovereignty, territory, culture, and religion. Coupled with multiple socio-economic differences cities can often be divided, and rather than providing economic chance to citizens with different milieus and skills, specific groups find themselves often isolated in specific neighborhoods facing limitations to access opportunities, amenities, and services. While the OECD report on divided cities and understanding intra-urban inequalities considers the multiple dimensions of inequality, including income levels, migration, and accessibility, it argues that there is a strong correlation between spatial inequalities and segregation in cities (OECD, 2018).

Spatial inequality in dwelling conditions or accessibility to social and physical infrastructure often materialize in urban areas of developing cities, affecting the quality-of-life of those living in these areas (Martínez, 2009). To narrow the increasing gap between better-off and worse-off neighborhoods, policy makers are trying to compensate for discrepancies and target these underprivileged areas. Moreover, the specific morphology of cities, their history, their geographical characteristics, and the extent of inequality in a society are just a few of the contingencies that determine the present and future of divided cities (van Kempen, 2007). From such contingencies emerge divisions; if not recognized, it is impossible to draw a clear roadmap for the elaboration of a sustainable planning strategy. Although the results on the ground can work out very differently for each place, it will be crucial to look at divided cities keeping in mind individual preferences, individual constraints, and opportunities.

2.2. Damaged Identities and Broken Histories: Beirut, a Divided City/Society

Beirut is a divided city: Although there was a clear boundary during the civil war (Green Line), dividing the

Christian East and the Muslim West, today, hundreds of such lines dissect the city (Bou Akar, 2018); urban fault-lines, physical markers, or invisible lines shape behaviours and merge identities with territories (Bollens, 2012). However, while these dividing lines have been officially removed, the climate of divide created by these boundaries is still heavily anchored in the mental maps of inhabitants. These mental maps, whether through psychological fractures, sectarian turbulence, racial turmoil, or political obstacles, tend to emerge more often than in the original times of civil conflict, providing profound insights into the fear, separation, violence, and alienation that run through most large metropolises (Calame & Charlesworth, 2009).

As a result of these invisible markers, Caner and Bölen (2016) outline the production of functional, structural, socio-economic, and physical consequences, all unique and non-negligible (Table 2).

Divided cities are shaped by social, political, and spatial dynamics, speeding the production of conflict and violence. In the case of Beirut, these dynamics are portrayed in four aspects: (a) the urban differentials in the settlement pattern of sectarian groups or communities and their outcome in terms of the relationship between the old and new urbanities; (b) the inter-communal social relations and the role of the urban condition in shaping social interactions between communities; (c) the influence of the urban condition on shaping the political process and politicization of communities; and (d) the outcomes of conflict and violence on re-shaping the city and its milieus (Yassin, 2008). While neighborhoods reproduce poverty, displacement, and urban violence (Bou Akar, 2018), Beirut has always seen separate enclaves co-existing within its neighborhoods (Figure 2), harnessing sectarian consciousness among its residents (Silver, 2010). The term "urbicide" (Fregonese, 2009) has been used critically to describe the role that built environment played in defining the tactical maneuvers of rival militias during the 1975–1976 civil war. Militias used several means to re-organize the urban space and territory according to the unfolding political, sectarian, and military realities. Acting as urban designers, militia leaders redesigned the city and its context, transforming commercial and civic buildings to produce a new spatial order aimed largely at reaffirming the new social and political orders under their control (Yassin, 2012). Neighborhoods were isolated by checkpoints; the city was changing its materiality due to its conflicts (Fregonese, 2009). In 1990, when the second civil war finally ended, division still lingered in the city; clashes between different religious groups resurfaced, and planning remained indifferent to this reality (Davie, 1994). However, the infamous Green Line, that once clearly divided the city in two (Yassin, 2012), has given way, throughout the years, to a more complex and intertwined division scheme. As Figure 2 shows, and based on Table 2, several clusters have been identified within the city: (a) the city center; (b) the educational hubs of the American University of Beirut and the Lebanese American University; (c) the camps (including but not limited to Mar Elias, Karm El-Zeytoun, Nour Hajin, and Basta); (d) the isolated port area; (e) Karantina and Horsh Beirut (Pine Forest); and (f) the duplicated commercial hubs of ABC Verdun and Achrafieh and the stretches of Mar Mikhael and Hamra streets. The emergence of these clusters shows how stakeholders have been approaching planning throughout the years, using strategies that selectively "whiten" certain areas at the expense of others (Avni & Yiftachel, 2014), pushing for anesthetization, privatization, and gentrification.

Table 2. Urban consequences of the divisions in Beirut.

Type	Consequences
Functional Consequences	Decline in central functions of the urban core Segregation of residential areas, ethnic enclaves Bipolarization of commercial areas Fading primacy of capital city administrative functions Duplication of urban functions (transportation, services, etc.) Change of functions in urban space
Structural Consequences	Change in urban development patterns Road-dominated environment and proliferation of cul-de-sacs Presence of frontier landscape Proliferation of vacant land Deterioration of buildings Division of everyday artefacts
Socio-Economic Consequences	Economic depression and chronic fear Population exchange, homogeneous zones Socio-economic divisions parallel with ethnic divisions

Note: The patterns highlighted are the result of the study of four cities: Berlin, Belfast, Jerusalem, and Beirut. Source: Caner and Bölen (2016).

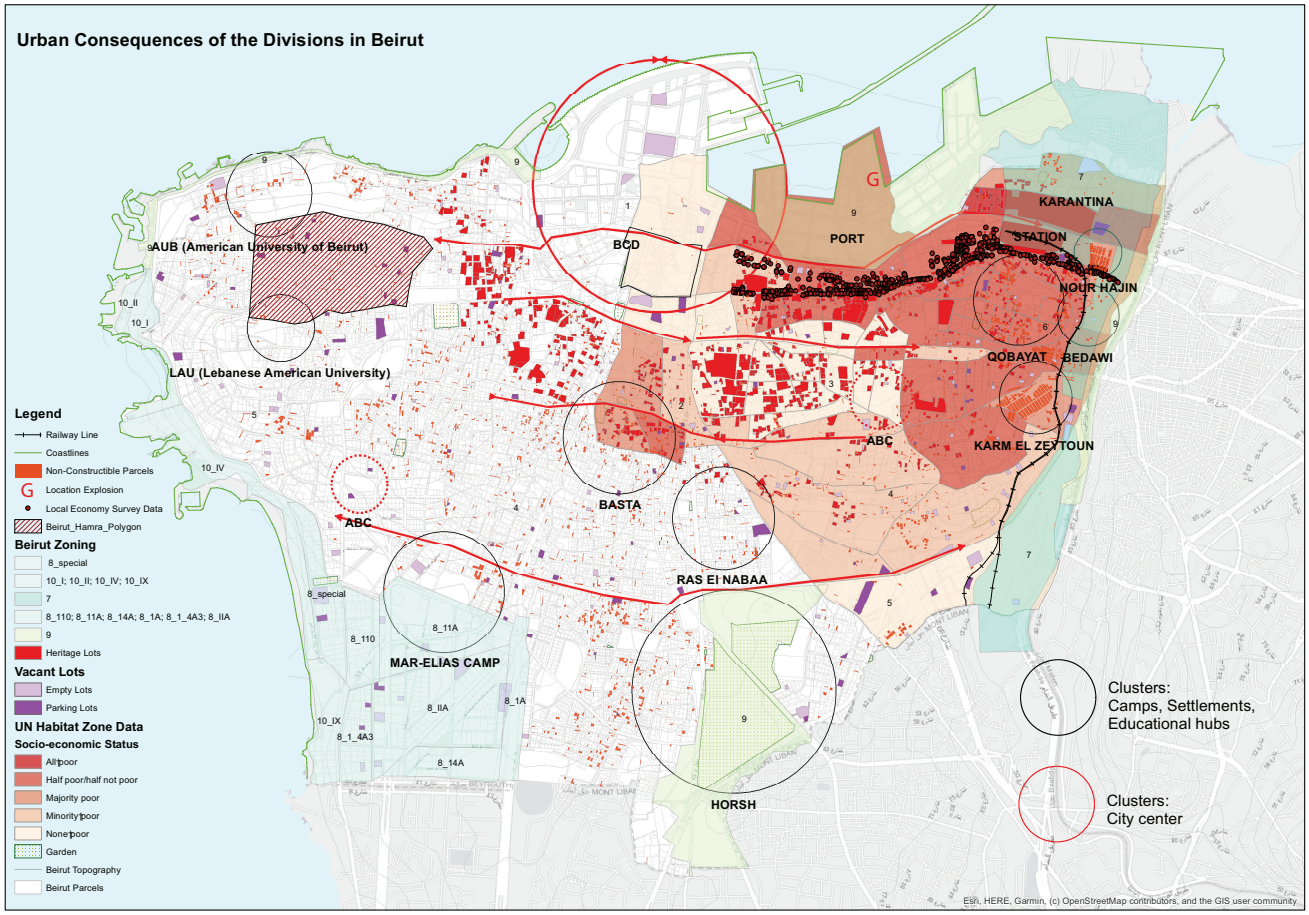

Figure 2. Urban consequences of the divisions in Beirut.

2.3. Uninformed Planning Decisions

Before, during, and after the Lebanese Civil War (1975–1990), the spatial organization of Beirut has strengthened the unfolding of diverging ideologies (Yassin, 2008). Since the civil war, many schemes and reconstruction plans have been proposed; however, the problems that faced the implementation of those schemes remain the same. They are most evident in the rehabilitation of the center (Beirut Central District [BCD]) that symbolizes and mitigates Lebanon's postwar shortcomings: inequality, corruption, and segregation (Larkin, 2010a). With unclear state constitution and outsourced public undertaking, urban planning has become a dispute between religious-political organizations and profit-seeking developers (Bou Akar, 2018).

According to Verdeil (2012), there are four periods of reconstruction of Beirut and its suburbs: (1) the first downtown reconstruction project in 1977 following the two-year war; (2) the second downtown Beirut reconstruction attempt in 1982–1983, which was never adopted; (3) the reconstruction of the BCD which was entrusted to Solidere since 1991; and (4) the case of the post-war reconstruction of Haret Hreik (Waad Project), in 2006. Moreover, the post-war reconstruction phase has been marked by two national plans: the National Emergency Reconstruction Plan, orchestrated for the first five years of reconstruction, and Plan Horizon 2000, complemented later by Plan Horizon in 2005. The two plans were managed by the Council for Development and Reconstruction, established in 1977 as a public central management organism for all reconstruction works. More than 100 projects were planned over 15 sectors, essentially financed by foreign and internal loans (United Nations Human Settlements Programme, 2003).

The above-mentioned schemes were never about a complete and sustainable planning solution for the totality of the Lebanese territory; instead, they favored selective urbanism and divisions, building on quick solutions from a developer's perspective. I would extend this argument to say that the reconstruction schemes were almost treating the territory as an informal space, secluded and isolated from all contingencies. Avni and Yiftachel (2014), in their chapter on "gray spaces" in divided cities, suggest that there are several typical stages of urban policy responses to the emergence of informality within the process of "gray spacing" in the sense of informal development where ignoring, neglecting, limiting, and whitening selectively can be described as the toolkit of managing the unwanted/irremovable

in today's urban regions and economies. By ignoring the needs of citizens, neglecting the real urban issues, limiting interventions, and whitening selectively certain areas such as Solidere, the state has prolonged turning a blind eye to what is really needed, proposed underdeveloped schemes and policies, violently limited the areas of intervention, and pushed for anesthetization, privatization, and gentrification. When the numerous systems that are essential for the city functioning fail and stop being efficient, they result in the emergence of negative economic, social, and environmental impact. In addition to the deficit in government provision of services because of weak management practices urban informal systems emerge, complementing or competing with formal services in order to meet the everyday needs of urban residents (Farajalla et al., 2017). As an example, the development of the BCD promised a social recovery through economic renewal (Fricke, 2005); instead, it was conceived in a complete isolation, enclosing the city center by a limited ring road and a connector to the highway leading to the airport. By creating a vacuum within the city, a space devoid of social matter, it managed to disconnect the city from its center and displaced families, owners, and tenants (Larkin, 2010a; Yahya, 2004). More critically, the sectarianized and enclaved city continued to be spatially divided across the war-induced sectarian lines, indicating a failure to return to normalcy (Yassin, 2012). War-damaged cities also force citizens to explore urban antagonism and tolerance and to see how designers, planners, and policymakers can contribute practically to the alleviation of racial and social segregation (Calame & Charlesworth, 2009).

On the other hand, many of the proposed projects by professionals invited to participate in the post-war reconstruction process seemed unrealistic (Charlesworth, 2007). They tend to propose quick interventions that are of interest to international donors, investors, and developers, which in some cases hastened the fundamental reasons of conflict due to either their lack of expertise working in split political and physical landscapes or the lack of interest in finding real solutions for serious urban issues. Functionalist planning and zoning as a way to deal with sectarianism (Bollens, 2012) and the obsession for building iconic landmarks is put upfront by local and foreign architects who assumed that the systematic rebuilding of the historic core of the devasted city will restore the city, almost immediately, to its prewar identity and community spirit. Such positions frequently overlooked the fact that the surrounding urban fabric, infrastructure, and social fabric are all in shambles. Most of the time, leftover areas, transition zones, and boundaries of conflict, or the often abandoned and neglected peripheries of the central zones of cities were ignored (Charlesworth, 2007). Despite some attempts to redirect Beirut towards a wider Lebanese state building project and ever-changing geopolitics of the region (Larkin, 2010b), it was clear that some pillar planning terminologies such as connectivity, mobility, middle class, sustainability, heritage preservation, social inclusion, public space, environment, and demography were fated to become obsolete.

In post-conflict cities, political opportunities may arise fueled by the attractiveness of the concept of city reconstruction. Stemming from the various dynamics behind the reconsolidation of a national identity and economic recovery, ambitious political endeavors, and long-term agenda could be deceiving (Charlesworth, 2007). Since the port blast in August 2020, some real awareness started to emerge regarding the state of the city, its failed urban heritage, and its vague future.

3. Beirut Urban Declaration: A Case Study

The BUD initiative was launched on August 10th, 2020, with the participation of the Order of Engineers and Architects in Beirut, the schools of architecture in Lebanon, the Chadirji Foundation for Architecture and Society, the Architects Association, and the Urban Planning Association. This initiative was a response to the devastating explosion of the Beirut Port on August 4th, 2020 (Order of Engineers and Architects, 2021). It reviews a set of ideas that would constitute a starting point for work to formulate an integrated vision for the reconstruction of the affected areas. It proposes a national vision for reconstruction, heritage rehabilitation, protection of the social fabric, distinguished urban identity in affected areas, and the reformulation of the port relationship within its urban context. The declaration is an intellectual and cultural endeavor that contributes to the formulation of a comprehensive vision in form of ideas and proposals of the reformation of the city. The compiled report aims at addressing the challenges of depopulating the city from its residents and demography change by offering officials and institutions proposals and quick practical and operational options. By proposing a comprehensive view of socioeconomic and urban aspects dealing with the damaged area as an urban fabric fully integrated with its surroundings, the declaration highlights the course of action and the role that the OEA could play in visualizing the rehabilitation of the impacted region in collaboration with universities.

The BUD emphasizes preserving the heritage urban fabric, which consists of their general fabric and the constituent units of this tissue, as a site in which individuals' socio-economic behavior is practiced. Considering the heritage character of the affected area, it will be crucial to determine the paths between urgent, medium-, and long-term to eventually establish an observatory. Finally, the need to initiate appropriate policies and a reconstruction management must go through devising mechanisms that can guarantee wide participation of the society and specialists. Research focusing on the study of the urban typo-morphology of the area and connectivity of the Medawar/Karantina–Rmeil (Aouad & Kaloustian, 2021) presented during the BUD conference back in April 2021 (see Figure 3), recognizes the following:

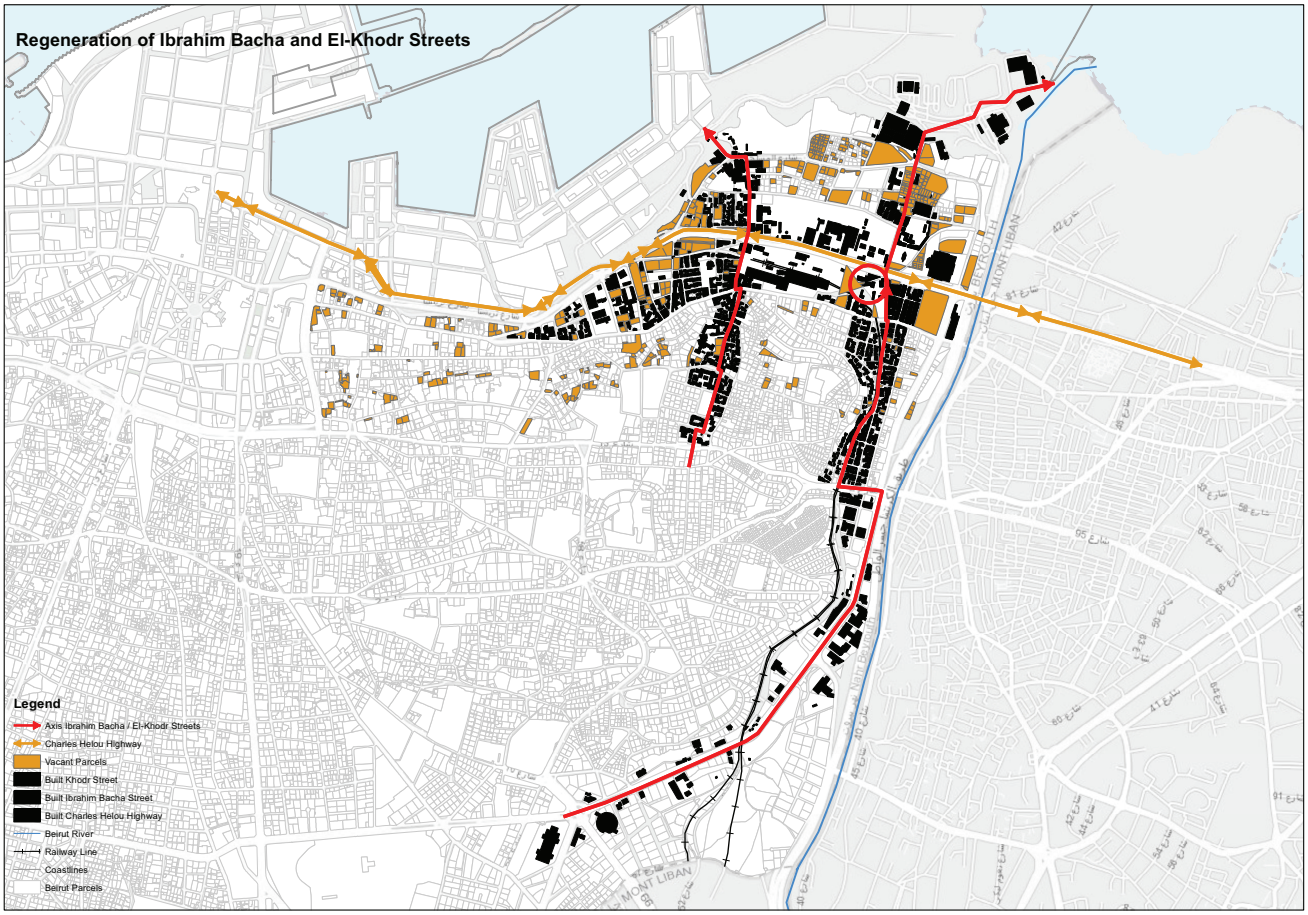

Figure 3. BUD: Axe 3. The regeneration of Ibrahim Bacha and El-Khodr Streets is represented in red. Source: Author's work based on the Order of Engineers and Architects (2021).

> Sustainable urban planning can be partly achieved through small scale interventions such as the reactivation of vacant lots and non-constructible parcels through connected paths and the re-use of heritage buildings….Reactivating public life, through the elaboration of neighborhood scale urban strategies and engaging residents in improving their built environment, should be a priority. (Aouad & Kaloustian, 2021, p. 9)

Although the roadmap of the declaration was paved with good intentions, it could be argued that the methods used still fundamentally stem from the traditional planning school. Having played a major role in the development of Axe 3 (Figure 4) that led to the final formulation of the BUD, one must admit that the BUD was far from serious field-work surveys and accurate social assessment of the devastated areas and their inhabitants. This part was at times compensated by work from NGOs but never really compiled and overlayered to the academic work the BUD was preparing. Collaboration at early stage with field groups/NGOs was required and could have been crucial in the elaboration of a more in depth understanding of the needs of neighborhoods. One of the downsides of the report is that it does not effectively acknowledge the new reality of divisions highlighted above (Figure 2). Although it was clear from the beginning that no masterplan for the city of Beirut would be developed to avoid falling in the trap of traditional planning, it was quickly obvious that the lack of field data and close encounters with inhabitants would lead to a generic solution far from the imposed realities of the urban situation.

Local stakeholders are uncritically adopting such initiatives, exploring their ambitions, measures, as well as the impediment of their strategies. Any sustainable city strategy that disregards those differences and diversities have and will introduce an urban entrepreneurship that reinforces exclusion and welcomes gentrification rather than disintegrating social and ethnical boundaries.

4. Scaling Down

While the BUD in most of its approach still clings to the idea of the city as a unified physical model, a top-down approach in disguise undermining the differences that subsist between individuals, it is time to shift the focus from this broader understanding of the city to an approach centered around navigating social, infrastructural, economic, and environmental complexity (Myerson, 2016): This is called scaling down. It could

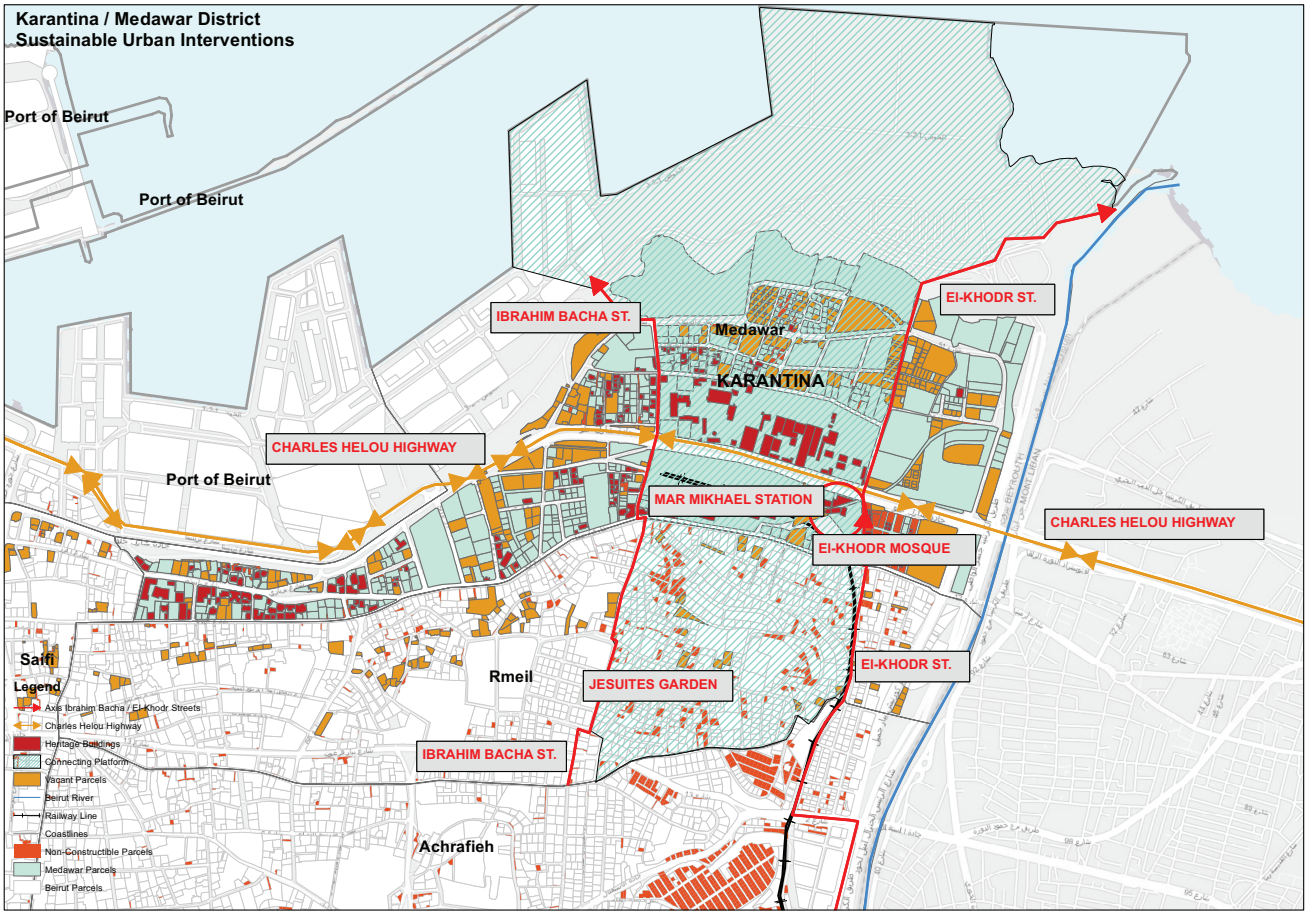

Figure 4. BUD. Study of the urban typo-morphology of the area and its connectivity to neighboring parts: Case study of the areas of Medawar/Karantina–Rmeil in Municipal Beirut. Source: Author's work based on and map from Aouad and Kaloustian (2021, p. 10).

be argued that it is still too soon to completely ditch traditional planning tools at the expense of more creative and innovative ones; however, imposing fixed master plans in post-conflict situations could prove too rigid and superficial of an approach and need to be re-assessed. While the BUD has set itself a goal from the beginning that a master plan would not be the main objective, all actions and recommendations still rely heavily on traditional planning tools moving away from sustainability, long-term economic viability, and improved social cohesion. With the recent rise of people-centered approaches focusing on specific human needs and experiences, the BUD privileged the urban level dismissing that there is a fragmentation and breakdown of the urban system where the center no longer holds. In seeking post-conflict reconciliation and building horizontal linkages that support citizenship, micro-scale, street level interventions with an incremental approach may be a more appropriate frame of reference and could present better opportunities for mixing rather than being districts of fear and sectarian retrenchment (Bollens, 2012). For the residents of Beirut, this kind of urban planning could hold promise where a new spatial order could bring a peaceful future (Bou Akar, 2018).

4.1. The Neighborhood

A neighbourhood is a collection of individuals who share services and some level of cohesion in a geographically bounded place. Among three keywords defining neighbourhoods—people, place, and cohesion—place is the most noticeable term to distinguish neighbourhoods from other terms like community (Park & Rogers, 2015). Waves of migration and displacement from and towards Beirut have played a crucial role in the city's shifting demographics, sense of diversity, and urban transformation (Faour, 1991). Pre-civil war migration from rural areas, the Lebanese civil war, the Armenian refugees' camps, the recent Syrian crisis, the current post-war/blast era, and a continuous change in land-use, character, and identity have shuffled the demographic and reshaped the city by building clusters within and around it and favoring sectarian peripheral centralities and isolating neighborhoods. A planning workshop organized in 2007 by the American University of Beirut, focusing on the Mar Mikhael neighborhood (Ghaddar, 2020), has shown that many of these events carry direct effects on the current status of neighborhoods in Beirut: Evictions, displacements,

abandonments, re-appropriation of public space, demographic changes and degradation of residual spaces, changes in economic activity, and deterioration of old businesses have impacted decisions regarding the built environment, provision of economic opportunities, and delivery of public services.

In divided cities such as Beirut, it is essential that the social and economic dynamics behind segregation of neighborhoods be understood (Grigsby et al., 1987), since they have a direct effect on processing conversions in quarters and neighborhood characteristics and spatial patterns (Megbolugbe et al., 1996). Grigsby's realism in understanding what policies can really do as opposed to what individuals wish they could do is reflected in his affirmation to characterize neighborhood change in terms of occupants rather than the physical condition of the stock (Megbolugbe et al., 1996). In one of the axes developed by the BUD, the neighborhoods along the two streets of El-Khodr and Ibrahim Bacha (Figure 4) were defined not because they belong to the same districts, but rather because they are organized along two historical commercial strips that have been in decay for the past few years. El-Khodr Street still has traces of the old railway tracks and denotates a strong socio-economic cohesion along its edges through the commercial shops and income level of its inhabitants. By highlighting this strip, analyzing the typo-morphology of its built fabric, and classifying the urban elements that are integrate parts of the city, this approach recognizes the existing urban forms supplemented by existing or desired functions in the neighborhood (Order of Engineers and Architects, 2021). However, a participatory mindset is painfully missing from this approach, making those design methods seem almost obsolete. Collaborative methods and a deeper investigation of the real needs of the population, highlighting the challenging and complex problems that people are facing on daily basis, could lead to a rather design-infused approach (Myerson, 2016).

4.2. Community-Driven Neighborhood Planning in the Divided City of Beirut

Neighbourhood-based planning is more reactive to local influences since problems are small enough to effectively engage the residents and local stakeholders (Park & Rogers, 2015). One of the main impediments to the enactment of an alternative vision for the neighborhood is the absence of effective planning tools in Lebanon's planning regulations. Beirut neighborhoods play many different roles in the city and attract divergent and disparate communities. Prone to speculative developments and a sense of exclusiveness, Beirut's urbanization is highly random and developer-oriented, lacking an institutional framework that would be adequate to develop a neighborhood planning approach based on community participation, carrying capacity, safety, and environmental quality. A strategic intervention at the scale of the neighborhood should be led by authorized local community organizations, known as qualifying bodies (neighborhood planning bodies), and requires the initiation of a bottom-up, inclusive, and people-centered recovery process. Through the transformation of structures of social life from top-down to bottom-up, the institutionalization of the existing structures might facilitate accommodative and transformative behavior, coexisting with uncivil practices and institutions (Mady & Chettiparamb, 2016).

Five recommendations are proposed so that community-driven neighborhood planning leads to transformative change acknowledging the divided nature of the society. It is worth noting that the article is not focused on "how" these recommendations are unraveled but more on "what" they consist of in terms of methods. Through inclusive neighborhood planning, broadening the opportunities for individuals across neighborhoods, using performance-based planning, linking the most disadvantaged neighborhoods, and promoting and protecting the collective public sphere, a shift to reverse could be achieved, leading to a better understanding of the social fabric, hence creating *with* the people rather than *for* them (Myerson, 2016).

First, through land-use regulations that facilitate the building of new housing, engaging in equity planning that addresses underlying root issues, neighborhoods could become more inclusive, livable, equal, and affordable. The BUD (Order of Engineers and Architects, 2021) acknowledges that this point constitutes an important factor in developing a dynamic overview that addresses the history of all existing buildings since it represents the culture of Lebanese society; in addition to the formulation of building regulation to reflect the history of the society and its relationship to the public and private scales of the city, both have failed to acknowledge that prior to the blast the city council had always been very politicized and represented almost all the political parties of the city and thus very few decisions were taken in the right direction and without consensus. Moreover, and for the past several decades, no revision of the city's urban master plan has been proposed despite the present sanitary and cultural emergencies the city is facing. In light of these setbacks, in a city that has scaled down its governance to smaller divisions, a proposal has been currently inapplicable and already rejected by several politicians to avoid any sectarian divisions (Mady & Chettiparamb, 2016). One would argue that relying on the existing political structure to implement such revisions could be almost impossible, hence the shift to a smaller scale intervention, bottom-up community approach that would delegate powers, even temporarily, to neighborhoods within municipalities by betting on civil society engagement to voice concerns and protect from the constant government vetoes. By de-institutionalizing the process and disengaging from formal structures, transformative action could be unleashed.

Second, in broadening opportunities for individuals across neighborhoods lacking access to high-quality

education and training, along with empowering marginalized groups, community-driven neighborhood planning implies the recognition that anyone can make a difference in their life as well as that of others. In Beirut, the government does not and cannot allocate sufficient resources to efficiently support programs aiming at poverty reduction. In this context, civil society organizations, including a wide range of organizations, may take over this responsibility and promote and support self-help institutions, volunteer organizations, and groups of interest to fight poverty. However, civil society cannot operate in a vacuum or in isolation; as a result, there must be a network and a connection with both government institutions, the private sector, and international organizations. The BUD mentions in its report that the socio-economic challenges stemming from the urban transformations of the city are mainly based on the local community transformations, which will eventually organize the needed services of the local community in order to formulate a clear methodology that helps structure the social needs. The BUD report (Order of Engineers and Architects, 2021) includes a sociological study that has covered several individuals from different groups and sectors in the region, enquiring about people's needs, their view of planned or observed projects, their diagnosis of the most pressing issues, and their future speculations. However, as mentioned previously, the study has failed to acknowledge the current divisions that these neighborhoods are going through resulting in identity-based breaches; it rather enhances those breaches by focusing on the current state of these neighborhoods. The proposed recommendations such as considering social culture as a priority, establishing business incubators, and securing education and health have barely touched base with groups or NGOs working on the ground. Rather than building a common database that would become a foundation for future studies, it has resulted in fractions of data disseminated amongst groups making it very difficult for all involved parties to assess the reality of the situation on the ground.

Third, by using performance-based planning parameters such as performance zoning, neighborhood sustainability assessment tools (Sharifi & Murayama, 2014), flexible zoning, outcome-oriented planning, and effect-based planning (Baker et al., 2006), the emphasis is put on short-term tactical interventions. A recent report by Chetwyn (2018) defines three stages for the development of neighborhood plan roadmap using performance-based planning that will elaborate a planning policy for a neighborhood area to guide future development: first, designating the neighborhood area and the neighborhood forum while building an evidence base and engaging publicly; second, drafting the plan while meeting the basic conditions (national policy, sustainable development, conformity with strategic policies, and other obligations) and preparing pre-submission consultations; and third, bringing the plan into force by submitting it to local planning authorities, publicizing it, examining it independently, and assessing it for lessons learned. Creating a neighborhood plan is about making efficient use of land and may include a vision, goals, planning policies, and suggestions for improving the area by adding new facilities or designating key sites for specific types of development. It should acknowledge social, economic, and environmental issues such as housing, employment, design, heritage, and transport or it may focus on just one or two issues (Chetwyn, 2018).

Fourth, in striving to enhance people's physical and psychological assets and building on what individuals and communities have to offer, it will be significant to negotiate linking the most disadvantaged neighborhoods with places of opportunity through better transport connections between the locations of jobs and residential locations using flexible and porous urban forms. The researcher's contribution within the BUD dealt with the pillar of architectural urban transformations and socio-economic changes based on which service data could be used by the local community and which must be studied to form a clear methodology for developing the city's structure. This condition is reflected in this study through the reconnection of Mar Mikhael area with Karantina through the reactivation of two main roads that historically represent this relationship with the areas before the Charles El Helou highway, namely Ibrahim Bacha Street and Al Khodor Street (Figure 4). However, in that case, the concept of mobility should have been introduced, by working with experts in that discipline and co-designing and prototyping new means of transportation. In an effort to bring awareness to bottom-up planning within the neighborhood of Badawi, at the Eastern edge of Beirut city, one venture is aiming to do so: Through the collaboration of KU Leuven, the Lebanese Academy of Fine Arts, and the Institute of Environmental Studies and Research at the Lebanese American University, an e-bike and low-tech energy device do-it-yourself workshop will be launched. The workshop, launched on the 11th of November 2021, has kickstarted a larger and longer project in Lebanon aimed at creating a sustainable citizen-based network or infrastructure. Apart from the practical work, there were talks, lectures, guest teachers, and discussions on how a participative society works and what are the obstacles and challenges for enabling micro-scale governance structures tackling the question of whether a bottom-up urbanism is possible in Beirut.

Fifth, for the seed of urban stability and co-existence to grow, the public sphere in both physical and institutional forms should encompass and respond to all competing identity groups in the city by promoting and protecting the collective public sphere. Physically, planners should revitalize and redevelop public spaces, historic areas, and other urban public assets as places of interaction and neutrality that promote healthy intergroup and interpersonal life. Instead of focusing on the inflammatory choice between segregation versus integration of residential areas, concentration on improving

public spaces may offer another approach less difficult to achieve for political reasons. As a result, there is a push for mixed public spaces rather than mixed neighborhoods. The goal is to enable increased cross-ethnic mingling in non-hostile, non-polarizing public environments rather than trying to adopt the more inflammatory approach of having different ethnicities cohabitat residentially (Bollens, 2012). However, this can be better achieved by allowing for better communication and negotiation based on a common understanding of shared values through a consensus-oriented process (Mady & Chettiparamb, 2016) that could eventually mitigate certain small divisions within a specific neighborhood leading to a rich and diverse set of micro-practices in the hope of achieving a better quality of life.

5. Conclusion

This article has explored neighborhood planning in deeply divided cities/societies in Beirut. It has been suggested that while clear dividing lines have been officially removed after the civil war, it is now a reality that the climate of divide created by these boundaries is still heavily anchored in the mental maps of inhabitants. Whether through psychological fractures, sectarian and racial turbulence, or political obstacles, profound insights into the fear, separation, violence, and alienation run within the city of Beirut. Under the circumstances, and more specifically following the August 4th tragic blast, it has been argued that some unique and non-negligible functional, structural, socio-economic, and physical consequences have emerged and that it would be more useful to shift planning from the traditional schemes and reconstruction plans that have been proposed so far, since the civil war, to a more neighborhood-centered sustainable approach. Since the blast, there has been considerable interest in bottom-up initiatives with planning centered more towards civil society-led initiatives. While the question of how planners might work with such initiatives is important, it has been argued that the question of how devastated neighborhoods should get organized, almost autonomously, to rebuild what was lost and enhance their quality of life is equally important and must be reasonably answered. Building upon the divided cities and neighborhood planning literature and critically dissecting the action plan of the BUD as a potentially innovative approach to city planning, five recommendations have been suggested that may need to be present individually or in combination in bottom-up initiatives attempting to bridge deep differences. These recommendations involve inclusive neighborhood planning, broadening the opportunities for individuals across neighborhoods, using performance-based planning, linking the most disadvantaged neighborhoods, and promoting and protecting the collective public sphere. It has been argued that through the implementation of these tools, a shift to reverse could be achieved, leading to a better understanding of the social fabric, hence creating *with* the people rather than *for* the people. The presence of these five tools has been demonstrated in the case study of the BUD showing how some of the aspects of the report have responded effectively to the bottom-up approach for neighborhood planning by using strategies that encompass the five ways identified earlier. However, it has also identified its weaknesses as far as its lack of collaboration with civil society and NGOs, the political agenda setbacks related to previous master plans, the concepts of mobility, and the deep understanding of the social and physical divide that exist within its realm. While these initiatives are not, by themselves, the solution to the conflicting divisions within the city and society, they can certainly contribute to an agenda that seeks to cut-across narrow sectarianism to confront, exchange, and acknowledge a wider program. At the very least, they provide conceptual and experiential resources useful in developing a flexible framework for the sustainable development of the devastated neighborhoods allowing field professionals such as architects, planners, urban designers, and landscape architects to engage in the processes of social, economic, and physical reconstruction shifting their focus from the city scale traditional planning tools to local planning tools at a neighborhood scale. Hence, this article has called for a revamping and undertaking of the sustainable city model in which intra-urban inequalities, divisions, and civic disinterest are the focal point rather than the understanding of the specificities of each neighborhood and its users, including the enactment of social differences, not only as an urban development strategy, but also as a human right.

Conflict of Interests

The author declares no conflict of interests.

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Article

Urban Transformations and Complex Values: Insights From Beirut

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Abstract
Through an urban renewal process driven by a well-resourced Lebanese diaspora and foreign investment, Beirut has undergone conspicuous morphological densification, characterised by parcel aggregation and exploitation of building height. Planning agencies have contributed to these transformations, deliberately involved in the production of illegality, and contributing to unplanned urban development. Although recent literature has substantially furthered our understanding of deregulated planning in Beirut, little is known of the preferences of residents with regards to the urban development process. This article sheds light on how morphological densification affects the complex values attached by residents to their urban environments using a novel data set and mixed-methods approach. It explores how dramatic urban restructuring affects resident values of architectural amenities and neighbourhood belonging. Findings show that although living in areas with different rates of building change does not affect preferences for architectural amenities, it affects resident socio-political activism towards the preservation of their built environment. Residents living in areas with high building-change rates had almost 50% lower odds of being willing to stop new construction near their location of residence because of their lack of confidence in the planning system. Neighbourhood belonging is not significantly affected by construction rates, but substantially increases both with the number of years lived in a neighbourhood and in locations with better building conditions, confirming a role for the built environment.

Keywords
Beirut; deregulated planning; Lebanon; neighbourhood belonging; urban form; willingness to pay

Issue
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1. Introduction

Rapid urban development is a major feature of many less-developed countries. Although we generally think of rapid urbanization taking the form of "informal" or "illegal" settlements in low- and middle-income countries that develop as urban slums (Roy, 2005), motives for urban illegality frequently go beyond the production of housing for low-income urban residents. The state and planning agencies have been deliberately involved in the production of illegality in various Global South contexts (Fawaz, 2017), contributing to deregulated and unplanned urban development which often leads to blatant transformations of urban form.

Beirut is iconic of this phenomenon. Beirut has become a permanent (re)construction site through the urban renewal process driven by a well-resourced Lebanese diaspora and foreign investment since the early 2000s. Urban planning is characterised by neoliberal tendencies and a public–private overlap which has led real-estate profit discourses to hijack notions of urban amenities (Ashkar, 2018; Krijnen, 2018, p. 3). This has been paired with demolition-based urban restructuring for maximum profit. Fawaz (2017, p. 94) highlights the prevalence of the practice of issuing "exceptions" or temporary suspensions of the law in the daily practices of public planning agencies as they manage the production of Beirut's built environment.

Over the past few decades, many neighbourhoods in Beirut have thus undergone striking alterations, resulting in dramatic changes to the city's landscape, housing stock, and people–space relations (Gebara et al., 2016). The deregulated planning framework has in many cases led to the deterioration of urban environments and to social-cultural instabilities. Although much research has furthered our understanding of deregulated planning in Beirut (Bou Akar, 2018, p. 96; Fawaz, 2017; Krijnen & Fawaz, 2010, p. 120), little is known of the preferences and responses of local residents in relation to the urban development process.

This article is based on Chapter 4 of my PhD dissertation (Pietrostefani, 2019a). It contributes to ongoing research into strategies to protect and enhance Beirut's social and architectural diversity by exposing, as far as that is possible, residents' complex and multiple values in this regard. Specifically, this article investigates the relationship between construction rates, as indicators of rapid urban transformation, and resident value of architectural amenities and neighbourhood belonging (NB). The study first explores satisfaction with these amenities and examines whether they vary across socioeconomic characteristics. The article then uses stated preference to assess indicative values, and asks: In a context of continual construction with no public consultation, are residents still willing to pay to preserve architectural amenities? And given the climate of "exceptions" present in urban planning in Beirut, does lack of confidence in government affect resident willingness to stop unwarranted construction?

This study uses a novel data set and two case-study neighbourhoods as entry points to examine the relationship between building change (BC) and resident value of architectural amenities and NB. It focuses on the period before the start of the Lebanese financial crisis in 2019 and the 4th of August 2020 Beirut's blast, illustrating residents' responses to urban transformations just before the country's multiple crises. Ras Beirut and Mar Mikhael were selected as case studies as the former has undergone substantial change in urban form over the last few decades, while the latter had only recently seen changes to its urban fabric at the time of the study. These neighbourhoods were also chosen because both areas present multiple cases of urban illegality linked to the production of housing for profit (Fawaz et al., 2018; Khechen, 2018).

The study uses a mixed-methods strategy of qualitative and quantitative approaches to obtain a comprehensive appreciation of the complex relationship between changing urban form and the values residents attach to their urban environments (Greene, 2007). Three modes of analysis were used: survey-based stated preference techniques, descriptive statistics, and textual analysis of discursive survey elements. Survey-based stated preference techniques ask individuals to choose between response options or place a monetary value on a good presented in a hypothetical scenario (for comprehensive reviews, see Alberini & Kahn, 2006; Bateman et al., 2002). While descriptive statistics and contingent valuation (CV) are used to identify underlining patterns of resident preferences according to the BC rates of their location of residence. Open-ended survey responses and interviews allow for a better understanding of the reasons behind resident preferences.

CV has been widely used to elicit citizens' preferences and their willingness to preserve architectural amenities (Alberini et al., 2003; Provins et al., 2008), including in less-developed countries where the quality of the urban environment has been increasingly recognised as a determinant of quality of life (Whittington, 2010). A common aspect of CV studies in these contexts, however, is the occurrence of protest responses, which are defined as cases where respondents reject some aspect of the contingent market rather than reveal their true preferences, jeopardizing the validity of the willingness to pay (WTP) estimates (Calia & Strazzera, 2001; Szabó, 2011). One possible reason for protest responses is respondents' distrust of authorities, or in this case, of planning agencies responsible for changes in the urban environment (Oh & Hong, 2012). Given the caveats of this methodology, this article adopts WTP as a proxy for residents' intent to stop excessive building practices. Despite its limitations, I consider it a valuable exercise to identify the burden of responsibility individuals in Lebanon may be prepared to incur given the lack of good urban governance (Harb, 2000). Moreover, this article accounts for the limitations of the Lebanese context by analysing motives for lack of WTP through textual analysis and accounts for mistrust in governance through the inclusion of a confidence in government indicator in the WTP regressions.

The article proceeds as follows. Section 2 discusses neoliberal planning in the Lebanese context and explores how changes in urban form can affect values attached to architectural amenities and NB. Section 3 introduces the data and discusses the mixed-methods approach. Section 4 presents findings on overall perceptions of BC, while Section 5 presents the different relationships between BC and the value residents attach to architectural amenities and NB. In Section 6 I discuss the WTP results, revealing a stable negative relationship between WTP to stop new buildings and the rate of BC. Section 7 sets out the conclusions.

2. A Permanent Construction Site

2.1. Is Planning a Political Decision or a Technical Activity?

Neoliberal tendencies in Beirut facilitate the circulation of capital to the real-estate sector and foster intensive construction practices (Fawaz, 2017; Krijnen, 2018). Article 16 of the Lebanese Construction Law and its 2004 revision enlarged permissible building and resulted in land developers benefiting from exemptions to the total coefficient of exploitation (Ashkar, 2011). This instigated

further height exploitation, best viewed in terms of financial profit, as higher floors generate more income than lower ones, with the price of apartments in Beirut typically increasing by at least US$100 per square metre per floor (Ashkar, 2011). Such projects have transformed both the skyline and the social make-up of Beirut, catering to wealthy Lebanese expatriates and other nationals, rather than the city's long-term dwellers.

Moreover, the prevalence of bad governance processes (Harb, 2000), unplanned neighbourhoods (Bou Akar, 2018, p. 6), and the issuance of temporary suspensions of the law to bolster profitable development even further are common practice. These are examples of the rise of state-led informal planning practices happening in many Global South cities (Roy, 2005). Fawaz (2017) argues that "exceptions" constitute one of Beirut's principal planning strategies, originating in clear continuities between the realms of the legal and the illegal, given the entanglement of the political elite and the real-estate industry. In this context, society does not "collectively decid[e] what urban change should look like," as argued by Rydin (2013, p. 12), but quite the opposite. The climate of "exceptions" reveals a struggle over the right to the city.

It is not surprising that these dynamics have led to significant morphological densification in the city, captured by increasing compact urban land cover, street connectivity, and a high building footprint to parcel size ratio (Neuman, 2005). This can also be referred to as the densification of built form: a measure of the intensity of development in relation to available ground-level open space. Beirut's case is characterised by parcel aggregation and exploitation of building height (Khechen, 2018).

Morphological densification has been paralleled by changes in population demographics and socioeconomic backgrounds as a result of internal displacement trends, and the influx of displaced individuals and families following the Syrian crisis. Many displaced people reside in expensive middle-income neighbourhoods because of close access to services and jobs, inserting themselves as best they can, often in informal or un-serviced housing units within these areas, such as this article's case studies, i.e., Ras Beirut and Mar Mikhael (Pietrostefani, 2019b). Although this article will not be focusing on the effects of population change on local neighbourhoods, it will be accounting for it in its analysis, given its impact on this context.

2.2. Resident Value

In considering whether morphological change affects how residents value their urban environments, this article focuses on the value residents attach to architectural amenities and feelings of NB. With this double focus, I address both physical and immaterial amenities, as morphological change may influence both objective (visual, aesthetic) and subjective (social, symbolic) dimensions of neighbourhood satisfaction (Young et al., 2004).

Buildings of architectural value have been recognised as land-based public goods in both urban planning, urban economics, and environmental psychology (Ahlfeldt & Holman, 2018; Brander & Koetse, 2011; Stamps & Nasar, 1997). Studies confirm a demand for well-designed buildings and heritage buildings. The value attached to buildings is particularly relevant in Beirut, given both the urban landscape's extensive transformations and the associations attached to architectural styles and types of buildings. As discussed in Section 2.1, high-rise buildings manifest connotations of wealth. Urban heritage buildings and older building stock, although valued by practitioners, academics, and non-governmental agencies (Davie, 2004), are often disregarded by much of the Lebanese population, as illustrated by interviewees, even though these buildings largely represent the remaining part of the city's affordable housing stock (Fawaz et al., 2018).

Examining the meaningful relationships that people have with place(s) has been of academic interest for decades. Urban change has contributed to reshaping communities and altering the cohesion of societies. The neighbourhood is a central element in both environmental psychology and social geography in understanding people's sense of attachment to places, defined as meaningful locations (Lewicka, 2011). NB can represent an emotional bond to a place and is usually seen as positive as it can influence local social networks and engagements associated with well-being and community identity (Finney & Jivraj, 2013). Neighbourhood relationships and senses of belonging are not universal, however, and some residents will always be excluded. This article contributes to the literature on the relationship between physical urban form and NB (Logan & Molotch, 2007) while accounting for population change given its prevalence to the context. Recent studies suggest that the *type* of local population change matters in relation to feelings of NB and that the impact of population change on belonging may be experienced differently by different ethnic groups (Finney & Jivraj, 2013).

3. Data and Methodology

3.1. Measuring Building Change

Until recently, only a limited number of records documenting construction activities in Beirut in the last 20 years were available. To investigate the relationship between changing urban form and the value residents attach to their urban environments, I exploit a recent data set on construction permits between 2000 and 2013 (Gebara et al., 2016). Building permits reflect the intentions of financiers to invest and of builders to launch projects. The data was verified and updated until 2017 for the neighbourhoods of Ras Beirut and Mar Mikhael. Construction permit rates are adopted as an indicator of morphological densification. The data was instrumental in the site selection as it allowed the

identification of areas which have experienced different rates of construction.

The city of Beirut was divided in a fishnet grid of 200 m by 200 m square cells, as illustrated in Figure 1. The cells were then limited to the squares overlapping the areas of Ras Beirut and Mar Mikhael, which were selected for their data availability, as previous geolocalised surveys were run in 2009 (Ras Beirut; Kaddour et al., 2014) and 2011 (Mar Mikhael; Buccianti-Barakat et al., 2015), giving me access to indicative measures of population change for both areas. The building permit data was used to construct a simple index of building change BC_c as follows:

$$BC_c = \frac{\sum_{b=1}^{n} BUP_{cb}}{area_c}$$

BUP_b is the sum of *built-up areas b* of all new developments within each square *c*, and $area_c$ is the area of each square *c* (0.04 km^2). Once the BC ratio had been calculated, the squares were divided into quartiles, from areas of high BC to areas of low BC. In Figure 1, red areas display high rates of BC (more than 13% of the area of a given square), yellow areas display medium rates of BC (7–13%), light green areas display low rates (5–7%), and dark green areas display almost no change to the urban fabric (<5%).

Ras Beirut presents higher BC rates than Mar Mikhael. The main reason is that Mar Mikhael only became a prime location since the 2000s (MEDNETA, 2015) whereas Ras Beirut has been one of Beirut's most commercial neighbourhoods for many years (Kaddour et al., 2014; Khechen, 2018). The better the location in terms of historical reputation and open views (including sites with high elevation), the larger the built-up area of new projects (Gebara et al., 2016). Given its different history, Mar Mikhael has managed to retain a significant proportion of buildings from the 1950s despite recent constructions. A considerable number of new projects in both these prime locations, however, were given exceptional building permits, allowing their developers to bypass zoning regulations and exceed permissible total coefficients of exploitation (krijnen & Fawaz, 2010). Eighty-three per cent of authorised construction projects were planned on constructed parcels of land as of the 2004 law in Ras Beirut, and 87% in Mar Mikhael (Gebara et al., 2016).

3.2. Mixed Methods: Survey and Interview Data

This article uses a mixed-methods strategy. It draws on descriptive regression analysis of a household survey to identify patterns and detect the relative magnitudes of resident preferences for the urban amenities considered. Both ordinal and binary logistic models are used. Weights compensate for unequal sampling rates and for the possibility that certain populations may not have been included in the sampling frame. Given the climate of deregulated planning, I attempt to account for a possible bias in stated WTP considering mistrust in governmental institutions and developers by controlling for confidence in local government. Table 1 presents the main variables used. In the absence of panel or other cross-section comparisons to control for endogeneity, qualitative data is used to complement, validate, and develop the results obtained from that analysis (Greene, 2007; Lieberman, 2005). Exploration of open-ended survey responses and interviews allowed a better understanding of the reasons behind residents' preferences.

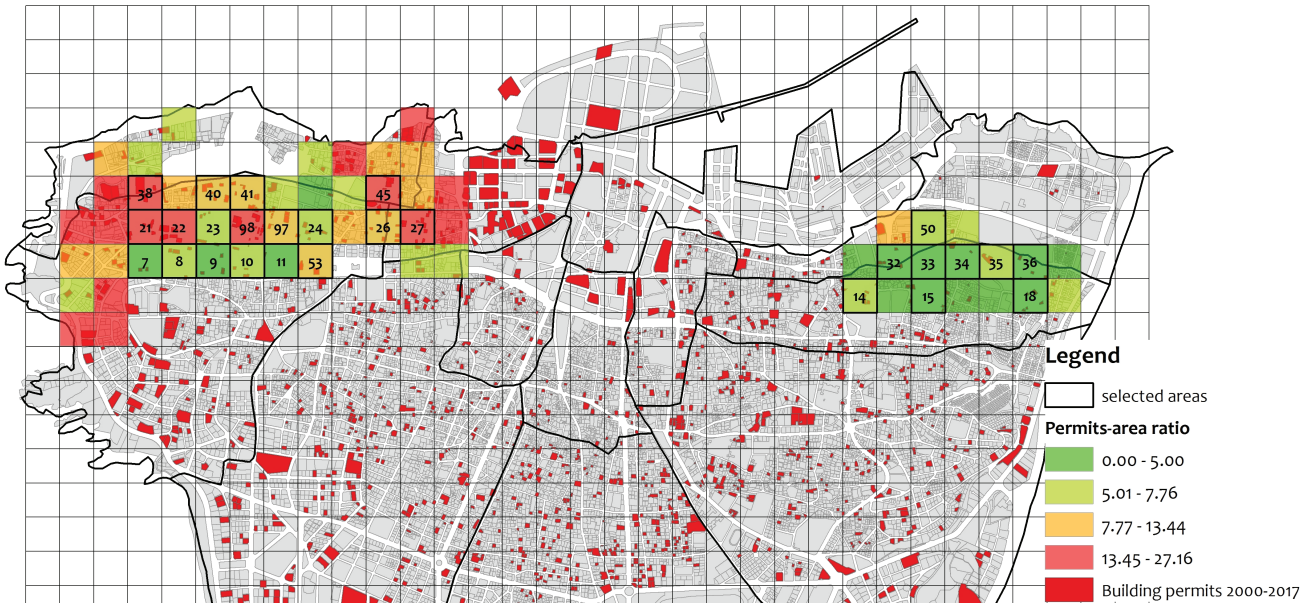

Figure 1. Sampling grid.

Table 1. Summary statistics.

	Mean	SD	Min	Max
BC ratio (quartile)	2.44	1.092	1	4
WTP to stop development (image)	2.97	2.35	1	9
NB [h]	3.49	0.91	1	5.125
Confidence in government [i]	2.76	0.77	1	5
Age [a]	3.28	1.25	1	5
Nationality [b]	1.31	0.60	1	3
Gender [c]	1.50	0.50	1	2
Education [d]	3.29	0.88	1	4
Years lived in neighbourhood	21.21	20.00	0	78
Income [e]	3.76	1.94	1	8
Ownership or rent [f]	2.14	0.99	1	5
Religion [g]	3.75	3.96	1	11

Notes: [a] Age brackets: 1. <21; 2. 22–34; 3. 35–49; 4. 50–64; 5. >65. [b] Nationalities: 1. Lebanese, 2. Syrian or Palestinian, 3. Other. [c] Gender: 1. Man, 2. Woman. [d] Education brackets: 1. None, 2. Elementary, 3. Secondary, 4. University. [e] Income brackets: 1. $450 (minimum wage), 2. $450–1,600, 3. $1,601–3,000, 4. $3,001–5,000, 5. $5,001–8,000, 6. $8,001–12,000, 7. $12,001–16,000, 8. > $16,001. [f] House tenure: 1. Old ownership, 2. Old rent, 3. New rent, 4. No rent. [g] Religion brackets: 1. Muslim, 2. Christian, 3. Druze, 4. Atheist, 5. Refused to answer. [h] Average of NB variables (belonging, friendship and associations, advice, borrowing, remaining a resident, talking to people, helping neighbours, trust in neighbours, knowing neighbours by name). [i] Average of confidence in government variables (confidence in Muhtar, municipality, political parties, parliament, religious bodies, media, NGOs, police).

4. Contradictions of Morphological Change

The survey first asked respondents to briefly describe the physical environment of their street, without being biased by detailed questions. While Mar Mikhael was valued for the quality of its environment as a "village-like" "old neighbourhood with heritage buildings," it was also described as "dirty," "unkempt," and "needing renovation." Ras Beirut was considered a "mixed" neighbourhood, which had become "cleaner after renovations," despite its lack of "open spaces."

This excerpt of quotes instantly underlines the complex nature of the connotations associated with changes in urban form. Because of their neglected state, areas with historical or well-designed urban fabric are not necessarily valued more highly than areas reconstructed with large numbers of high-rise structures. Location was the core theme that emerged when respondents were asked what they most valued about their neighbourhood, highlighting the importance of access to services and retail amenities, and confirming the similarity of these neighbourhoods in this respect. Community cohesion (or neighbourliness) was also highlighted as a key aspect valued in both neighbourhoods.

Respondents were then asked about their satisfaction with the physical aspects of their urban environments in more detail. Figure 2 shows how residents in areas with high BC rates were on average more satisfied with the physical transformations of their neighbourhoods. Moreover, more residents in high BC rate areas considered the overall condition of the buildings in their neighbourhood "excellent" and even found the condition of some older buildings "excellent." Interviews with local NGOs suggested heritage building restoration had recently been more frequent in Ras Beirut, both for commercial and non-profit uses. Higher BC rates therefore have a positive relationship with higher satisfaction of local urban environments. And yet, finding newly redeveloped places more attractive does not necessarily imply a lack of resident interest in preserving more traditional urban environments or stopping excessive building.

In fact, contradictions in the survey responses became apparent while plotting different variable relationships, in many ways reflecting the contradictions of Beirut's construction patterns and underlining the importance of a mixed-methods approach. For instance, while 60% of residents considered new constructions to be attractive, when asked directly if they preferred Beirut's traditional urban stock or new high-rise buildings, 75% preferred traditional building stock. Other variables influencing building-type preferences are education and income, number of years lived in a neighbourhood, and type of building lived in as a child, and are not reported here for brevity.

The morphological evolution of a city is problematic because buildings are almost necessarily related to socioeconomic status (Ragette, 1980). This is especially relevant in contexts where state policies and market forces converge to make profit-driven real estate a pillar of the neoliberal economy, while offering no housing, social, or economic policies to redress its gentrifying

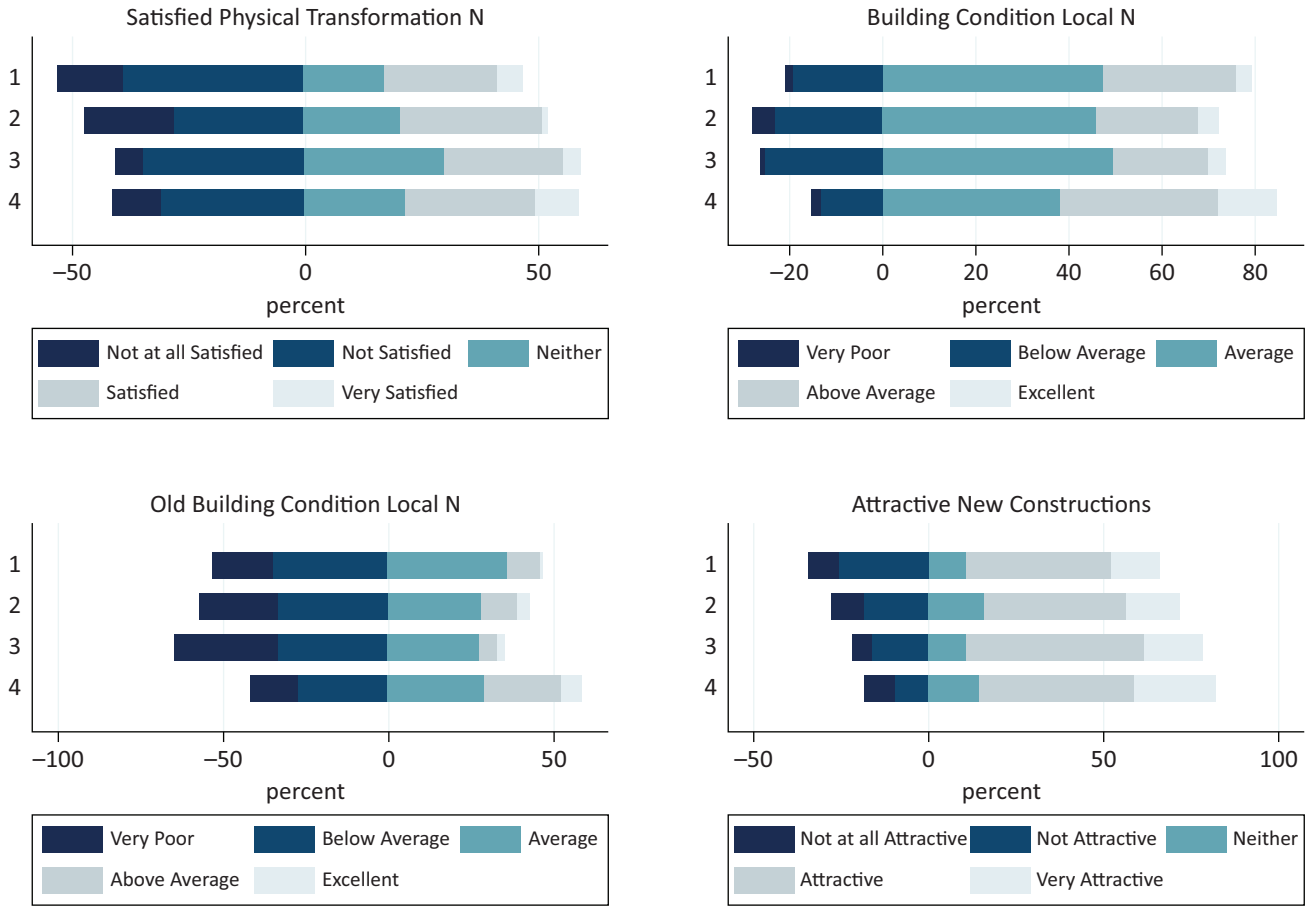

Figure 2. Building conditions. Note: 1–4 indicate the quartiles of BC, 1 being the least change and 4 being the most change. N stands for neighbourhood.

effects. Residents associate BC not only with the evolution of urban physical form but also with changes in local socioeconomic make-up. Interviewees confirmed that the socioeconomic status of buildings is typically well-understood by urban citizens as new constructions are usually preceded by evictions and pressured displacement (Bekdache, 2015). Respondents in Mar Mikhael living in pre-1990 building stock commented that, if a tall building was being built next to them, it would probably result in their forced displacement next.

These relationships are important in explaining the background to the WTP analysis. On the one hand, the responses suggest that the deregulated planning practices "making Beirut for its buildings" are in many ways accepted by society, in contradiction to one of Jacobs' (1961) famous arguments that plans for a city should be made not for its buildings but for its people. In some ways, preferences can therefore be seen to be in opposition to widespread discourses in sustainable urban growth. On the other hand, residents in areas with low BC rates are dissatisfied with the changes occurring in their neighbourhoods.

5. Values in a Changing Urban Environment

The aspect of "neighbourliness" highlighted in the initial open answers of the survey confirmed the importance of addressing both physical and subjective neighbourhood values in considering the possible effects of morphological change (Young et al., 2004).

5.1. Architectural Amenities

Both urban heritage and well-designed modern buildings were generally valued by respondents, with 85% of respondents strongly agreeing with the importance of preserving both types of buildings. Residents were more likely to sign a petition opposing a major change in their neighbourhood if they lived in areas with lower BC rates. Of the 10% of respondents who had signed a petition in the last year, 65% lived in areas that had undergone low or almost no change to their urban fabric. Findings also show that the probability of signing a petition increased with age and that Lebanese were more likely to sign a petition than non-Lebanese nationals. Higher levels of education also increased the probability of signing a petition.

Interviews with local community-based organizations in Mar Mikhael confirmed that they had received some support from residents publicly opposing recently confirmed construction projects, even though "most residents have lost hope that socio-political activism will make any difference." The research thus suggests a discordance between values residents attach to architectural amenities and actual action towards their preservation. These same residents living in areas with low BC rates did not believe legislation to be the best mechanism with which to protect the integrity of urban environments. Interviewees explained that NGOs and other activists have pushed towards legislative solutions to demolition-based constructions with few successes. The Transfer of Development Rights Law (12/10/2017) was a small achievement, intended to allow owners to retain their low-rise buildings while letting them benefit from the development value of their land by enabling them to sell their "air space," thereby gaining revenue to renovate their building. Although this law was passed through parliament, the government has yet to ratify it.

5.2. Neighbourhood Belonging

When considering local neighbourhood ties and actions, the baseline regression presented in Table 2 reveals that location, at least in the case of these two neighbourhoods, is insignificant as other relevant confounders are added to the analysis (Wald test = 1.70; $P > 0.05$). The data is analysed by neighbourhood because respondents are being asked about their neighbourhood as a whole. Age is an important determinant of NB (Wald test = 5.24; $P < 0.01$), where the older the resident the more likely the feeling of NB. Nationality does not significantly influence feelings of NB. This tendency is in fact driven by the number of years lived in a place (Wald test = 33.91; $P < 0.001$). Perceived good quality of building conditions also increases the likelihood of strong NB, indicating a key role for the built environment (Wald test = 10.82; $P < 0.001$).

The likelihood of having signed a petition to oppose a major change to the local urban environment does not significantly affect NB (Table 2). There is therefore no evidence that neighbourhood-based social relations are influenced by residents' reactions to changing forms of urban governance and policy (Johnstone & Whitehead, 2004). This might be a result of the feeble successes that socio-political activism has had in these contexts. Although the "concept of neighbourhood has salience when acted upon…for political or social purposes" (Martin, 2003, p. 380), this is usually reinforced with obtaining desired outcomes, which has not been the case in this case study. The change in percentage of the non-Lebanese population (2009–2018), largely driven by the influx of displaced Syrians, highlighted by many respondents as one of the main sources of change in both neighbourhoods, negatively influences NB but is not significant. This suggests that despite Lebanese discontent with the Syrian influx, as noted by 65% of Lebanese respondents, the "hidden" quality of Syrian neighbours (Pietrostefani, 2019b) does not significantly lower the odds of feeling strong NB. Qualitative commentaries suggested that this lack of significance may be driven by Ras Beirut, whose long-term residents although wary of newcomers live in a historically demographically mixed area. Indeed, a focus on the Mar Mikhael subset suggests a negative and significant relationship in this neighbourhood, in line with research that finds that the arrival of "racialised others" can be perceived as a disruption (Watt, 2010, p. 154).

6. Are Residents Still Willing to Stop Unwarranted Building?

The WTP section in the survey was introduced with a hypothetical scenario. Respondents were asked to imagine they could decide whether a building would be demolished, and a tall new building constructed to replace it as visualised in Figure 3. They were then asked if they would be willing to pay the developer to prevent this change and how much they would be ready to pay every month for a year.

Although CV exercises such as this one have gained increasing acceptance in academic and policy-making circles (Carson et al., 2001), WTP has been shown to be particularly low in less-developed countries both in absolute terms and as a percentage of income (Whittington, 2010). Indeed, considering the low trust in institutions and third-party non-sectarian ties in Lebanon (Bou Akar, 2018), the concept of WTP in a hypothetical scenario was often understood with difficulty, the principal caveat being that paying for a public good is detached from Lebanese reality. Various strategies were therefore adopted in the question design and survey implementation to improve respondents' understanding of the exercise.

This section of the survey focused on one simple attribute—new buildings—as the urban reality of Beirut with its multi-faceted changes makes it difficult to present more complex situations. The specific time frame and monthly instalment scenario were chosen to simplify the conception of the payment method and to give assurance that this payment would not be indefinite. Surveyors were trained to explain that in the hypothetical set-up respondents' monetary contributions *would* be allocated to stop new building construction, and pictures as in Figure 3 were presented as visual aids. Twenty-four per cent of respondents commented that a new building had been constructed very close to their residence at some point in their life, and although giving residents decision power was almost unheard of, 62% of respondents accepted the conceptual framework of the exercise. Respondents who rejected the framework were recorded to later account for this in the regression analysis. Moreover, given the caveats of WTP, I interpret

Table 2. Results of NB logit analysis.

	Model I: Ordinal Logistic Regression, OR [a]							Model II: Binary Logistic Regression, OR [b]						
NB	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Ras Beirut [c]	0.670***	0.795*	0.794*	0.893	0.860	0.855	0.866	0.643***	0.774*	0.771*	0.863	0.821	0.802	0.811
	(0.0793)	(0.0968)	(0.0968)	(0.111)	(0.108)	(0.109)	(0.110)	(0.0870)	(0.112)	(0.111)	(0.128)	(0.124)	(0.123)	(0.124)
Age		1.436***	1.433***	1.129**	1.132**	1.133**	1.134**		1.475***	1.479***	1.172**	1.164**	1.167**	1.163**
		(0.0728)	(0.0726)	(0.0683)	(0.0687)	(0.0687)	(0.0689)		(0.0908)	(0.0914)	(0.0863)	(0.0861)	(0.0863)	(0.0860)
2. Syrian		0.849	0.880	1.205	1.134	1.132	1.140		0.927	0.955	1.301	1.227	1.225	1.221
		(0.151)	(0.158)	(0.225)	(0.214)	(0.214)	(0.216)		(0.198)	(0.206)	(0.296)	(0.283)	(0.283)	(0.282)
3. Other		0.416***	0.415***	0.602**	0.571**	0.570**	0.574**		0.472**	0.471**	0.681	0.660	0.655	0.656
		(0.0941)	(0.0944)	(0.141)	(0.135)	(0.134)	(0.135)		(0.148)	(0.148)	(0.222)	(0.216)	(0.214)	(0.215)
2. Female		0.775**	0.784**	0.793**	0.784**	0.784**	0.782**		0.850	0.855	0.895	0.896	0.896	0.897
		(0.0902)	(0.0915)	(0.0933)	(0.0926)	(0.0926)	(0.0925)		(0.119)	(0.119)	(0.128)	(0.129)	(0.130)	(0.130)
Education		0.810***	0.777***	0.802***	0.835**	0.835**	0.833**		0.754***	0.728***	0.735***	0.758***	0.760***	0.761***
		(0.0592)	(0.0598)	(0.0631)	(0.0665)	(0.0665)	(0.0665)		(0.0634)	(0.0647)	(0.0671)	(0.0702)	(0.0704)	(0.0706)
Income			1.056*	1.064**	1.059*	1.060*	1.058*			1.048	1.062	1.060	1.064	1.062
			(0.0325)	(0.0330)	(0.0331)	(0.0333)	(0.0331)			(0.0398)	(0.0415)	(0.0420)	(0.0423)	(0.0422)
N° years lived				1.030***	1.029***	1.030***	1.029***				1.027***	1.028***	1.028***	1.028***
				(0.00417)	(0.00418)	(0.00419)	(0.00418)				(0.00477)	(0.00481)	(0.00483)	(0.00482)
Building cond. [d]					1.259***	1.259***	1.261***					1.313***	1.312***	1.310***
					(0.0855)	(0.0855)	(0.0857)					(0.109)	(0.109)	(0.109)
Petition [e]						0.946							0.806	
						(0.186)							(0.191)	
Δ % Non-Leb. [f]							0.618							0.636
							(0.237)							(0.215)
Observations	1,055	1,055	1,055	1,050	1,043	1,043	1,043	1,055	1,055	1,055	1,050	1,043	1,043	1,043
Log likelihood	−1,425	−1,373	−1,372	−1,337	−1,322	−1,322	−1,312	−699	−627	−626	−606	−595	−595	−595
LR chi2	11.49	114.74	124.88	161.93	170.50	197.27	234.67	10.56	124.08	124.88	161.93	170.50	197.27	198.43
Pseudo R2	0.07	0.09	0.09	0.12	0.13	0.14	0.20	0.07	0.09	0.09	0.12	0.13	0.15	0.18

Notes: Logistic models fitted and interpreted in terms of their coefficients interpreted as odds ratios. If the OR > 1, then the odds of Y = 1 increases, and if the OR < 1, then the odds of Y = 1 decreases. [a] Ordinal NB: 1 (low average rate of NB) to 5 (high average rate of NB). [b] Top quintile of NB: 1 = top quintile, 0 = all else. [c] 1. Mar Mikhael, 2. Ras Beirut. [d] Building conditions: 1. Very poor, 2. Below average, 3. Above average, 4. Excellent. [e] Signed a petition to oppose major change dummy. [f] Δ % of non-Lebanese residents per neighbourhood block. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Figure 3. An example of a visualisation of BC: Before and after.

WTP as a proxy for resident willingness to stop unwarranted building. I also compare these results with other related indicators.

Respondents were first asked how much the presented tall building scenario would bother or stress them. A new skyscraper being built bothered and stressed residents considerably less in areas with high BC rates. Reasons behind this are illustrated in the respondents' comments: "This has already happened in my area, I have no way of stopping this" and "There are already tall buildings blocking my views around me." One respondent even insisted on showing the interviewer how their terrace, which once had a view, was now simply a space between two concrete walls, as the side of a new building had been erected immediately next to the edge of the terrace.

Estimates presented in Table 3 mirror these observations. I find a negative relationship between WTP and BC rates, which is especially pronounced for the last quartile of the BC variable. Residents living in areas with high BC rates have almost 50% lower odds of being willing to pay to stop new construction near their location of residence. This suggests that there is a desire to stop excessive building practices in areas that maintain low rates of BC, but less in areas that have already undergone a heavy urban transformation. Residents in low BC areas mostly remarked that the renovation they sought did not involve substantial transformation of building form and design but was centred around infrastructural renovation and modernization of existing buildings rather than complete substitution. This is supported by greater percentages of residents having petitioned to object to a major change in their urban environments in areas with low BC rates. Forty-nine per cent of residents were willing to pay the developer to prevent a new building from rising next to their current residence when asked without a picture illustrating the change, while 51% were willing to pay when asked with a picture (Figure 3). Although this is just a small increase, it signals the significance of visual aids in building environment question design.

Table 3 also shows collateral findings. Older residents are less willing to pay to stop excessive construction. Non-Lebanese residents are less willing to pay to stop new constructions, but this is only weakly significant. Residents with higher education present higher WTP, but education becomes insignificant with the inclusion of income, stressing, as noted in the literature (Alberini et al., 2003), the role of resident disposable income in the economic valuation of public goods. While valuing protection of urban heritage and well-designed architecture has a strong positive relationship with WTP, having signed a petition has a significantly negative relationship with WTP, possibly detecting the "lost hope" of residents who have been active in safeguarding their urban environments. Residents having strong feelings of NB have close to 50% higher odds of being willing to stop new constructions and, as predicted, confidence in local government has a negative and significant relationship with WTP, underlining resident mistrust of local institutions.

An open-ended question was asked to residents who were not willing to pay, to enquire further about the reasons behind their decision. This question helped reveal genuine zero (WTP = 0) and protest responses comprehensively (Brander & Koetse, 2011). In line with other literature (Chen & Hua, 2015), 32% of respondents said they could not afford to pay due to budget constraints and a notable 38% of respondents said they "did not trust developers" and that there was "no point in paying as the building would be built anyway." The respondent distrust with developers and planning agencies responsible for changes in their urban environments is clear, marking the number of responses which rejected the contingent market in light of their lack of trust with the planning system (Oh & Hong, 2012). Nineteen per cent of respondents remarked that the municipality should be responsible for moderating morphological changes, and the monetary responsibility should not fall with residents. Many of these same respondents also remarked that they did not believe the municipality would take action and this is why they *would* pay.

Table 3. Results of WTP logit analysis.

	Model I: Ordinal Logistic Regression, OR [a]							Model II: Binary Logistic Regression, OR [b]						
WTP	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
2. BC *light green*	0.746*	0.714**	0.747*	0.754*	0.760	0.806	0.785	0.839	0.795	0.826	0.829	0.833	0.865	0.840
	(0.120)	(0.116)	(0.124)	(0.126)	(0.127)	(0.135)	(0.132)	(0.145)	(0.140)	(0.149)	(0.151)	(0.152)	(0.159)	(0.155)
3. BC *yellow*	0.737**	0.673**	0.688**	0.718**	0.713**	0.750*	0.704**	0.911	0.836	0.873	0.889	0.874	0.924	0.851
	(0.114)	(0.106)	(0.111)	(0.117)	(0.116)	(0.122)	(0.116)	(0.154)	(0.144)	(0.155)	(0.159)	(0.157)	(0.168)	(0.157)
4. BC *red*	0.589***	0.570***	0.575***	0.582***	0.569***	0.530***	0.534***	0.624***	0.590***	0.612**	0.614**	0.593***	0.556***	0.562***
	(0.101)	(0.0991)	(0.105)	(0.107)	(0.105)	(0.0991)	(0.100)	(0.113)	(0.109)	(0.120)	(0.121)	(0.117)	(0.112)	(0.114)
Age		0.888**	0.886**	0.877**	0.873**	0.858**	0.867**		0.820***	0.825***	0.821***	0.817***	0.801***	0.813***
		(0.0430)	(0.0544)	(0.0544)	(0.0543)	(0.0538)	(0.0543)		(0.0442)	(0.0558)	(0.0558)	(0.0556)	(0.0552)	(0.0564)
Nationality		0.818*	0.830	0.842	0.824*	0.830	0.862		0.815*	0.802*	0.809*	0.788*	0.794*	0.832
		(0.0858)	(0.0952)	(0.0969)	(0.0953)	(0.0970)	(0.101)		(0.0908)	(0.0987)	(0.0999)	(0.0983)	(0.100)	(0.106)
2. Female		0.990	0.934	0.921	0.926	0.959	0.949		0.997	0.957	0.949	0.954	0.992	0.975
		(0.116)	(0.113)	(0.112)	(0.113)	(0.118)	(0.116)		(0.127)	(0.126)	(0.125)	(0.126)	(0.133)	(0.131)
Education		1.130*	1.042	1.022	1.039	1.077	1.048		1.124	1.064	1.049	1.074	1.107	1.077
		(0.0801)	(0.0806)	(0.0797)	(0.0816)	(0.0855)	(0.0841)		(0.0841)	(0.0881)	(0.0875)	(0.0904)	(0.0947)	(0.0930)
Income			1.101***	1.097***	1.099***	1.092***	1.086**			1.057	1.056	1.058	1.052	1.043
			(0.0356)	(0.0356)	(0.0358)	(0.0357)	(0.0356)			(0.0377)	(0.0379)	(0.0381)	(0.0381)	(0.0381)
Housing tenure			0.991	1.002	1.004	1.050	1.023			1.071	1.075	1.079	1.127	1.087
			(0.0848)	(0.0862)	(0.0865)	(0.0915)	(0.0896)			(0.0995)	(0.100)	(0.101)	(0.107)	(0.104)
N° years lived			0.999	1.000	0.999	0.995	0.994			1.000	1.000	0.999	0.995	0.994
			(0.00437)	(0.00442)	(0.00443)	(0.00453)	(0.00455)			(0.00465)	(0.00468)	(0.00470)	(0.00483)	(0.00487)
Protect UH [c]				1.374***	1.381***	1.353***	1.369***				1.219*	1.232**	1.207*	1.232**
				(0.139)	(0.141)	(0.139)	(0.139)				(0.126)	(0.128)	(0.126)	(0.129)
Petition [d]				0.686*	0.685*	0.675*	0.695*				0.829	0.831	0.831	0.864
				(0.140)	(0.140)	(0.138)	(0.142)				(0.182)	(0.183)	(0.185)	(0.193)
Open space					1.115**	1.118**	1.118**					1.151**	1.150**	1.154**
					(0.0592)	(0.0594)	(0.0594)					(0.0672)	(0.0678)	(0.0685)
NB						1.399***	1.477***						1.377***	1.483***
						(0.103)	(0.114)						(0.111)	(0.125)
Conf. gov. [e]							0.825 * *							0.768 * **
							(0.0631)							(0.0644)
Scenario dummy [f]	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1,055	1,022	1,022	1,022	1,022	1,022	1,022	1,055	1,022	1,022	1,022	1,022	1,022	1,022
Log likelihood	−1734	−1726	−1455	−1448	−1447	−1437	−1371	−727	−716	−597	−595	−593	−585	−553
LR chi2	9.89	25.32	34.20	47.49	50.40	69.12	65.26	7.25	29.51	30.11	34.66	38.36	54.27	54.56
Pseudo R2	0.02	0.07	0.11	0.16	0.17	0.20	0.23	0.05	0.20	0.24	0.28	0.31	0.44	0.46

Notes: Logistic models fitted and interpreted in terms of their coefficients interpreted as odds ratios. If the OR > 1, then the odds of Y = 1 increases, and if the OR < 1, then the odds of Y = 1 decreases. [a] Ordinal WTP: 1. $0, 2. $1–50, 3. $51–100, 4. ≥ $101. [b] Binary WTP: 1 = Yes, 0 = No. [c] Believes in the importance of urban heritage. [d] Signed a petition to oppose major change dummy. [e] Confidence in government. [f] Acceptance of CV scenario. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

7. Conclusions

The quality of the urban environment in less-developed countries has been increasingly recognised as a key determinant of quality of life (Whittington, 2010). This study sheds light on how morphological densification affects the complex values attached by residents to their urban environments in a quantitively understudied context in the Global South. It also contributes to uncovering some of the darker realities of planning practices (Bou Akar, 2018, p. 5). The intention of this article is to extend recent arguments on the effects of actually existing planning practices (Fawaz, 2017), in this case by examining how living in continual construction, an everyday reality of many deregulated cities in less-developed countries, affects local resident attitudes and values, by exploring specifically how dramatic urban restructuring affects resident values of architectural amenities and NB in Beirut.

Although living in areas with different rates of BC does not affect preferences for architectural amenities, it affects resident socio-political activism towards the preservation of their built environment. NB is not significantly affected by construction rates, but significantly increases both with the number of years lived in a neighbourhood and in locations boasting better building conditions, confirming a role for the built environment with regards to intangible urban amenities. Moreover, despite Lebanese discontent with the Syrian influx in urban areas, higher numbers of Syrian neighbours do not significantly lower the odds of feeling strong NB. This article also finds that approximately 50% of respondents were willing to pay to stop disruptive building near their location of residence, but residents living in areas with high BC rates had almost 50% lower odds of being willing to stop new construction as these areas had already undergone heavy urban transformation.

This article hopes to incite researchers to collect quantitative data in Global South cities. Collecting such data not only allows for a better understanding of resident reactions to urban development processes but can facilitate local urban interventions by exploiting the spatial nature of such data. The consultative nature of such surveys is also a small part of the larger efforts to give residents back their right to the city, as it is often the first step in fostering urban initiatives that give agency to the community and help residents reclaim the city as a co-created space.

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Conflict of Interests

The author declares no conflict of interests.

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Article

Tourist Maps to Capture Place Identity During Disruptive Events: The Case of Beirut

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Abstract
Between October 2019 and August 2020, Beirut underwent an unprecedented sequence of events in its recent history, starting with massive anti-government protests, followed by an economic and financial meltdown, coupled with the Covid-19 pandemic, and ending with an explosion in the port that devastated large parts of the metropolis. As a city-newcomer and urban design student from the Technische Universität Berlin, researching the theme of borders in fragmented cities for my master's thesis, I was faced with a city-in-flux for 200 days, where mobility restrictions and safety measurements, as impacted by Covid-19, led to the exclusion of field investigation as a primary source of information. Hedging against the limitations imposed, I developed and tested a methodology that involves analyzing tourist maps as an alternative reconnaissance tool for urban designers. On the example of the Beirut port blast area, namely Gemmayze and Mar Mikhael, this study includes the decomposition of three tourist maps of Beirut in order to extract and verify their data and, furthermore, reconstruct the identity and image of the neighborhoods through this secondary resource. The analytical framework brings together the theories of place and space that exist in the different disciplines of spatial studies: social science's *The Production of Space* by Lefebvre; urban geography's *Place and Placelessness* by Relph; environmental psychology's *The Psychology of Place* by Canter; and urban design's *Components of the Sense of Place* by Punter and Montgomery. By exemplifying what it means to be a foreigner and a researcher exploring tourist maps in Beirut during this particular time, this article aims to encourage interdisciplinary approaches in urban studies and to critically reflect on atypical and underutilized tools for studying contemporary cities under extraordinary conditions of change.

Keywords
Beirut port blast; city-in-flux; map deconstruction; place identity; spatial studies; tourist maps; urban design

Issue
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1. Introduction

Beirut's urban fabric is the visible reflection of the territory's history and cultural heritage of its citizens. Thirty years after the civil war and the city's former geographic division, Beirut remains a silent tension manifested in cognitive maps and behavioral patterns. The result is a spatial fragmentation due to both political and religious affiliation (Davie, 1994). However, between October 2019 and August 2020, Beirut experienced radical changes in its cityscape, its users' behavioral patterns, and its cognitive maps, provoked by an unpredictable and unique row of crises (Figure 1). October 17th, 2019 marks the start of the Lebanese Revolution, presenting a "city of political upheaval" dominated by contestation and reclamation. Induced by planned taxes on WhatsApp, gasoline, and tobacco, a series of massive anti-government protests accrued all across the country, followed by an economic and financial meltdown of Lebanon, threatening a total collapse of the economic system. This was the outcome of frustration and resistance against longstanding unemployment, economic

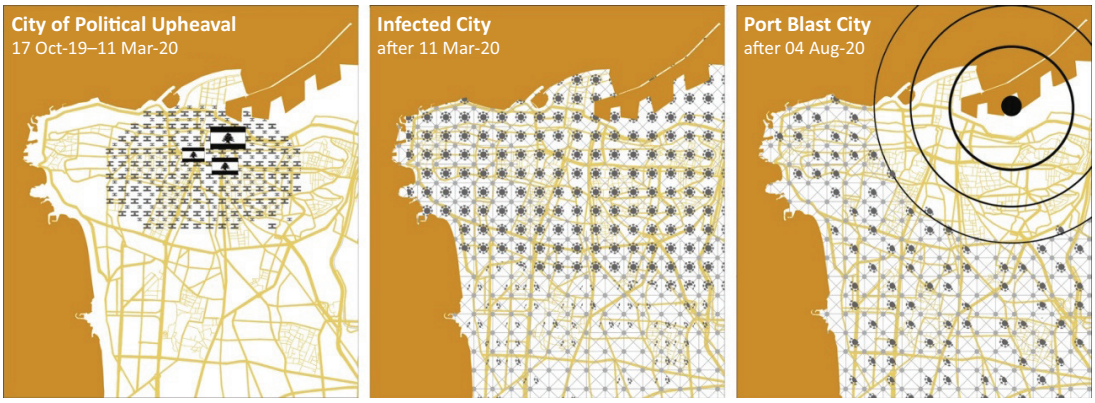

Figure 1. Beirut-in-flux: Illustrating and localizing the prevailing conflict in the capital in the three phases from October 2019 to August 2020.

stagnation, and extreme corruption in the public sector. The following "infected city," caused by the Covid-19 virus spreading worldwide, forced radical adjustments, changes in social and public life, and the lockdown of the country. In March 2020, Beirut started with the closure of schools and universities, a quarantine for residents, the closure of land and sea borders, and the shutdown of the international airport. Disrupted by the three-month lockdown, the revolution returned to the streets on June 6th, 2020. Beirut's international airport reopened on July 1st for commercial flights. Group gatherings remain prohibited and face masks and physical distancing were mandatory. The numerous crises at several levels found their peak in the port blast of August 4th, 2020, when two explosions hit the capital, ripping through the port of Beirut. The disaster was triggered by a large fire in warehouse number 12 next to the grain silos on the capital's port, leading to an initial explosion, followed by a series of smaller blasts, and one final colossal explosion. Caused by 2,750 tons of ammonium nitrate, the blast sent a supertonic wave radiating through the city and a vast reddish mushroom cloud in the capital's sky. The explosion destroyed property worth $10 to 15 billion, causing the death of more than 200 people and leaving thousands injured and homeless.

In addition to the dramatic economic and social consequences, the numerous crises also negatively impacted the academic and scientific sectors. Enforced restrictions and security measures led to online-only education, seminars, and meetings, and the exclusion of field research, an essential routine for spatial analysis. As a German researcher intending to study the topic of intangible borders in fragmented Beirut within the frame of a master's thesis in urban design at the Technische Universität Berlin and the American University in Beirut, I was faced with the unexpected challenge of working remotely: As a foreigner and newcomer in Beirut, how can one analyze a city-in-flux from home? The unexpected circumstances triggered the search for an alternative tool to investigate the capital from a distance. Hedging against the imposed constraints and limitations, I developed and tested an unusual methodology for urban exploration by studying touristic maps of Beirut with the aim of reading the city's identity without on-site observations. The approach, first, requires deconstructing the maps into their various layers of content (Harley, 1989) and, second, translating their information into sketch maps (Lynch, 1960).

A tourist and an urban designer share a common concern for comprehending the identity of unfamiliar territories in a short time, the first for the pleasure of discovery, and the second for work. On the one hand, tourist maps are popular and efficient tools for way-finding and urban legibility as they have the advantage of shaping cognitive maps of the city for easy navigation by pin-pointing urban identity features in terms of landmarks, nodes, paths, districts, and edges (Lynch, 1960). On the other hand, as cartographic icons and bearers of culture themselves (Cosgrove, 2004), we expect them to comprise valuable information about place identity. Nevertheless, tourist maps are designed with a promotional agenda for the general non-specialized public. As such, they contain white lies (Monmonier, 1991) in form of missing data; this might be particularly verifiable in multi-sectarian and fragmented cities like Beirut (Saliba, 2020), where what is withheld is more significant than what is promoted in comprehending and entangling complexities of the urban realm.

But what does it really entail to be a tourist and a researcher at this difficult time in Beirut exploring touristic maps? Does a two-dimensional representation of the city reflect enough information about its place identity? Furthermore, how can effective data be extracted from maps and their content validated for urban planners? These questions formed the framework for the research topic to outline the merits and limitations of tourist maps for urban analysis and to define the significance of the secondary resources as tools to capture place identity. The approach is divided into three parts:

I. An interdisciplinary conceptual-analytical framework was designed to validate the data provided by the tourist maps.

II. Tourist city maps were organized into three categories and, in the case of Beirut, deconstructed into their narrative layers to verify the contribution of each for professional city analysis.

III. To illustrate and assess the promoted cognitive map sketch maps of the blast area were generated by translating the tourist map information into the image elements named by Lynch (1969): paths, districts, edges, landmarks, and nodes.

2. Conceptual-Analytical Framework (I)

Beirut is a city with both a rich history and present. Under the logic of war, from 1975 to 1990, a demarcation line divided the city geographically and ideologically into a Christian East and a Muslim West. The pre-war tendency towards pluralism was replaced by a homogenization of the territory and segregation of the population (Genberg, 2002). The result was two districts with a distinct geographic identity (Davie, 1993, p. 10). Within each area, additional clusters emerged that were associated with a controlling militia. During these 15 years of war, sub-centers emerged in and around Beirut, giving a degree of autonomy and independence to the area in which they were located without centralizing functions (Davie, 1993). The spatial enclaves created by the war and still visible in the city can be grouped in terms of religious affiliation and sectarianism. Today, symbols such as the Virgin Mary in a glass box or the yellow flag of Hezbollah in addition to many more signs serve as territorial markers.

The compounding social environments of multisectarian and fragmented cities like Beirut, further disruptive events, and growing environmental concerns give weight to interdisciplinary approaches of diverse bodies in urban settings, crossing the blurry boundaries between design disciplines (Saliba, 2015). An urban designer's agenda is primarily concerned with "the quality of public space, both physical and sociocultural, and the creation (and management) of meaningful places for people to enjoy and use" (Carmona & Tiesdell, 2007, p. 7). "Many attempts at grounding urban design theory in social sciences are leading to new understandings of urban space, locating it at the intersection of social theory, human geography, and cultural studies" (Saliba, 2015, p. 2). Since the early 1960s, an interdisciplinary field of environmental perception has emerged that focuses specifically on how people perceive environments by examining spatial perception and cognition, as well as the generation of meaning, symbols, and values in the urban environment through place experience. The understanding of place beside its physical component as what further distinguishes one place from another has been often described with identity, such as in the Latin concept of genius loci by Norberg-Schulz (1976), indicating an attachment to a spirit of place (Jackson, 1994, as cited in Carmona et al., 2003). Lynch (1960) describes that the identity of a place is what constitutes its individuality and distinguishes it from other places. Nairn (1965, as cited in Relph, 1976, p. 45) complements that with the following:

> There are as many identities of places, as there are people, for identity is in the experience, eye, mind, and intention of the beholder as much as in the physical appearance of the city or landscape. But while every individual may assign self-consciously or unselfconsciously an identity to a particular place, these identities are nevertheless combined intersubjectively to form a common identity.

Space and place together define the nature of urban geography (Tuan, 1979, p. 387). The basic dualism between place and space, as they are not the same but steadily connected, has been tangled by different perceptions in social sciences, geography, environmental psychology, and urban studies. Place is defined by location, as one "unit among others to which it is linked by a circulation net. Place, however, has more substance than the word location suggests: it is a unique entity, a special ensemble" (Lunkermann, 1964, as cited in Tuan, 1979, p. 387). Space, in contrast, is conceived as abstract geometries of distance, direction, size, shape, and volume. While "place" is associated with history, experience, and meaning through people (Tuan, 1979), "space" is seen as a contextual output for place, which only acquires meaning through the implementation of individuals, groups, or societies, and thus becomes place (Relph, 1976):

> Space, then, [is] seen in distinction to place as a realm without meaning—as "a fact of life" which, like time, produces the basic coordinates for human life. When humans invest meaning in a portion of space and then become attached to it in some way…it becomes place. (Creswell, 2004, as cited in Castillo, 2017, p. 20)

An early attempt to define place through identity and opposing placelessness through its absence is the critical approach of the geographer E. Relph (1976). He describes places as an experienced phenomenon of the lived world, full of meaning, activities, and objects:

> The meaning of place may be rooted in the physical setting, objects, and activities, but they are not a property of them—rather they are a property of human intentions and experiences….The three fundamental components of place are irreducible one to the other yet are inseparably interwoven in our experiences of places. (Relph, 1976, p. 47)

Accordingly, he delineates place in terms of *physical setting*, *activity*, and *meaning.* In counterpart to the concept of place, he defined *placelessness* as the loss of uniqueness in cultural space through the making of standardized landscape.

Building on Relph's concept, Canter (1977), a well-known environmental psychologist and pioneer of conceptual studies in urban design, created the first model in which he captures the urban environment as an assemblage of places, created through the interaction of *activities*, *physical attributes*, and *conceptions*. Canter's model has been reproduced in various versions (Figure 2). Punter (1991, as cited in Carmona et al., 2003) and Montgomery (1998, as cited in Carmona et al., 2003) located the place components within urban design thoughts. Correspondingly, the identity of place, or *sense of place* as named in Punter's model (1991, as cited in Carmona et al., 2003), includes the following *place activities*: behavioral patterns, pedestrian and vehicle flow, noise, and smell. Furthermore, he describes the *physical setting of place* as permeability, landscape, townscape and built form, and the *meaning of place* through legibility, cultural association, perceived functions, attractions, and qualitative assessments. Montgomery (1998, as cited in Carmona et al., 2003) builds on Punter's definition of the sense of place, adding that *place activity* can be also captured through its flow, vitality, diversity, café culture, pastimes, local traditions, events, opening hours, attractors, people watching, transactions base, and fine grain economy. The *physical setting of place* which he names the *form* can be analyzed through scale, intensity, permeability, landmarks, space to building ratios, stock, vertical grain, and public realm. The last component, the *image of place* Montgomery describes by cognition, perception, and information, contains symbolism and memory, imagination and legibility, sensory experience and associations, knowledgeability, and receptivity.

Lefebvre imprints a social characteristic on space claiming that "space considered in isolation is an empty abstraction; likewise, energy and time" (Lefebvre, 1974/1991, p. 12). Urban space is more than a "container-like-frame" of distance, direction, size, shape, and volume as it gets produced, as well as reproduces its conditions of existence—"containing [social] relations of reproduction as well as relations of production" (Lefebvre, 1974/1991, p. 73). The space of a city, in his conclusion, is a product "composed by people, by well-defined groups" (Lefebvre, 1974/1991, p. 74) and cannot be compared with a static object. It is a social construct created through social relations that he characterized as the triad of spaces: the navigation of spatial practices in the *perceived space*, the signs and symbols of the *lived space*, and the people-less and conceptualized space of the *conceived dimension*.

Lefebvre's "spatial turn" (Cuff et al., 2020) stresses the importance of space in capturing the urban. Thus, space and place are not the same. Lefebvre's theory of *social space* and the urban planning approach that defines the *sense of place* overlap in certain aspects. The contribution in this study is the synthesis of the urban design identity model with the concept of Lefebvre's *social space*. This linking is based on Lefebvre's conception "that any reality is related methodologically and theoretically to the three general concepts of form, structure, and function" *(*Lefebvre, 1974/1991, p. 369). In this context, Lefebvre first allocates his *perceived dimension* to *form*, stating: "Form corresponds to the moment of communication, hence to the realm of the perceived" (Lefebvre, 1974/1991, p. 369). He describes the perception of form not in a material meaning but as the *spatial interpretation* which can be observed in the urban through *place-activity*. It is the vital component of spatial negotiation that summarizes all environmental and social interactions, behavior, and navigation within a particular place (Canter, 1977, position 20464). Designated also as *place appropriateness*, Canter states that there are clearly defined patterns of relationships and associated appropriate behavior within a place (Canter, 1977, position 18097). Accordingly, the form of a place is further compounded if the range of activities is diverse or the action associated within it is subjective and, therefore, exchangeable. Second, Lefebvre allocates the *conceived dimension* under the headline of *structure*.

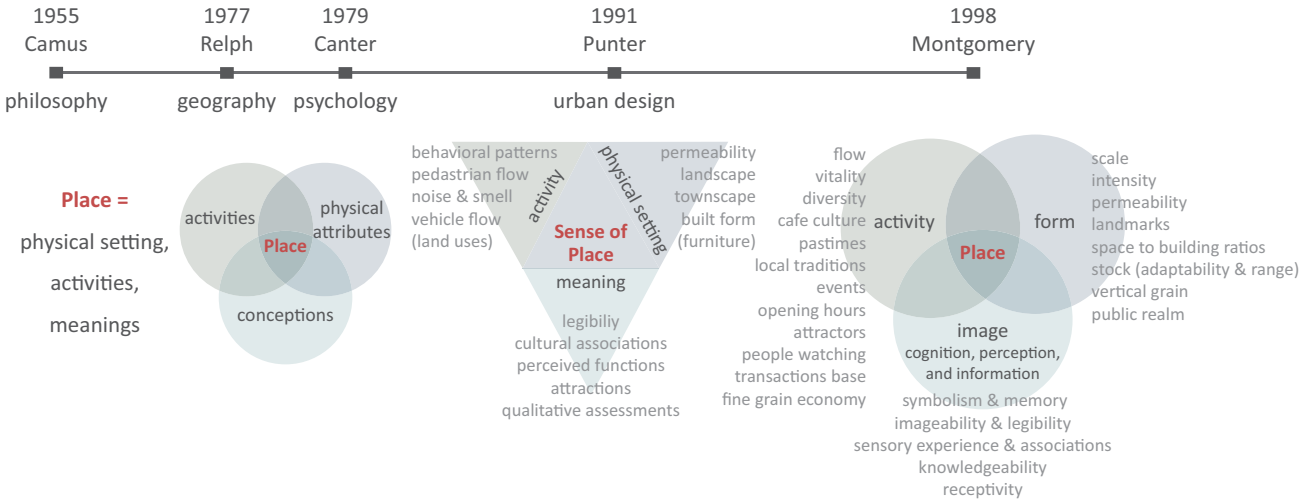

Figure 2. Development of (sense of) place diagram. Sources: Reconstructed by the author based on Canter (1977) and Carmona et al. (2003).

As per Lefebvre (1974/1991, p. 389), "structure is conceived and implies a representation of space." It is the medium for objects as well as an object itself—it is a visual space (Lefebvre, 1974/1991, p. 361). As a *representation of space*, this dimension intervenes in the urban through constructions, projects, and architecture which indicates a *spatial materiality*. Therefore, it can be linked to the *physical setting of place*. Determining the structure of the perceived space, it plays a role in the social and political practice as it establishes relations between objects and people in represented spaces. Third, Lefebvre allocates his *lived dimension* to *function*, stating that "function is carried out, effectively or not and corresponds to the directly experienced in representational space" (Lefebvre, 1974/1991, p. 27). The only products of the lived dimension—the symbols, images, and signs—overlay the physical and transmit the *spatial meaning*: "These [symbolic works] are often unique; sometimes they set in train 'aesthetic' trends and, after a time, having provoked a series of manifestations and incursions into the imaginary, run out of steam" (Lefebvre, 1974/1991, p. 42). Its origin is in the users, created through history and environmental perception. As such, the lived-function or lived-meaning is connected to the *conceptualizations of place*. The result can be illustrated in a model presenting the components for the *spatial identity*: spatial interpretation (*perceived form*), spatial materiality (*conceived structure*), and spatial meaning (*lived* function; Figure 3).

3. Deconstruction of the Maps (II)

> A map says to you, "read me carefully, follow me closely, doubt me not….I am the earth in the palm of your hand. Without me, you are alone and lost." And indeed you are. Were all the maps in this world destroyed and vanished under the directions of some malevolent hand, each man would be blind again, each city be made a stranger to the next, each landmark becomes a meaningless signpost pointing to nothing. (Harley, 1989, p. 1)

3.1. Classification of Mental Maps

In their various roles, maps have different functions. As guides, they provide spatial information, help us navigate, mark territories, and communicate information. As a tool, they serve analysis, make growing cities manageable, and guide developments. Maps create a common basis for future decisions and projections of design plans. As a medium, they store knowledge, construct people's views of the world, constitute nations and identity and, as a strategic tool, they serve as weapons. Cartography is the science and practice of drawing maps; it describes the achievement of isolating select spatial information, modeling it, and encoding it in a two-dimensional representation.

Hence, the history of urban cartography is old, the pace of development of alternative mapping techniques and conceptual exploration is slow (Harley, 1989). Maps of urbanizing cities in the 16th century were not initially intended to be way-finding instruments but ceremonial and decorative images depicting the complex spatial and social totality of the city. In the 18th century, legibility became the overriding goal of urban mappings (Cosgrove, 2004), which implied cartographic objectivity and accuracy in the map-making process, to eliminate evidence of human interventions between survey instruments and printed images. By the mid-20th century, urban mapping was no longer a process associated with planning and design professions. The exploration of the "city as performance art" (Cosgrove, 2004, p. 56) and the analysis of spatial relationships and decisions through cognitive maps were commissioned by artists and various scholars concerned with urban space. Cognitive mapping is nowadays a standard tool in planning arts and social sciences. Described as "environmental and mental image" by Lynch (1960) as well as Lefebvre (1974/1991), "cognitive schemata" (Lee, 1968, as cited in Kitchen, 1994), "spatial schemata" (Neisser, 1976), "a map in the head" or "mental map" (Canter, 1977), "cognitive image" (Lloyd, 1982, as cited in Kitchen, 1994), or "mental representation" (Gale, 1982), current understanding

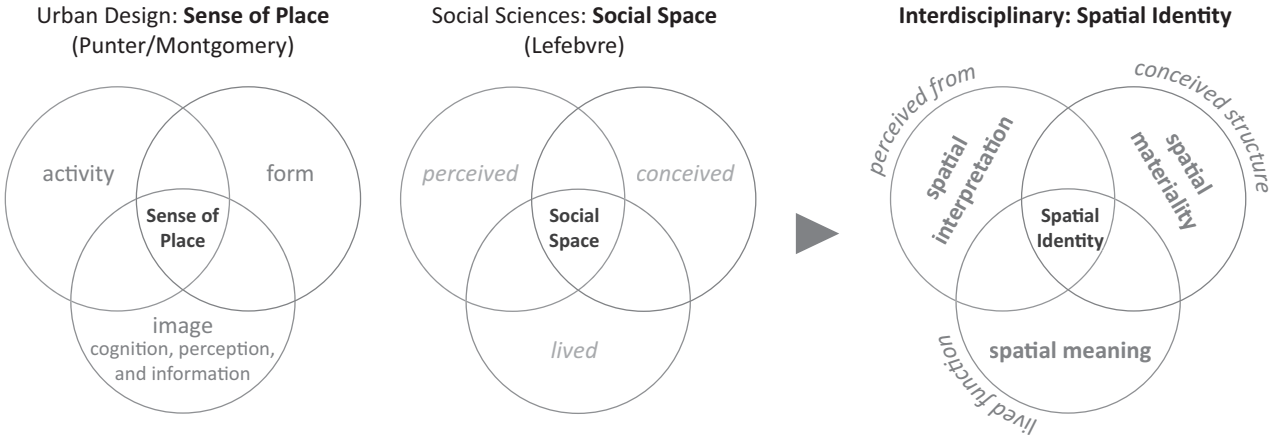

Figure 3. Identity models: Synthesis of Lefebvre's social space concept with the urban design model of the sense of place.

suggests that neither a uniform terminology nor a distinction between different agendas in the process of mapmaking exists.

Undertaken by a personal agenda, the *essential-cognitive map* is the personal point-of-view perception of what the environment contains (Lynch, 1960). It is a mental construct that we use to understand and know the environment, leading to spatial decision-making and behavioral patterns. Essential cognitive mapping is a method for spatial problem solving due to simple way-finding, orientation, and organization in space. It is a product of environmental perception created by gathering, organizing, and interpreting spatial information through the human sensory system—vision, hearing, smell, and touch—and the four dimensions of perception—cognitive, affective, interpretative, and evaluative (Carmona et al., 2003). The essential cognitive map describes the environmental cognition (Canter, 1977), defined as "the knowledge and internal or cognitive representation of the structure, entities, and relations of space; in other words, the internalized reflections and reconstruction of space in thought" (Hart & Moore, 1973, as cited in Kitchen, 1994, p. 1).

The approach of the avant-garde art movement Situationists International, a group of artists, activists, and thinkers in the 1960s, presented a whole new category of cartographic products, underlying a philosophical-critical agenda. In this evolved sense, cognitive mapping is a tool to illustrate complex spatial interrelations and uncover hidden traces of lived context (Cosgrove, 2004) in order to initiate a debate on how urban space is experienced and known and, furthermore, how it should be mapped. Their work focused on social practices and formations in everyday surroundings, oriented towards experimentation in contact with the real.

Lynch's methods, known as mental-mapping related to the spatial encoding of information in memory and the visualization of cognitive maps, underlie a professional agenda to explore the environmental-cognitive system and how people perceive space (Canter, 1977, position 7565). Studies regarding examining people's cognitive maps seek to understand human's interactions and identities with their environment in terms of their cognitive system (Canter, 1977, position 5639).

3.2. Classification of Tourist Maps

Driven by societies' growing desire to explore foreign places through traveling, maps created for tourism form one of the most common and diverse cartographic documents. The tourist map is a much-favored device, designed to be useful and popular (Monmonier, 1991). Its double-sided characteristic of informing and impressing its audience is the result of both objective and subjective mapping techniques. As a tool for orientation, it provides the reader with sufficient, though adequately simplified topographic content, and functions as a location marker and way-finding instrument for guiding the observer to a physical destination. However, tourist maps are more than just aids to pin-point landmarks and cultural attractions of the city: They are cartographic icons and bearers of culture themselves (Cosgrove, 2004). As a promotional device, map elements other than topographic content perform a different function. By promoting the city's branding, local rules, and inside knowledge, the tourist map points towards the city's *intrinsic logic* to provide outsiders with an inside view of the local.

Building on the existing map sorting by Jancewicz and Borowicz (2017), who grouped tourist maps after type and aim of tourism, I added the set of tourist city maps in favor of this research. The tourist city maps can be further categorized by their means of exploration, of which there are three identified ways a city can be explored: (a) self-guided, (b) guided via bus, and (c) guided walking tours. The first category contains maps for travelers discovering the city self-guided. The tour can be performed afoot or by bicycle or car. Maps for self-guided city explorations are often part of travel guides and guidebooks, tourist atlases, and online based for the display on mobile devices. The second describes a guided discovery in a group via sightseeing buses, following a fixed route through the city with arranged stops at major landmarks and tourist attractions. The third group summarizes the city discovery on a guided tour by foot or bicycle, led by several private operators, local tourist offices, and global platforms. Mainly fee-based, walking-city tours are navigated by a guide who tells the city's history and provides background information to its audience.

Resulting from the sorting the research scope was limited to three maps of Beirut: (a) Lonely Planet map for self-guided city exploration; (b) City Sightseeing map for guided tours via bus; and (c) Best of Beirut map for guided walking trips (Figure 4).

Each map follows its own approach and objective in terms of the target audience, the mobility system it promotes, and the content focus. The Lonely Planet is one of the world's leading providers of travel books and information. The travel guide targets subcultures and young people, and the mobility system it promotes is mainly focused on private cars and pedestrians. Supported by a clear and legible display, its map provides information for cultural tourism. The zoom maps entail detailed information about the internal structure and functions of the districts. Furthermore, the written information in additional texts promotes the logic of the local. According to the website of City Sightseeing, the potential customers are tourists of all categories, age groups, socio-economic status, and nationalities. The mobility system, a fixed route through the city by hop-on hop-off bus, determines the complete information of the city map. Based on mobility, the focus is set on routes and points of interest. As a result, the map shows one way to see the city and simplifies its complexity. The Best of Beirut map is created by Zawarib, the leading cartography company in the Middle East and based in Beirut. On its website, the company

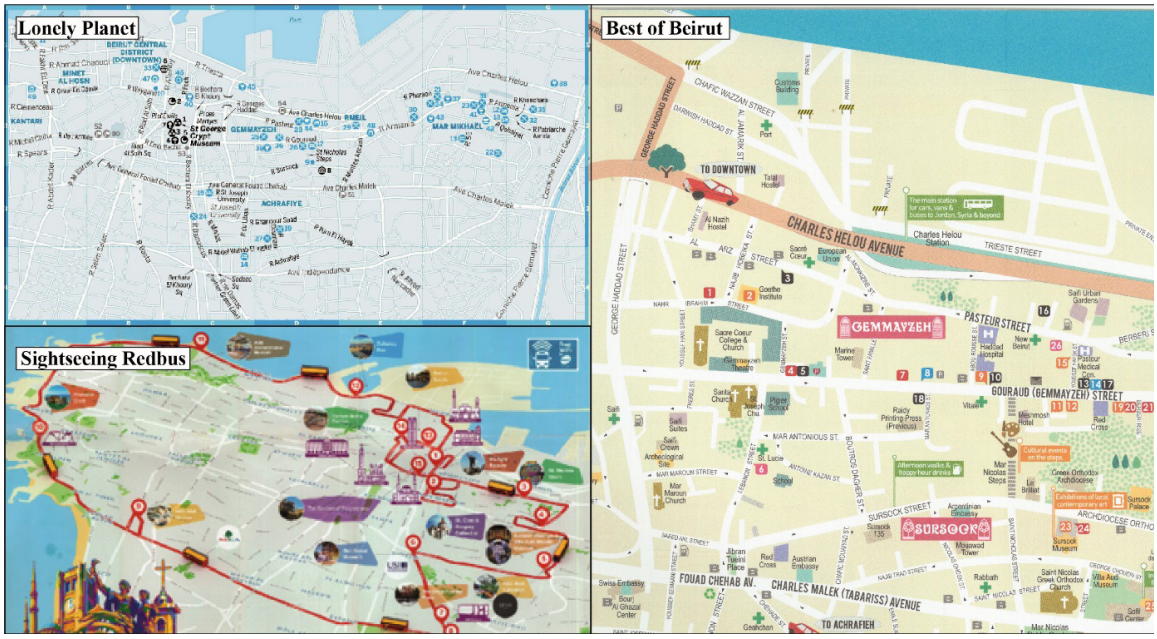

Figure 4. Tourist city maps of Beirut. Sources: City Sightseeing Worldwide (2021); Ham et al. (2019, p. 1015; Lonely Planet); Zawarib (2020; Best of Beirut).

advertises that it creates visually meaningful maps to discover a city and explore unusual places, the target groups of which are newcomers, visitors, and residents. With the focus set on pedestrians and cyclists, the zoom maps feature detailed route data. The map is intended to provide insider information to outsiders, and, therefore, the associated emphasis is on districts and nodes.

To extract the data of the maps, they were subsequently deconstructed into the various layers of content, referred to by Harley (1989) as *text*:

> The word "text" is deliberately chosen. It is now generally accepted that the model of text cannot be applied only to literary texts. To texts that do not come from books, such as musical compositions and architectural structures, we can confidently add the graphic texts we call maps. (McKenzie, 1986, as cited in Harley, 1989, p. 7)

Viewing maps as text suggests a shift in perspective to "recognize narrative qualities of cartographic representation" (Harley, 1989, p. 7). Tourist maps are composed by three narrative layers. The first text contains the geographic data. It is the base map providing route and area information and serving as an aid for orientation. The second text displays location data through additional icons and symbols providing the reader with the program of the local. The third text includes promotional data through supplementary information around the map, such as recommendations, diagrams, and figures supporting the image and logic of the place.

For the analysis, the geographical scope was narrowed down to the port blast area (Figure 5), namely Gemmayze and Mar Mikhael, famous places for locals and tourists.

To verify the suitability of the extracted data as a reference for spatial identity (*spatial materiality*, *spatial meaning*, and *spatial interpretation*), the content of the three layers is reviewed with the help of the analytical and conceptual framework (Table 1). The analysis leads to three main findings. First, information about *spatial materiality* is primarily found in the first and second texts

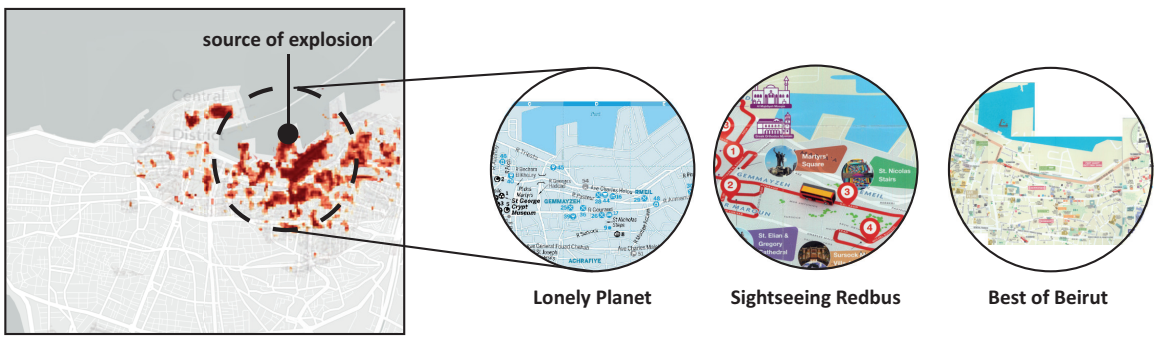

Figure 5. Port blast area.

Table 1. Map data as a reference for spatial identity.

Component of Spatial Identity	First Text	Second Text	Third Text
Spatial Materiality	Land use (port city, main road separates sea and land, no park). Built form of churches, hospitals, and schools.	Landmarks (Sursock Museum, St George Crypt Museum, Cardo Maximus, Martyrs Square, St Nicolas Stairs). Program (port, four landmarks, 18 cultural attractions, four cafés, 13 restaurants, seven hotels and hostels, nine shopping boutique, six schools, 11 churches, Charles Helou Bus Station, House for European Union, two embassies, Ministry of Foreign Affairs, Electricité du Liban, one hospital, nine pharmacies, 20 ATMs, 13 parking spaces, and a post-office).	
Spatial Meaning	Legibility (waterfront, road connections east-west and northwest, intrinsic character of the district, open public places, cultural hop, Beirut walking tour). Attractions (landmarks, museums, archaeological display, galleries, religious sites, art, nightlife).		Symbols, images, and signs (iconic hotels, iconic stairways, iconic restaurants, Parisian-style décor, décor in rich art and antiques, industrial chic, Lebanese artisans). Cultural association (fascinating nexus point of Middle East & West, tradition and modernity). Perceived functions (mountain vista, community feeling, exhilarating atmosphere, live music).
Spatial Interpretation		Transaction base (gastronomy, leisure locations, museums, café culture). Attractors (gastronomes, locals, expats, art scene, tourist, foodies). Vitality (two stops of walking tour, cultural hot spot, high density of bars and restaurants, four sightseeing spots).	Behavior patterns and routines (afternoon walks, happy hour, lunch break). Flow (crowded, street life). Local events and traditions (nightlife, rooftop bars, artistic projects, open-air events, local hangouts, film festival, national cuisine, fashion conscious, multilingual). Opening-hours (restaurants and cafés: 8 am–12 pm, clubs: 6 pm–3 am; shopping: 9:30 am–7 pm; museums: 9 am–6 pm). Noise and smell (music, traffic, people, cuisine).

of the maps through indicators for land use, the program of the local, landmarks, and legibility. Second, data about *the spatial meaning* is given in the first and third texts by data about symbols, images, signs, cultural associations, perceived functions, and descriptions. Third, evidence about *the spatial interpretation* is presented by the second and third texts through data about transaction base, behavior patterns and routines, local traditions, flows and street life, opening hours, descriptions of noise and smell, and the café culture. The results can be visualized in a model that illustrates that each narrative level (text) contributes differently, but equally importantly, to the spatial analysis (Figure 6).

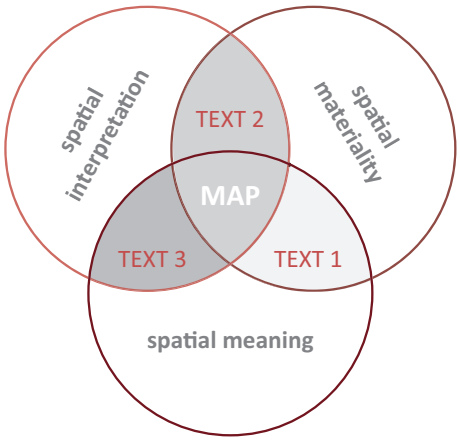

Figure 6. Map deconstruction model: Presenting the contribution of the three texts to spatial identity.

4. Translation Into Urban Design Sketch Maps (III)

To convert the tourist maps into urban sketch maps, the data was evaluated and translated into the five picture element types mentioned by Lynch (1960): paths, districts, edges, landmarks, and nodes (Figure 7). Lynch (1960) describes (1) *paths* as routes along which people move throughout the city; (2) *edges* as boundaries and breaks in continuity; (3) *districts* as areas branded by common characteristics; (4) *nodes* as strategic focus points for orientation, like squares and junctions "into which an observer can enter, and which are the intensive foci to and from which he is traveling" (Lynch, 1960, p. 47); and (5) *landmarks* as external points of orientation, usually an easily identifiable physical object in the urban landscape:

(1) *Paths*: The Charles Helou Road (a), which runs from East to West Beirut, was identified as a high-frequency path. Branching off from Charles Helou road to the south are George Haddead (b) and El Shouhada/Damascus Road (c). Parallel to Charles Helou and also with high frequency is Gourald/Armenia Street (d). Parallel, but with lower frequency, runs Charles Malek/Sagesse (e). Branching off from Gourald Street is the St. Nicolas side pass (f). It has been recognized as a strong path all the way to Sursock Street (g).

(2) *Edges*: The main road Charles Helou separates the district in the north, further functioning as a border from the district direction port. As such, it is identified as an edge.

(3) *Districts*: Officially being two districts, Gemmayze and Mar Mikhael (h) appear as one section of the city with a hotspot along Gourald Street. The area in the south is the beginning of Achrafieh (i), another district separated by Malek/Sagesse. In the west borders, one can find the Central District (j).

(4) *Nodes*: The main road Charles Helou contains the only official station Charles Helou (k) for buses to Jordan, Syria, and beyond, an essential node for cross-border mobility. A node in leading into the district from the west is the intersection of George Haddead and Gourald (l). The long Gourald gets less monotonous through an additional node (m) at the St Nicolas stairs, a local hangout and hub for cultural and social events.

(5) *Landmarks*: The area of observation contains various landmarks, iconic sights, and attractions. Defined landmarks are the Sursock Museum (1), the Sursock Palace (2), the St Nicolas Steps (3), and the St Elian Gregor Cathedral (4). Not in the district of Gemmayze and Mar Mikhael but still in our observation area are landmarks such as the Martyrs' Square (5), the famous Al Amin Mosque (6), the St Georges Crypt Museum (7), and the Cardo Maximus (8). Furthermore, described as iconic sights are the Grand Meshmosh Hotel (9) and the famous restaurant Mayrig (10).

Through the extraction of the program of the local it becomes visible that the neighborhood duo is an essential cultural component of Beirut, not least because of its landmarks, iconic sights, and attractions, but also because of the collection of boutiques, studios, galleries, open-air events, art projects, exhibitions, and other cultural events. Twelve cultural attractions are marked in the maps (Galerie Tanit-Beyrouth, Goethe Institute, Joy Mardini Design Gallery, escape the room, the Artlab, the Art on 56th gallery, 392 Rmeil, Alaliays bookstore, Metropolis Art Cinema, Artisan du Lebanese, Villa Audi Museum, and Lebanese Emigrants Statue). Furthermore, there are 16 cafés and restaurants (Urbanista, Cortado, Oslo Icecream, Kahwet Leila, Le Petit Gris wine bar, Dar el Gemmayze, Arteen, Meats & Bread, Zimi, Sursock Resto, Marinella, Travolina, Le Chef Kehwet Leila, Bab Sharki, Loris, and Mayrig). There are also seven hotels and hostels (Talat Hostel, Al Nazih Hostel, Saifi Suites,

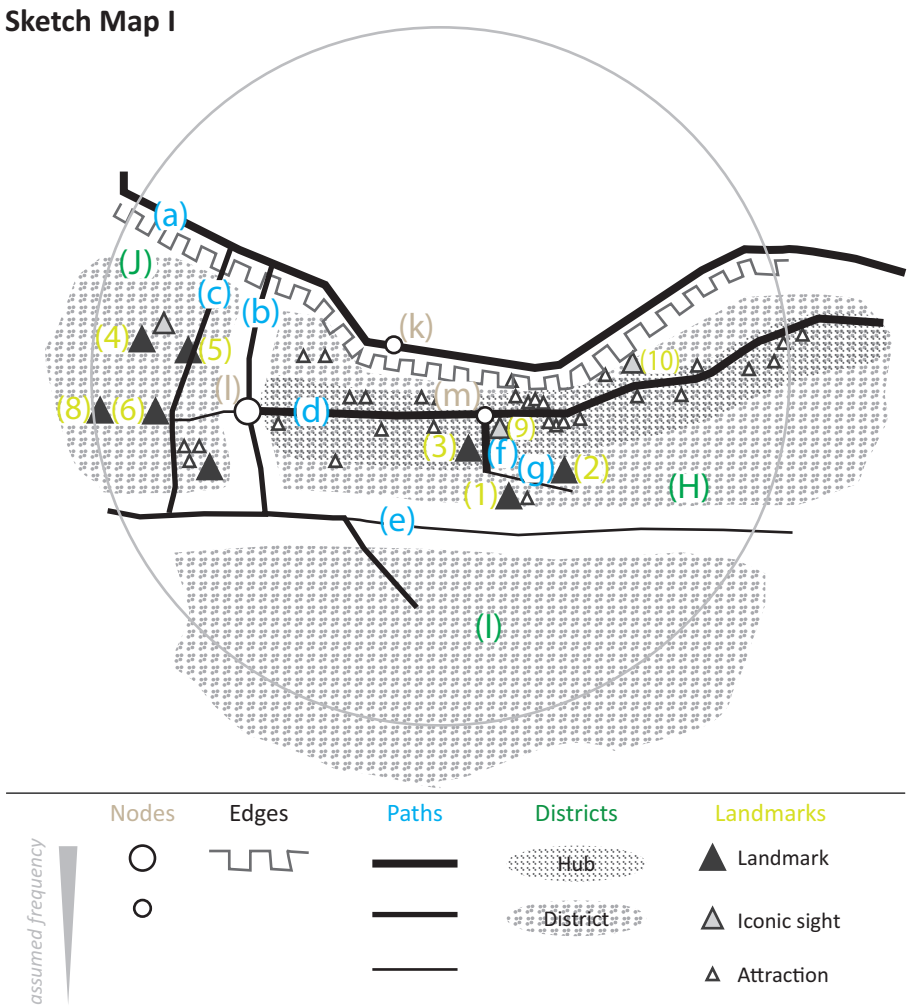

Figure 7. Sketch map I: Port blast area and tourist maps translated into a sketch map.

Saifi Urban Gardens, The Private Hotel, and The Grand Meshmosh Hotel), and nine shopping boutiques (Mra Hayak, Vanina, Plan B, Dehab Jewellery, Maison Rabih, L'artisan Liban, Cynthis Raffoul Jewelery, Nada Debs, Ateliers S). Moreover, the area contains six schools (Sacre Coeur College, Pigier School, Three Doctors School, La Sagress School, Beirut Annunciation School, and one is nameless).

Considering the high density of hostels and hotels, it is logical to conclude that tourists are major players in the area. High-priced restaurants and cafes indicate a middle and upper-class audience. The rich cultural and culinary program attracts a heterogeneous audience composed of students, working people, food and culture tourists, and locals.

The opening hours of the restaurants, cafés, boutiques, galleries and museums, and clubs match rush hours and flows. Restaurants and cafés are open from 8 am to 12 pm, stores from 9:30 am to 7 pm, museums from 9 am to 6 pm, and clubs open at 6 pm and close no later than 3 am. During the day, café culture is the primary activity; work meetings, a quick lunch, backgammon, and card games are each and all part of the daily routine of the neighborhood's attractions. The peak traffic period for pubs and restaurants is observed from early to late evening hours on each day of the week. Street life is dominated by people in the evening when the bars open their outdoor tables. The area offers a famous and beautiful urban retreat for community activities or romance in fast-paced and chaotic Beirut (Ham et al., 2019).

Upon closer investigation, it can be understood that the neighborhood also plays an important role in international politics, in that it houses the House of the European Union, the Australian, Swiss, and Argentine embassies, and the Ministry of Foreign Affairs. Furthermore, it is also home to the Electricité du Liban Tower, the Haddad Hospital, two Red Cross stations, nine pharmacies, 20 ATMs, and a post office.

The analysis of religious sites—knowing that Beirut's fragmentation is still dominated by religious and political affiliation (Davie, 1994)—reveals that the only three mosques (Al Omari, Amir Assaf, and Al Amine) are in the central district (j). The area of Gemmayze and Mar Mikhael is predominantly Christian, containing 11 of the 17 churches (Figure 8): St Elie Greek Catholic (4),

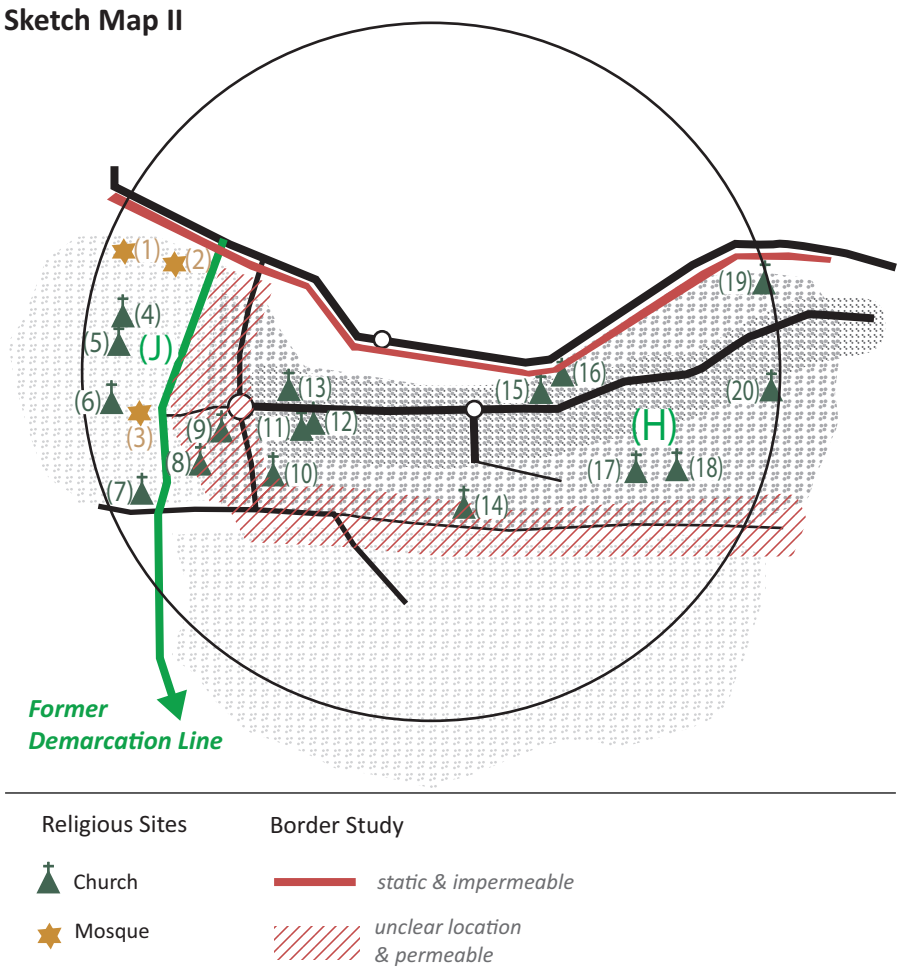

Figure 8. Sketch map II: Port blast area's religious sites and border study.

St George Orthodox (5), St George Maronite Cathedral (6), Mar Mansour (7), St. Elie—Church (8), Saint Elias and Saint Gregory the Armenian Catholic Cathedral (9), Mar Maroun (10), Santa (11), St Joseph (12), Sacre Coeur (13), St Nicolas Greek Orthodox (14), St Antoine Greek Catholic (15), St Antoine Maronite (16), St Joseph (17), St Georges (18), Mar Mikhael (19), and St Tresissios (20).

The overlay of the cognitive map with the former demarcation line shows an overlap with the identified border, marking the district's limits to the west. This may indicate that the former Green Line still functions as an intangible boundary. However, since Gemmayze and Mar Mikhael are known for their international audiences and are popular gathering places for locals, it can be assumed that the boundaries with neighboring districts are permeable, leading to the conclusion that the religious affiliation of the audience does not affect accessibility.

Nevertheless, limitations of the technique became visible when comparing the cognitive map with a sketch map of the area after the blast (Figure 9). The explosion in the port changed the physical environment of the area and therefore the cognitive map of the city's residents. The above analysis showed that the port was not part of the promoted sketch map, nor played a decisive role in defining the identity of the area before the blast. This demonstrates the power of white lies—the withheld data—in tourist maps. The Charles Helou Street functioned as an infrastructural boundary separating the neighborhood duo from the port. The blast invalidated the border function of Charles Helou Street and expanded and altered the cognitive map of the area. The contours of the neighborhood expanded to include the port, which is now inextricably linked to the site. In fact, the roadside fence of the Charles Helou Street is now an edge that connects the port to the neighborhood, like the balustrades in a theater that separate the audience seats from the auditorium. The shortcuts between Gourald Armenia Street and Charles Helou Street became high-frequency paths and nodes, even meeting points and places to view the silo from a distance (Figure 10.1).

The blast destroyed the physical landscape and with it the area's attractions and landmarks. "New" landmarks that now dominate the cognitive map of the public emerged: the destroyed silo and the warehouses of the port, heavily destroyed buildings such as the Electricité du Liban (Figure 10.2), and old colonial houses (Figure 10.3).

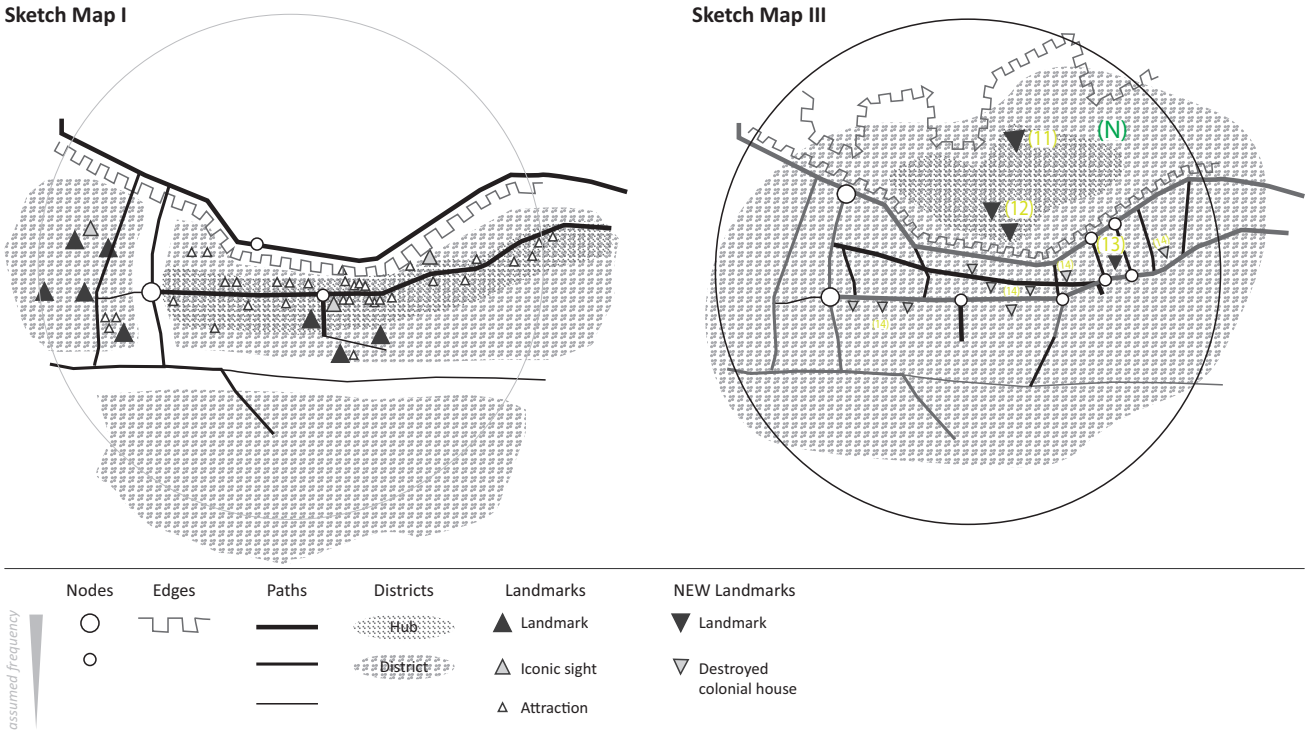

Figure 9. Comparison between sketch map I and III: Before (left) and after (right) the port blast.

5. Conclusion

In the past few decades, cities have become the transnational home for the majority of the world's population (Cuff et al., 2020). Urbanization and immigration flows are leading to new urban challenges. The spread of Covid-19 has exposed the negative effects of cross-border connectivity due to increased globalization. Stressful events on the local level, political upheavals, and unexpected disasters as presented in the case of Beirut can lead to a city-in-flux, characterized by rapid change and an unpredictable future. These complex urban challenges require interdisciplinary approaches by different agencies of spatial studies as well as the use of diverse media forms such as literature, photography, and film, all of which "[help] to make sense of the city and its people" (Cuff et al., 2020, p. 22).

This pilot study explores and opens up an unusual way of approaching and interpreting the city by reading it through a representational form: "the city in a map." The framework developed can help reveal zones, the possible pattern of fragmentation, the program and logic of the local from a distance in the absence of on-site observations. The features and structuring principles interpreted from the maps serve as indicators of spatial identity.

Figure 10. Photographs of the area after the blast: (1) Observing the silo from a distance, (2) Electricité du Liban, and (3) destroyed colonial houses.

In the last decades, maps have evolved from ceremonial and decorative images to tools for way-finding. However, even if maps promise cartographic objectivity and accuracy through their level of detail, one must not forget that they are only a reflection of reality. Modified, simplified, and transferred into a two-dimensional drawing, maps are a human-made product whose creators have subjectively decided what is to be shown on the map and what is not. This results in the aforementioned *white lies*, which can distort or embellish reality. Map deconstruction shows that white lies due to missing data in tourist maps lead to white lies in the promoted sketch map. This raises the question of what gets lost in the process of reading a city through a secondary resource since, for example, a tourist map mainly shows the places of commercial, industrial, and cultural consumption. Indeed, one must raise the issue of authorship and its influence on the map's agenda. Does it contain power knowledge and how does the urban design agenda, which can be market-, social-, and activism-based, intersect with the primarily market-based agenda of tourist maps?

Beirut's physical state has changed extremely in these 200 days. Describing the city in its three phases—city of political upheaval, infected city, and port blast city—is, of course, an oversimplification of a much more complex and multi-layered reality. Such changes dramatically alter a city's image, but at what level does it really affect a city's identity? The current challenge for Beirut is not only the physical reconstruction of the destroyed areas, but also the preservation of the identity, internal logic, and social fabric of the places. *I sincerely hope for responsible decision-making in the reconstruction process, as I wish nothing but the best for Beirut.*

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Conflict of Interests

The author declares no conflict of interests.

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Laura Simak, born in Mainz, Germany, 1989, currently works as an experience strategist focusing on destination development in a Berlin-based company. Following graduating in 2015 with a Bachelor of Arts in architecture from the University of Technology in Mainz, Laura has contributed as both a lecturer and research assistant at the Architectural Institute. Published in 2017 by Deutscher Kunstverlag, she was in charge of the cartographic production at METACULT, a three-year transnational research project studying the cultural transfer in architecture and urban development in the case of Strasbourg. In 2020, she majored in urban design at the Technische Universität in Berlin while finalizing her master's thesis in Beirut.

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Article

Redesigning Informal Beirut: Shaping the Sustainable Transformation Strategies

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Abstract
Lebanon is distinguished by its strategic geographical location among the Arab countries. Beirut, as the capital city and the major commercial and cultural centre of the country, is a point of interest for migrants. The region has witnessed many changes since the end of World War II, which have resulted in internal and external conflicts, migrations, the centralization of the country's economy, etc. Furthermore, the city has witnessed many periods of urbanization, destruction, reconstruction, and regeneration, which has contributed to the complex nature of the city's population and a blurring of the boundaries between settlements which are quite different in their natures. As a result, Beirut has become a home to mixed communities and societies of different origins and natures. The extensive inflow of migrants combined with economic crises has contributed to the appearance of informal settlements. They are located in different areas of the city and its surroundings, known as Greater Beirut. These settlements face various challenges, including spatial organization, socioeconomic standing, and environmental concerns. The current situation in Lebanon (resulting from the Covid-19 pandemic combined with the 4th of August 2020 blast in the port of Beirut) makes these challenges even more appalling. Some of the key issues discussed in this article are associated with the origin, current state, and prospects for improving the urban quality of these informal settlements considering their unplanned development and underused potentials. The article includes an inventory and speculates about the best possible strategies derived from three local interventions which are based on published reports. These examples represent rehabilitation and reconstruction activities in different cities in Lebanon. They can be applied to the specific situation of Beirut, given the variety of possible contexts there. The authors' initial intention is to deal with the possible scope of the physical improvement in these settlements which will lead to socioeconomic and environmental development and will also include possible ways of reinventing Beirut's urban structure.

Keywords
Beirut; complex city; immigrants; informal settlements; sustainable development; urban transformation

Issue
This article is part of the issue "Urbanisation, Crisis, and Resilience: The Multiple Dimensions of Urban Transformation in Beirut, Lebanon" edited by Liliane Buccianti-Barakat (Saint Joseph University) and Markus Hesse (University of Luxembourg).

1. Introduction

Lebanon is a very highly urbanized country, as nearly 90% of its population lives in urban areas and 65% of those are settled in dense urban agglomerations (UN-Habitat, 2009). Beirut, the capital of commerce and culture in Lebanon, has been widely viewed as an icon and also a symbol of continuous change. Over the decades, Beirut has demonstrated an almost infinite potential for regeneration and urban transition, as a consequence of colonialism and international commerce, internal and external conflicts, and various waves of immigration (Khalaf, 2006). The response to these factors, and particularly to the dynamics of urbanization and the growth of the

urban population, was in most cases informal, which contributed to the growth of unplanned urban areas. This process resulted in the creation of undersupported informal neighborhoods that can be differentiated by various structural, social, and economic dimensions from the formal part of the city. This phenomenon was especially visible in the second half of the 20th century when the political and socio-economic processes taking place both within Lebanon and in the entire Middle East resulted in increased immigration into the country of large groups of people seeking safety and better economic opportunities. This process resulted in the creation of various types of informal settlements, which differ according to the time period of their origin, social, ethnic, and religious structure, as well as the urban layout. What all of these structures had in common was the need for upgrading, rehabilitating, and reshaping their physical structure, which is considered to be a major issue and is, therefore, discussed in this article. Structural changes resulted in social, economic, and environmental improvements. These changes made these settlements more visible in the structure of the city and changed their reputation: They are no longer perceived as hidden, shameful areas but as places that are not different from the rest of the city of Beirut (Fawaz & Peillen, 2003).

This article focuses on the challenges to the sustainable transformation of informal settlements in Greater Beirut where these settlements are located. Within the municipal boundaries of the city, the settlements represent a minority, while outside they stand as a majority (see Figure 1). The issues of reshaping their informal urban structure as well as reconnecting them to the city area are of primary interest to the authors. Although upgrading informal settlements is a widely recognized phenomenon and many studies and interventions have been addressed internationally, the strategies picked for safeguarding sustainable transformation are based on local references and not on international ones. Due to its possible social, economic, and physical similarities with the context of the case study, which are discussed in Section 4.3, and since there is a lack of scientific sources on this matter, the authors speculate about the best possible strategies for improving the urban quality of these informal settlements and consider this as a starting point to generate considerable research interest for the future.

The scientific methodology applied in this study relies on literature review and on-site observations. The analysis is based on qualitative rather than quantitative data, as there is not much definite information available in terms of statistics. Also, the field of

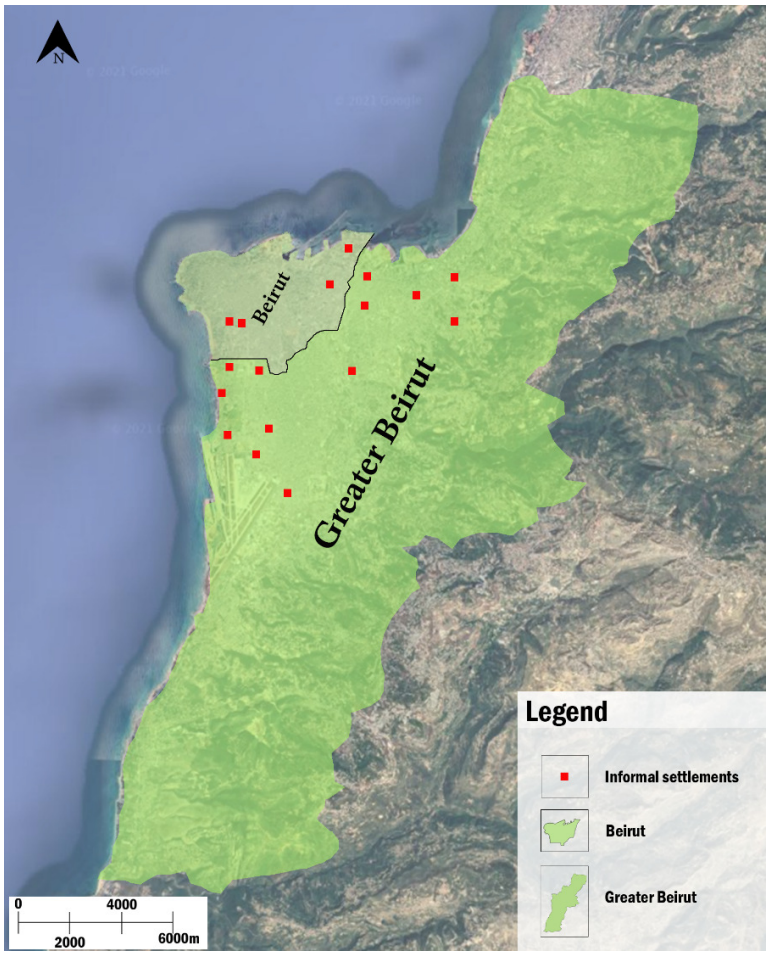

Figure 1. Distribution of informal settlements in the geographical boundaries of Beirut and Greater Beirut.

research discussed cannot be measured by numbers because the main interest is oriented towards the physical development of informal settlements. The authors relied on presenting programs and strategies based on three well-known cases at the domestic level, aimed at upgrading poor urban areas. The results of these cases were addressed and evaluated based on three criteria (housing, neighborhood, and individual; see Table 2), which were in turn based on published reports, and research conducted on-site by organizing in-person visits to these cases.

The article begins with a discussion of informal urbanism and urban development as an introduction to the topic and highlights what is known and unknown in the context of informality. The next step is a brief presentation of the development of the city through the history, nature, location, and urban forms of informal settlements in Greater Beirut. Next, three transformative projects that have been carried out in other Lebanese cities are discussed and analysed. The last part, which concludes with the main findings and questions about challenges and policies for the application of urban design solutions for informal settlements, allows for the opening of a new field for interdisciplinary research in the future.

2. Informal Urbanism and Urban Development

In the early 1970s, the debate about informality began with the advent of the concept of the "informal sector." This occurred as a way to describe the migration of workers to cities in the 1950s and 1960s (Roy & AlSayyad, 2004), which accompanied the phenomena of industrialization and urbanization. Later on, by the late 1970s, Moser described the informal sector as the "urban poor," a term associated with people living in slums or informal settlements (Moser & Peake, 1994). At the same time, informal urbanism has been recognized as one of the many existing legitimate processes that contribute to city creation (Boano & Astolfo, 2016). It is also understood that urban informality can range from informal settlements to street vending and informal transportation (Kamalipour & Peimani, 2020). In the context of informal settlements, it is estimated that, at present, more than one billion people live in these settlements, and this number is expected to double by 2030 (UN-Habitat, 2006). Regarding informal economy, about two-thirds of the working population of the world are expected to participate in the informal sector activities by 2030 (Neuwirth, 2012). The informal economy includes, among others, activities such as street vending and informal transport; these provide job opportunities, generate income for the urban poor, and bridge formal urban development gaps by negotiating space and visibility in the public sphere. As a result, Roy (2015) described urban informality as a specific mode of production and organization of space. It acts as a hub for managing the pressing challenge of poverty and thus becomes an integral part of providing sustainable livelihoods.

It is crucial to develop a better understanding of how informal and formal urban spaces can be judged based on different forms and systems which can be variously conceived as territorial formation (slum/city), categories of particular economic groups (informal and formal labour), forms of organization (structured/unstructured), and as modes of city manifestations (formal and informal knowledge and practices; Waibel & McFarlane, 2012). These are located in the Global South where this phenomenon is dominant, taking into account cases such as Kibera (Nairobi, Kenya), Medellin (Colombia), Rocinha (Rio de Janeiro, Brazil), Dharavi (Mumbai, India), Dulce Nombre de Jesús de Petare (Caracas, Venezuela), Khayelitsha (Cape Town, South Africa), Garbage City (Cairo, Egypt), and Al-Sabeel (Jeddah, Saudi Arabia). However, each of them is different, as is the political and social situation in these places. Obtaining knowledge concerning the successful activities in these places is important, but, at the same time, it shows that each of them has a very individual character. This proves that no fixed paradigm of urban change can be derived from the analysis of these cases, although the general lessons for Beirut can be defined.

Based on the existing literature, the authors argue that informal urban development should be regarded as a common practice. In this respect, we present the perspectives of some scholars and researchers dealing with this. For instance, MacFarlane, who has worked extensively with a particular focus on the Global South, has reimagined informality as a formal practice. He pointed out the case of the Mumbai floods in 2005, which highlighted the importance of illegal practices of the state and developers in causing the disaster (Waibel & McFarlane, 2012). Furthermore, Lombard discussed the phenomenon of "beds in sheds" in the UK that was presented by the media and the government as a cause of immigration. Lombard investigated the case and questioned whether informality is a structure or an agency (Lombard, 2019). Also, Sarmiento and Tilly (2018) discussed the case of immigrants from Latin America in the US, suggesting useful lessons for reinventing urban governance. This was intended to increase our level of understanding concerning the interrelations of informal actors with governance, "understanding how, in the current period of development, displacement, and disinvestment, workers, and settlers have succeeded in winning recognition for their rights of access and possession despite breaching laws and regulations" (Sarmiento & Tilly, 2018, p. 200). Although the article is devoted to issues that are mainly oriented toward the physical improvement of informal settlements, the authors are aware that this activity occurred due to the existence of effective government actions and policies.

3. Developing Beirut: An Interplay Between Planned and Informal Interventions

Understanding the appearance of slums in Beirut and its suburbs requires an overview of the previous

transformations that progressed in Beirut, which can provide an understanding and a clear image of the fundamental developments that have contributed to the formulation of the city structure from the Ottoman Empire until the present. Particular attention has been directed toward those transformations that have occurred in the second half of the 20th century.

3.1. Origins of Modern Urban Planning for Beirut

In 1887, the Ottoman authorities recognized Beirut's role and named it the capital of a new Ottoman *wilayat*. The new face of the city's urban modernization was established within a wider framework inspired by city planning concepts drawn from the colonial period or the reforms of the Ottoman Empire. Since the end of the 19th century, the Lebanese government has added fresh perspectives to urban transformations in Beirut and its suburbs (Traboulsi, 2012). From the late 18th century until World War I, various projects were established. A well-known and widely recognized example is associated with the development of Burj Square (1878) by the municipality of Beirut, which is considered to be the main meeting place in the city, and the construction of the Ottoman Clock Tower (1898), showing Istanbul time. Another one is the modernization of the "souk" area in Beirut: This was announced in 1915, in addition to the design project of the surrounding areas of the main port of the city based on the concept of an orthogonal grid principle network. At this time, the names of the streets were inspired by the names of the well-known generals, heroes of World War I: Foch, Wigan, and Allenby. The buildings for national institutions like the municipality or the parliament buildings were developed and their architecture was inspired by the new Levantine style. This was established after the region entered the modern era and fell under the influence of Europe in the 19th century, holding the features of a Neo-Mamluk overtone and a Neo-Islamic style. Plans for these developments were also frequently modified. As a result, a new scale of development appeared, which was also spurred by French colonization after the collapse of the Ottoman Empire (Traboulsi, 2012).

In between the world wars, French colonial cities became a field of experimentation for planners. In Beirut, the "Danger Plan" was the first phase of the development of the city centre (1932). This plan was known as Société des Plans Regulateurs des Villes or Danger Frères et Fils. The plan dealt not only with downtown Beirut but also with the Beirut Municipality in its entirety. The project was not fully implemented, except for a few sections of lanes and the circular boulevard (see Figure 2). The urban planning approach advocated by the Danger Plan allowed for the strengthening of the hygienic approach to urban space. This began the debate about the relationship between design and regulations (Hanna, 2020).

Between 1941 and 1943, the French planner Michel Ecochard prepared a master plan aimed at developing Beirut and its suburbs, known as the First Ecochard Plan. The plan introduced the principle of modern planning in the revitalization of the urban structure of the city. The goal was to expand the centre of the city and modernize its outskirts. In cooperation with the state and key actors (see Figure 3) another master plan was developed by the same planner in 1963, which is known

Figure 2. The development, embellishment, and extension plan of Beirut by SPRV, Cabinet Danger Frères et Fils, 1932. Source: Hanna (2020, p. 40).

as the Second Ecochard Plan (see Figure 4; Rowe & Sarkis, 1998). These two efforts were never fully implemented due to the pressure applied by the political-religious sector in the country, that wished for and succeeded in obtaining "fewer restrictions and more scope for exploitation" (Larkin, 2010, p. 416).

At the beginning of the 1990s the Lebanese government worked on a master plan known by the acronym "Solidere's" which aimed at rebuilding downtown Beirut and linking it to the other parts of the city, bearing in mind all of the issues emerging after the massive destruction caused by the civil war. However, these plans were not completed and partially failed to build a vital urban fabric. These achievements were described as a response to what the private political-religious sector provided, namely the control of urban spaces through only focusing on developing the physical infrastructure without considering the public benefits (Larkin, 2010).

3.2. The Rise of the Informal Settlements

Refugee camps are one of the oldest types of informal settlements that appeared in Beirut. These camps were organized for Armenian, Syriac, Palestinian, and Kurdish refugees and located within the municipal limits of the city and its environs. At the same time, in the context of the country's industrialization and urbanization movement, migrants also arrived from the south of the country and the Bekaa Valley, where destitution and uncertainty increased migration pressure. These informal settlements were mainly concentrated around industrial zones. The outbreak of the civil war, at the beginning of 1975, caused a mass evacuation of the city and the settlement of its suburbs.

The informal housing sector has consistently filled the gaps left by formal state-led planning, focusing primarily on land use and zoning rules that were adopted and applied by the Directorate General of Urban Planning. The lack of affordable housing resulting from low-income housing programs is helping to perpetuate the development of informal housing, a state of affairs which continues to this day. The structure of informal settlements in Beirut varies according to their different patterns, which are identified in terms of their appearance and content (see Section 4.3).

3.3. The Need for Intervention

Lebanon had a population of about 6.8 million in 2020 (Central Administration of Statistics, 2021). The current population of its capital, Beirut, includes about 2.2 million inhabitants. At the same time, approximately

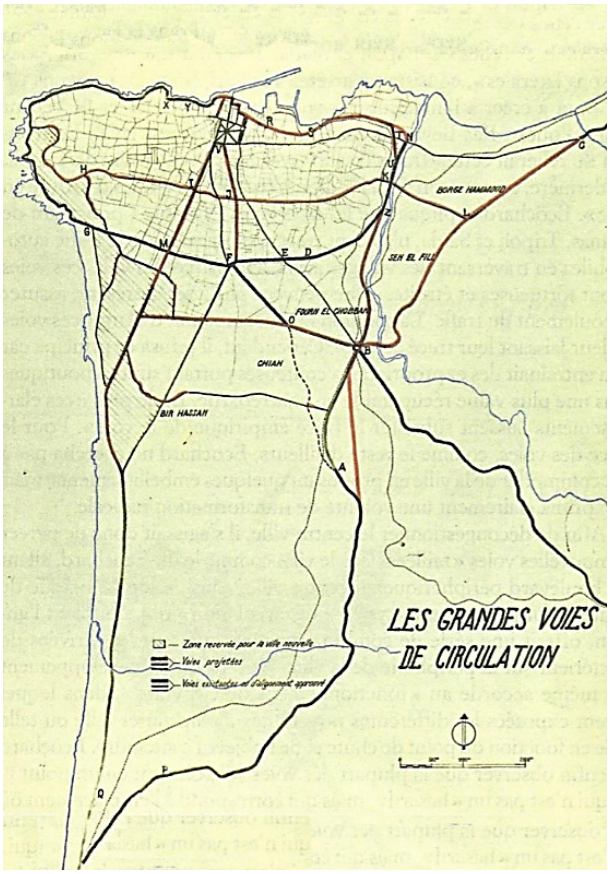

Figure 3. Major traffic lanes and zoning for Beirut and its suburbs by Michel Ecochard, 1943. Source: Hanna (2020, p. 44).

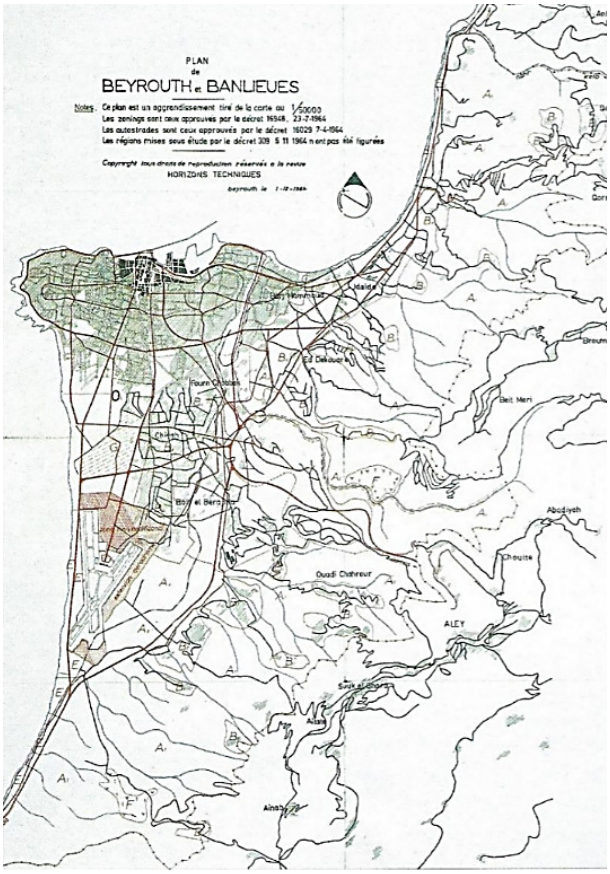

Figure 4. Plan of Beirut and its suburbs by Michel Ecochard, 1963. Source: Hanna (2020, p. 52).

1.5 million Syrian refugees live in the country, and 202,000 Syrians live in the Beirut metropolitan area. The massive inflow of these refugees was caused by the outbreak of the Syrian war in 2011, which forced the population to migrate and large groups arrived in Lebanon, most of them heading to urban areas, where they believed opportunities and services were available. Refugees are mainly hosted by informal settlements, firstly because they are unable to pay the high rents in the city and secondly because they have relatives living in these settlements. Furthermore, the country has previously received various waves of refugees from Palestine and Iraq as major sources of refugees and other nationalities as minor sources (UNHCR, 2020). The lack of a policy to provide camps for refugees and organize their affairs has led to their random distribution throughout Lebanon and their concentration in urban areas, which has also contributed to a general decline in the quality of services and to the weak infrastructure available in these areas (Forster, 2021). This has come about due to the fact that the Lebanese planning system revolves around a core issue that focuses on addressing urban fragmentation. The poor level of local planning has resulted in an inability to allocate the urban area for new residents. As a result of the civil war (1970–1990), the service systems have visibly deteriorated and their inadequacies have not yet been taken seriously. The absence of strategic planning and the poor scope of the municipal services, in addition to the dominance of private transport as a result of the lack of a public transport service, contributed to the weakening of the urban structure and negatively affected the environment and the health of urban residents (UN-Habitat, 2014).

In addition, Lebanon faced a wide range of challenges in the year of 2020, which threatened the stability and security of the population and led to the deterioration of its urban environments. These crises included a massive explosion in the port of Beirut on the 4th of August 2020, which led to the death of 214 people and the destruction of a large part of the city; a major economic collapse that followed this event and contributed to the rise in product prices and a collapse in the value of the currency; and, finally, the arrival of the Covid-19 pandemic made things even worse (Human Rights Watch, 2021). Furthermore, it should be noted that rapid urbanization has also contributed to the creation of spatial, social, economic, and environmental challenges, forcing residents and refugees to live in crowded urban environments where the standard of living is very low and classified as temporary (Office for the Coordination of Humanitarian Affairs, 2020).

4. Informal Settlements in Greater Beirut: Origin and Typology

Poor urban areas may also be found in most cities in Lebanon. Informal settlements are also distributed in the capital city of Beirut and its suburbs, especially in the southern and northeast parts of the city (see Figure 5). Concerning this phenomenon, the term "informal settlements" was used for the first time in the Lebanon Crisis Response Plan, between 2017 and 2020. It referred to poor and illegal urban environments, which were established without the intervention or support of the official Lebanese authorities and in response to the needs of the population for temporary shelter. These settlements were created as a result of humanitarian, economic, and political pressure which called for a rapid solution to the emerging problems of a lack of shelter for the incoming migrants (Government of Lebanon & UN, 2019). In the subsequent parts of this section, the authors present the characteristics (definitions, demographic typology, urban forms, and location) of the informal settlements in Beirut. However, it should be noted that these characteristics also apply to other cases in Lebanon. The chosen reference projects (Section 5) were characterized by the same conditions before their transformation occurred.

4.1. Definition

Defining informal settlements in the city of Beirut is a complex matter. however, two definitions have been addressed in this study. The first definition specifies informal settlements as a complex urban area, one which does not have a fixed context due to the many factors related either to its history of establishment, violations beyond building and construction codes, or due to its continuous dynamic transformation and spontaneous growth in response to different circumstances. The authors are adopting this definition for this article.

The second definition describes these settlements as being obviously distinguished from other parts of the city based on their urban morphology and appearance. Often labelled by the media and the general public as "crises of misery," they are well known for the absence of safety and stability, and their residents vary between locals and refugees with low-income levels, in addition to the lack of basic services that are provided in other urban spaces.

4.2. Demographical Typology

The only type of classification that can be provided in the selected case study depends on the demographics of these informal settlements. The informal housing complexes in the Beirut metropolitan area may be classified into three different groups (see Figure 5):

- International refugee camp/low-income housing areas for refugees;
- Housing areas for rural-urban migrants;
- Squatter settlements, developed during the civil war.

The first informal settlements that appeared in Beirut in the 1920s were camps occupied by Armenian, Syrian, Kurdish, and Palestinian refugees. These settlements

were built between 1920 and 1955 in the east of Beirut, specifically in Quarantina and Bourj Hammoud. The growth of these settlements occurred with the arrival of Armenian refugees to the port of Beirut and the establishment of the first well-known Medawar camp (Migliorino, 2008). Currently, these camps are not visible or recognized in the city, as is the case with the Syrian and Palestinian camps, which may be considered dominant within the urban fabric.

After that, rural-to-urban migration (1950–1965) occurred in conjunction with industrialization and urbanization phenomena. Various waves of refugees travelled from the south and north of Lebanon to the city of Beirut and its suburbs, due to poverty and insecurity issues. The migrants benefited from the reality of the urban environment of the city in that period, which provided an opportunity for unlimited urban expansion, especially in the coastal areas and the surrounding hills (Costello, 1977). Therefore, the city faced the development of informal growth, which was not in line with building laws and was followed by land investment.

During the civil war, squatter settlements were established in several parts of the city, where refugees occupied vacant buildings or entire neighborhoods. Also, as a result of the Israeli military attacks in 1978 and 1982, the transformation of the southern suburbs of the capital into massive informal poor settlements occurred which became a home for many Palestinians.

As a result of the outbreak of the Syrian war in 2011, Palestinian refugee camps saw a clear growth in population density. This was caused by the displacement of large groups of Syrians to Lebanon. These movements of people were mainly oriented toward urban areas and opted to populate the informal settlements in the absence of the provision of temporary camps (see Table 1 and Figure 5).

4.3. Characteristics: Urban Form and Location

Within this study, the characteristics of the urban form of informal settlements located in Greater Beirut, based on published reports are discussed. These form a part of the urban fabric located within the municipality of Beirut as a minority of the dwellings and spread to the peripheries as the majority. These settlements have physical attributes different from the formal ones in the city, which deserve to be valued and understood, in order to present the appropriate sustainable transformation strategies, aimed at realistic improvement.

Despite the heterogeneity and spontaneity that describe the development of the urban structure of these settlements, some common characteristics may be identified in terms of location and typography, urban infrastructure, and types of buildings:

- *Location and Typography*: As discussed above, each case shapes its character in terms of form and spatial organization. The urban forms of these settlements may be categorized according to criteria related to their appearance and origins. Their types may be determined according to their typography and location, which include waterfronts, escarpments, and easements.
  - Waterfronts: Settlements such as Jnah and Hay Sellom (see Figure 5) are located along the coast of the Mediterranean Sea and partially on the Ghadir River, which flows into the Mediterranean Sea south of Beirut, under Beirut International Airport. This waterbody completely dries up in the summer and is believed to be the most polluted river in Beirut. These types of locations are unsafe due to the high risk of flooding and hurricanes, especially in the winter.
  - Escarpments: Settlements located on a large rocky hill, as is the case of Roueissat (see Figure 5). These are subject to strong winds and water penetration from rain during the winter season. The buildings are built around curved streets and connected by long staircases and narrow slopes.
  - Easements: Settlements located along with major barriers to urban infrastructure, as is the case of the Chatila refugee camp, bounded by two other settlements. These are located close to the runways of the Rafic Hariri International Airport (e.g., Borj el Brajneh and Hay Sellom; see Figure 5).

- *Urban Infrastructure*: In general, the urban infrastructure in these informal settlements is characterized by poor structural systems and spatial

Table 1. Summarizing the appearance of the informal settlement.

Typology of Informal Settlements	Period	Origin	Event
1. Refugees	1920–1955; 2011	Armenian, Palestinian, Kurds, and Syrian	Exterior war and conflicts
2. Rural-Urban Migration	1950–1960	Mount Lebanon and North and South Lebanon	Urbanization and industrialization
3. Squatter Settlements	1970–1990; 1978; 1982	Lebanese	Civil war and Israeli invasion

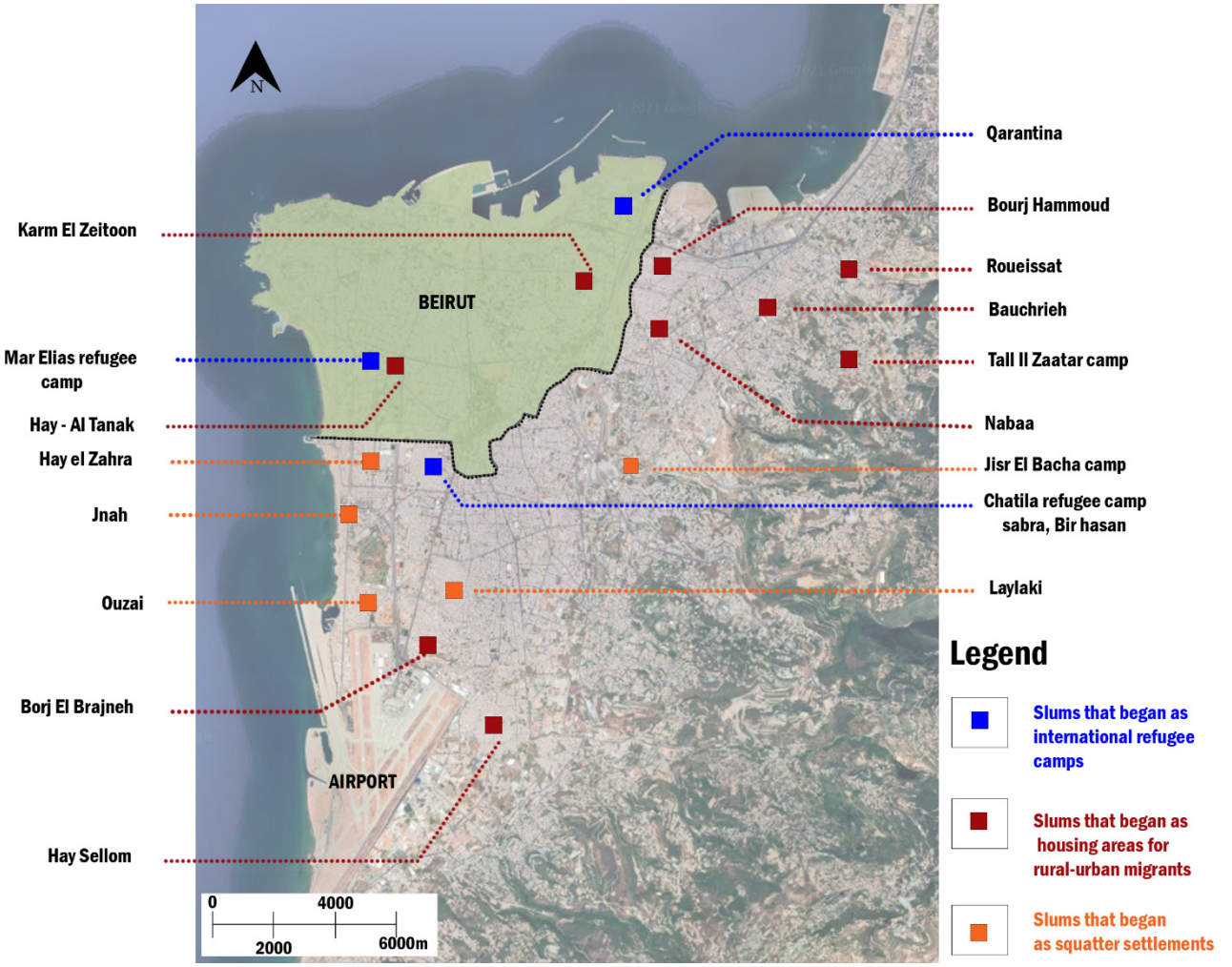

Figure 5. Typology of informal settlements in the metropolitan area of Beirut as a result of their different nature and origin.

arrangements, within which particular buildings are barely separated by narrow paths and sinuous alleys that are often unpaved. Natural lighting and ventilation are not available in sufficient quantity. Public areas and green spaces are also inadequate. The inhabitants travel using motorcycles and cars. Pedestrians flow through the inner barrier lanes, known as "souks," which reflect the vivid image of the spaces, which refers to the commercial activities that take place around these lanes.

- *Types of Buildings*: Concerning buildings, obvious differences in the type, density, and levels of organization were found among them. The homes in these informal settlements vary between small family houses, small buildings, multi-story buildings, and shacks. The scale and features of the buildings indicate their informal nature and distinguish them from other physical urban environments in the city that are considered to be formal. Services and their uses vary in these settlements, which may be characterized in terms of legal, illegal, or completely absent, in particular water and electricity networks.

The living spaces of the dwellers vary according to the density of the population in the settlement. These are characterized by the accumulation of small rooms that are spontaneously built in both directions: horizontally and vertically. Additionally, another incremental growth of additional spaces is visible, which is a small-scale additional living space, attached to the main structure, such as terraces and balconies. The quality of construction materials ranges from reinforced concrete, concrete blocks, steel, and metal corrugated sheets. The material varies with geographical location, culture, economy, and density. These practices, which were based on the needs of the inhabitants in the absence of professional planning, contributed to the appearance of chaos and the disorganized structure in terms of forms and accessibility.

5. Urban Transformations: Reference Projects at the Domestic Level

This section discusses three interventions (poor urban area transformation) that have occurred on a large scale, particularly in Northern and Southern Lebanon (upgrading Palestinian refugees camps, reconstruction of the

Nahr El-Bared refugee camp, and the rehabilitation of the old Saida residential neighborhood and Haddadine Tripoli). These projects were selected based on proximate conditions and similarities in the characteristics and nature of the ones in Beirut (Section 4). In this sense, certain solutions and initiatives to transform these settlements should be taken carefully to respond to these particular circumstances, which makes these initiatives different from the international projects presented in Section 2.

Furthermore, these interventions are considered to be applicable references and resources, which have proven to be a real success in terms of developing refugee camps and poor urban areas, thus creating potential at the social, economic, and environmental levels. Therefore, they are chosen based on their applicability and not on a systematic analysis of informality (this should be performed in subsequent research). These implemented changes respond to the special needs and challenges that arise from different circumstances and origins.

5.1. Upgrading Activities for Palestinian Refugee Camps in Lebanon: UN Relief and Works Agency

This project aims to improve the conditions of Palestinian camps in Lebanon and to support their residents, especially in terms of housing, by providing decent and safe housing to the vulnerable population. The interventions implemented by the organization includes three camps located in the Beirut metropolitan area: Burj Al-Barajneh, Shatila, and Mar Elias. Many of these upgrades are not visible as the UN Relief and Works Agency faced funding problems, which led to a reduction of their activities to a minimum. The operations were based on building transformations which may be addressed as follows: restoration, adaptation, refurbishment, and extension.

The elaborate strategies developed have achieved many immediate results. For instance, renovating or constructing sanitation facilities has improved household hygiene conditions. Improvements in roof quality, window flashing, or guttering in buildings have reduced the negative impact of the dwelling space on the health of the dwellers (reducing humidity, water droplets). Improvements in home partitions, especially for crowded homes, have provided more space and more comfort for families. The repair of the water and electricity networks has allowed the required amount of water to be delivered to homes. Restructuring the electricity network provided the energy required for the neighborhood, which contributed to improving the level of safety at night. The work required to provide internal ventilation and a lighting system was carried out through the provision of appropriate windows that ensure comfort and positively affect user behaviour. Repairing the main entrances has improved security and provided privacy to the residents.

The various strategies applied have also had long-term effects, such as strengthening the concept of mutual support between communities, which leads to the development of a sense of belonging and unity. They have also encouraged residents to distribute their income within the sectors that give them back benefits, strengthen businesses at the local level, and invest in education and health care services. These activities have led to a reduction in the sources of stress associated with urban environmental degradation and the strengthening of ties within the neighborhood through the exchange of services and the sharing of spaces.

The interventions succeeded in providing the potential benefits for residents. These capitalized on the presence of large numbers of families in this urban environment. Decision-makers addressed the need to construct new buildings in response to community needs; this accompanied the adoption of the principle of the reconstruction and maintenance of existing structures. To date, 504 buildings have been refitted in nine different camps and informal settlements for Palestinian refugees in the country (Habitat For Humanity Great Britain, 2016).

5.2. Reconstruction of the Nahr El-Bared Refugee Camp

The camp is located in the north of Lebanon, near the Mediterranean Sea. The reconstruction operation of the camp occurred in 2011 after 95% of it was destroyed between May and September 2007 due to confrontations between a rebel group called Fatah al-Islam and the Lebanese Armed Forces. During these conflicts, homes, commercial services, mosques, local health clinics, schools, and infrastructure networks were severely damaged or destroyed (see Figure 6). Approximately 26,000 Palestinian refugees have been forced to leave their homes. The role of the community was recognized, as they actively participated in the design process, which took place in a series of eight construction phases.

The social and urban fabrics were considered to be essential elements in this project at each stage in order to achieve continuity and satisfaction from start to finish. The strategies developed worked to change the infrastructure network of the camp, and provide innovative and efficient services to individuals and the neighborhood as a cohesive technical structure (running water networks, potable water, and sanitation). The housing units were improved as compared to their previous configurations and this led to the provision of adequate natural ventilation. More public spaces were provided around the buildings and an architectural system consisting of extendable structures was introduced based on the needs of residents. These structures were built in response to building codes and area requirements (maximum of four-story buildings; Frearson, 2013). The reconstruction of public buildings in the same neighborhood was based on the pattern of the original structure, although improvements were made in the common areas and infrastructure (see Figure 6).

The local community took an active role in decision making and this was implemented through discussion

Figure 6. Nahr El-Bared refugee camp: Before and after reconstruction. Source: Courtesy of Aga Khan Awards for Architects.

and interaction in public places. This was the factor that gave the transformation operation a sophisticated and modern pattern (Aga Khan Development Network, 2011). Work began with practical coordination and communication to avoid any controversy; this was undertaken through regular meetings with the Reconstruction Committee and community representatives. An important part of this cooperation was the fostering of new working relationships with the Lebanese community, the government, and various local and international stakeholders.

As presented above, the settlement was redesigned from scratch and went through a reconstruction operation without upgrading it, since it was completely destroyed. However, the elaborate strategies used produced comprehensive results, which contributed to the restoration of the camp. Based on this outcome, similar operations could play a crucial role in the future and become the backbone of a movement to inspire transformation programs for informal settlements or poor urban structures in the case of Beirut, in full coordination and agreement with the community and the government.

5.3. Rehabilitation of the Old Saida Residential Neighborhood and Haddadine Tripoli

The projects were led by two international organizations: UN-Habitat and UNICEF. The neighborhoods are located in two different parts of the country, one in the north and one in the south. Both accommodate locals and refugees living in inappropriate conditions, with a low income, lack of opportunities, and a lack of basic services. These factors have contributed to the spread of the poverty crisis in these urban spaces. These two projects have proved that upgrade activity results in gentrification. Furthermore, innovative concepts have been used in these interventions, which include focusing on a parallel approach: improving the physical structure and well-being of residents, while at the same time organizing activities and workshops aimed at raising users' awareness about this improvement (UN-Habitat, 2020), which is intended to directly assist in alleviating poor housing conditions for vulnerable families, locals, and refugees.

The team in charge conducted a detailed field survey in order to identify the most damaged buildings and housing units that required immediate intervention. The implementation process included the careful renovation of the residents' homes, improving sanitation, and the provision of drinking water. This resulted in the

Figure 7. Souks in the old Saida neighborhood: Social interaction between vendors and different age groups of buyers.

protection of the dignity of their users and also in the development of respect for the historical image of the neighbourhod. These two concepts have contributed to creating a sense of ownership among residents toward these neighborhoods after their marginalization for a long period. In addition to preserving historic buildings in these neighborhoods and protecting them from physical damage or destruction, the team responsible worked to develop the local alleys. These proved capable of increasing accessibility in the entire neighborhood by renovating old souks and saving their historical pattern, and also securing livelihood opportunities in the local markets (see Figure 7). An important part of this activity was to strengthen the critical role of cultural heritage by training residents in different neighborhoods. This was brought about by focusing on cooperation with both municipalities to increase the sustainability awareness program of the project and to encourage youth to participate in restoration work (UN-Habitat, 2019).

UN-Habitat is using its previous experience in both cases to identify and renovate the damaged structure in the historic Beirut neighborhoods, as a result of the port explosion. In addition to humanitarian relief, the main objective was to prevent any inevitable displacement of people, which could eventually change the original social fabric of the city or leave it deserted (UN-Habitat, 2020). It may be concluded that the success of the interventions was expected and its impact on the neighborhood was confirmed.

6. Discussion and Conclusions

The elaborate strategies followed in the interventions presented above succeeded in meeting both the needs of the inhabitants and the physical environment. The physical transformation of the spaces relied on a combination of urban renewal and rehabilitation concepts that were achieved through the completion of repair, renovation, extension, and adaptation. The interventions brought about a new perspective towards transforming informal settlements in Lebanon. Key actors, such as stakeholders, have succeeded in understanding the role of urban design and architecture in solving complex problems.

A factor that contributed to the creation of a sense of ownership and also to the strengthening of a sense of solidarity between communities was associated with the development of a bottom-up approach that started with inviting residents to participate in the design process and making decisions. Advanced studies, in collaboration with various experts, have allowed for the development of site-specific and community-accepted transformation concepts.

It appears that the physical improvement that resulted in the adoption of effective urban design and architecture tools have contributed to the creation of the mature character of these neighborhoods. This has led to the creation of dynamic urban borders and a healthy environment. This phenomenon is obvious in the case of the second project (Nahr El-Bared refugee camp, Section 5.2). For example, the diverse uses of the spaces around footpaths in narrow alleys to create dynamic social activities, particularly in the commercial sector, has allowed for the modernization and development of local knowledge. These concepts provide decent areas for various activities that were promoted as offering a set of advantages and opportunities, thereby making neighborhoods more popular and safe for tourism promotion. This is most evident in the case of the residential neighborhoods of old Saida.

The authors have analysed the results of the local intervention from their perspective and separated these outcomes into three groups: housing outcomes (HO), neighborhood outcomes (NO), and individual outcomes (IO). Each group concerns different measurements that concentrate on the physical transformation and its effect on users and their relationship with the city. For instance, the criteria addressed in HO are aimed at evaluating the results from the housing sector level (assets, infrastructure materials, housing site investments, location, household size). The criteria in NO are intended to evaluate the results from the overall neighborhood level (transport, infrastructure service, safety, mobility, integration into the formal city). The criteria in IO are intended to evaluate the outcomes concerning individuals living in these settlements (income, labour market, human capital, health, well-being; see Table 2).

Within this article, the authors have suggested specific aspects that should be taken into account for future interventions in dealing with the settlements presented in Beirut and its suburbs. These recommendations are summarized as promoting further training and the sharing of professional experience in order to empower organizational and technological capabilities. It is crucial to focus on strengthening administrative and technical initiatives, in terms of resources and equipment, which allow for the development of high-quality urban environments. It is also important to ensure financial sustainability by providing and promoting services that are responsive to local needs. Not without significance is the development of humanitarian capabilities, which will contribute to finding a solution to various crises and also lead to increased efficiency in the processes of establishing and implementing development projects. Operating with transparency and objectivity results in the participation of efficient stakeholders through building bonds and strengthening relationships for further development, the promotion of sustainable mobility, and the creation of a healthier environment and community.

It may also be concluded that it is crucial to apply urban design solutions to informal settlements compatible with vital social and economic factors. These solutions could be widely applied in the case of Beirut. There are still questions revolving around the challenges of applying the suggested solutions. Are these issues a part of urban policy related to informal settlements? Should the policy on upgrading informal settlements

Table 2. Evaluation of the outcome of local intervention based on different measurements.

Intervention Outcomes (HO, NO, IO)					
CRITERIA	HO	CRITERIA	NO	CRITERIA	IO
Assets	Value of dwelling (condition and size)	Transport	Availability of transport links between the settlement and other parts of the city	Income	Household income
Infrastructure Material	Access to safe water, sanitation, electricity connection, material, and area of the dwelling	Infrastructure Service	Availability of street pavement lighting, garbage collection, health centres, clinics, police stations, public spaces, green areas, and public schools	Labour Market	Number of households working in the formal/informal sector
Housing Site Investments	Sources of funds for the project	Safety	Security in the neighborhood, child safety, level of crime, robberies, and violence	Human Capital	Higher education and school enrollment
Location	Vulnerability to natural disasters	Mobility	Safety of pedestrians (young and old) and inner transportation (cars, bicycles, motorcycles)	Health	Diseases and infection, cognitive development
Household Size	Providing or expanding living spaces according to the number of dwellers in every apartment	Integration Into the Formal City	Levels of services available in the settlements demanded by neighborhood	Well-Being	Level of satisfaction

be complemented? What are the new dimensions that should be associated with urban design? The last question is based on the debates presented in Section 2: Does viewing informality as an acceptable practice bring about a better understanding of the roles of diverse actors in producing and responding to it?

In addition to these conclusions, the analysis of the case of Beirut can be used to add to the discussions concerning the issues associated with the concept of "clientelism," which provides benefits and services to the poor in exchange for political support. This is based on the relationship between informal politics, planning, and informal urban growth. This concept may also attract the attention of researchers in the future. Based on its realities, the question arises as to whether informality—in the case of Lebanon—is a product of political parties and whether the policy of developing and transforming the informal settlements is based on increasing the influence of these parties in certain geographical areas and strengthening the bonds of patronage and subordination. In light of this concept, the informal settlements appeared to be a source of pressure used by these parties to impose their influence on the state (territorial management). This was demonstrated during the Covid-19 pandemic when the role of the parties in securing support (i.e., ensuring hospitals and isolation centers) was proven. This analysis also contributes to the discussion concerning the outcomes of the weakness of the state in providing services to vulnerable communities. This leads us to question the manner in which the concepts of clientelism and informal urban growth are related. Also, further research is required to determine the extent to which the political parties are involved in shaping informality and the extent to which they benefit from this involvement. And, finally, how should the practice of urban design respond to these matters? These issues and questions may become interesting topics for further research.

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Conflict of Interests

The authors declare no conflict of interests.

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Article

Relational Urbanisation, Resilience, Revolution: Beirut as a Relational City?

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Abstract
The destruction of Beirut's port and large areas of the inner city following the August 2020 explosion occurred amid (and has exacerbated) an unprecedented national economic and social crisis portending another potential phase of urban "reconstruction" and a national political revolution. Critical scholars have highlighted the shortcomings of urban planning and governance in the city after the Lebanese civil war, particularly in terms of housing, infrastructure, and social inequalities, especially between the urban core and periphery. Beirut's post-war reconstruction(s), guided by blended-scale governance (i.e., public/private, confessional/political, national/local) and a real estate-oriented growth model have neither managed to completely restore nor efface the city's erstwhile status as an entrepôt of regional and international economic, cultural, and political importance but have instigated processes of rapid urbanisation and uneven development. These processes, historical trajectories, political and socio-economic dialectics, and shifts in urban political economy render Beirut relevant to the nascent empirical category of "relational cities," i.e., cities whose geographical-historical profiles position them as urban nodes connecting regional-global-national systems of flows under globalised capitalism. This article positions Beirut in the context of the debate on relational urbanisation for empirical exploration, and also points to the evental possibilities for alternative geographies that flow from the October 2019 protests.

Keywords
Beirut; global cities; relational cities; relational urbanisation; resilience

Issue
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1. Introduction

> This is the trouble with the Lebanese. The [reason the] Lebanese people are so inventive and so adaptable is that they adapt to situations, they make the best of a bad situation in fact. This is why they never could do a revolution, we should have done a revolution many years ago here. The people should rise up against their governors…but unfortunately…even the young Lebanese people are very traditional in their thinking. They only elect the same people, the same families, the same feudal lords and so on. (Roderick Sursock Cochrane on The Beirut Banyan, October 2019)

The recent urban history of Lebanon and its primate capital city, Beirut, is punctuated by both endogenous and exogenous events overlaying an unrelenting shift in the control of processes of urbanisation and urban planning from public to private hands. What distinguishes the protests in October 2019 in several Lebanese cities, centred on Beirut's Martyrs' Square as a reclaimed public space, from previous Lebanese political events is that they reflected less a specific, singular occurrence, and more a "general crisis of the State" (Gramsci, 1971, p. 210) reflecting discontent with the post-war settlement.

This is evident from the quoted statement, a call for revolt against Lebanon's ruling class from an unlikely

source, the heir of Sursock Palace in Acrafieh, Beirut, which at that time of recording was the residence of a celebrated personification of the positionality of the city's international bourgeoisie held before the Lebanese civil war. Lady Yvonne Cochrane Sursock, Roderick Sursock's mother, was one of more than 200 people killed as a result of the 4 August 2020 explosion in Beirut Port, succumbing to injuries received in the palace in which she had lived for the entirety of the Lebanese civil war (Jansen, 2020).

International media and academic indexes for fragile states have increasingly described Lebanon as a failing state, or a failed state in the making (The Economist, 2021). The available economic and social evidence seems on one hand to corroborate such a position: a third of the population in extreme poverty, with blackouts affecting telecommunications and hospitals arising from non-payment of energy production fuel bills, a chronic devaluation of the Lebanese pound, and dearth of incoming dollars to underwrite expenditures. Meanwhile the Panama Papers contemporaneously reveal large extractions of capital to offshore tax-havens by members of the Lebanese ruling class. Yet, on the other hand, these extreme conditions have not yet posed any direct threat to the ruling class as constituted in the centralised sectarian-confessional national system of government (Salloukh, 2019). While the present iteration of the Lebanese state is regarded as having failed its 4.2 million citizens and 6.8 million residents, the notion of a "failed state" remains something of a misnomer until the erosion of the state's authority reaches a stage well-beyond the present atrophy. The pragmatic reality for the Lebanese ruling class is that their strange resilience rests on the continued agreement, *entre eux*, of a collective monopoly of centralised, shared power with the capacity to operate as a "weak state" (Fregonese, 2012) interfacing with the international institutions and interests which prefer its continued control of Lebanon to any of the envisaged alternatives.

As one of the world's most urbanised nation-states, and arguably one of the most administratively centralised, the social scientific literature on Beirut necessarily foregrounds the urban across several disciplines. As with other relational cities, the mode of urban planning has been a central, transversal factor of the development pattern and political economy of the state (Akar, 2018). For Beirut, this has been as true from the first public masterplans under Michel Écochard in the 1940s at the end of the French colonial mandate to the developer-led ad-hoc development following the development of the Solidere district. The mass exodus of Beirut residents during the civil war from the inner city to the suburbs intensified after the war ended, when the political economy of the country turned towards financialisation of real estate the mode and role of urban planning shifted accordingly to become purely a facilitator for private development. Urban planning practices often described as "unplanned" development is more accurately described as a mode of governmentality in which developers and the local and national state operate at "blended scales" to facilitate ad-hoc suburban developments at the same time as speculative inner-city projects, without commensurate consideration for infrastructure, utilities, and transport planning (Verdeil, 2005).

This article argues that this moment of strange resilience, in preparation for national elections in May 2022, is more usefully regarded in Gramscian terms as an *organic crisis* of the Lebanese state, permitting the protests which started in October 2019 to be tentatively regarded as having an evental wake (Badiou, 2007) capable of producing a rupture with the present governance paradigm, producing terrain for reflection on possible alternatives. It is argued that such alternatives are imaginable via a consideration of Beirut's urbanisation through a relational lens, that is, seeing the city as being constituted and produced through relations and flows (material, capital, social, informational, cultural) from the local to the global levels, which can then be used in tandem with territorially-embedded urban perspectives towards developing alternative trajectories. As such, Beirut will be considered conceptually as a "relational city," and the relevant aspects of the relational urbanisation attendant to such a description will be identified as areas for future empirical study.

2. Beirut in Urban Literature

Looking beyond the modern era, the history of Berytus, the ancient city on the site of the modern Beirut, was that of a Roman and Byzantine settlement rendered as "the jewel of Phoenicia" owing to its maritime importance as a base for the Roman fleet in the Eastern Mediterranean, as well as a centre for the codification of laws under the Justinian law school (Jidejian, 1973).

In Beirut a case in point emerges *prima facie* in the sense of the city(-state) being constituted in the 19th century as a relational confluence of regional migration flows and maritime trade which acted as a magnet for commercial and financial activity, which in turn led to the foundation of academic and cultural institutions of international significance. With the bringing into existence of the Lebanese state, this gave Beirut an additional role as a capital city of a small postcolonial state and an increased prominence as a maritime hub following the Suez crisis. Urbanisation continued apace, mainly along the coast to the north and south of Beirut, before and during the 1975–1990 civil war and the subsequent postmodern reconstruction of the inner city connected with the neoliberal turn towards financialised real-estate urban growth. This reversed the previous modernist designs of Michel Écochard aimed at integrated, planned suburban growth.. This development pattern was by no means unique among cities in the Arab world (Verdeil, 2018), and the urban planning principles in play comported to a large degree with other (arguably relational) urbanisations which have been hitherto described in the

literature as "spectacular cities" (Koch, 2018) owing to the particular fabric of their transformations. Essentially, the historical constitution and profile of Beirut has been primarily relational, the legacy of colonialism in the region limiting the industrial development and capitalisation of Lebanon while several prolonged phases of related migrations flowed into, and out of, Beirut from the second half of the 19th century to the present day.

Lebanon has, since its emergence as a distinct colonial state in 1920, and an independent republic in 1943, undergone an enormous process of urbanisation, the vast majority of which has occurred in what is now somewhat nebulously referred to as "Greater Beirut" (Khuri, 1975). From the basis of a town which in 1840 had around 16,000 inhabitants, Beirut became a regional entrepôt in the course of the 19th century, developing an international footprint with the establishment of several universities in the city, including two American universities from the 1860s onwards (Kassir, 2011). The greater city until 2019 represented approximately a half of the country's 4.2 million population, based on an economy which is 80% service sector led by banking (against a national picture of 60% service industry) having exponentially sprawled out into the surrounding Mount Lebanon region in the course of the 20th century. While the city's population saw a significant reduction during the 15-year civil war from 1975–1990, urbanisation occurred on the periphery and the greater city has recently exceeded its height at the start of the conflict.

Temporally, city profiles of Beirut (Hanssen, 2005; Khalaf & Kongstad, 1973; Krijnen, 2016; Tabet, 1991; Yassin, 2012; Zaarour & Voiron-Canicio, 2020) present a wildly varying picture of a city undergoing a complex and relatively rapid urbanisation process in the midst of civil war, an epicentre of a turbulent and interdependent (inter)national geopolitical context, and most recently following a radically problematic neoliberal post-conflict inner-city transformation. Rapid change occurs in parallel with old sectarian certitudes and the resulting paradoxes of uneven development mushroom in scale as the city is estimated to now have above 2 million population (the last census was in 1932). This makes for an extremely rich empirical footprint in the social sciences extensively covering the city's role in Lebanon's intricate consociational (that is, mandatory, sectarian, power-sharing) system of national government, the neoliberal urbanism of the private-capital driven reconstruction of the city and its social effect, and Lebanon's unique "in-between'' geopolitical and cultural position crystallised by the porous divisions of its capital city.

Beirut's impact on the Lebanese national economy is currently at its historic height, driving most of the national GDP growth in the post conflict period with an initial peak following the first materialisation of reconstruction in the late 1990s. Since 2000, GDP has more than doubled, at $52 billion, or $8,532 per capita in 2017. Currently, however, the country's sovereign debt is among the highest of any in the world, and a recent downturn in USD in-flows triggered a foreign cash crisis in the country which has spiralled into hyperinflation for the Lebanese Lira. Foreign in-flows have long been a specific feature of the Lebanese economy reflecting the size of Lebanon's western and Gulf diaspora and its capacity to send remittances to family members still in the country (this accounted for more than 30% of USD in the Lebanese economy in 2019), but it more worryingly portends a property-finance and affordability crisis where heightened rents and urban land prices cannot be serviced by domestic production.

While the threat of austerity measures and tax increases on consumption were the short-term causes of the 2019 protests, deeper causes reflect a long-term dissatisfaction with the post-war readjusted sectarian system of national government, centred in Beirut, members of which are domestically regarded as having benefited lucratively from the reconstruction boom while inequalities soar, particularly on Beirut's periphery.

The urbanisation of Beirut is best understood in five phases (Yassin, 2012), with a nascent sixth stage emerging since about 2017, and open to radical reorientation:

Phase 1 (1850–1920): The growth of cosmopolitan Beirut as a gateway to the Levant;

Phase 2 (1920–1958): The French mandate, early independence, and "building" a mini-Paris;

Phase 3 (1958–1975): Rapid urbanisation, urban sprawl, and the misery belt;

Phase 4 (1975–1990): Violent urbanisation and civil war;

Phase 5 (1991–2016?): Post-war reconstruction and neoliberal peace.

Some recent empirical observations (Fawaz, 2014; Krijnen, 2016; Naeff, 2017) portend a sixth phase emanating from a tangential expansion of the finance-property economy in the city as a function of the financialisation of housing globally, resulting in a new revanchism (Smith, 2005) protruding outwards from the city and prioritisation of the maintenance of urban inequalities between the city's rich inner core and persistently impoverished outer periphery.

The most recent urban transformation of Beirut is usually framed around Lebanon's encounter with neoliberalism following the changing geopolitical scenery from 1990 onwards in the Middle East and in the national context of the enduring consociational (sectarian) system of governance begun under the French Mandate from 1920 onwards (Krijnen & Fawaz, 2010). Perhaps as a result of this, its positionality is often framed as a multi-cultural confluence in a geopolitical context in which Lebanon plays less of a critical role in its own affairs than its neighbours and allies of its various

social sects. This refers firstly to the major role Syria played in Lebanese internal affairs up until 1990, despite being the economic and structural opposite of Lebanon as a quasi-secular Arab republic with an economic model based on Soviet-influenced command economy principles rather that Lebanon's longstanding laissez-faire economic liberalism and Beirut's trade-port status. Secondly, a more symbiotic relationship flows from the Israel-Palestine conflict, in which Beirut found itself particularly entangled as a major site of coordination for the Palestine Liberation Organization, the Popular Front for the Liberation of Palestine, and other Palestinian militant groups and some 300,000 refugees.

Yet, while Lebanon has typically been a price-taker in these wider developments, it is also because of them that Beirut emerged as the pre-eminent trade port in the region in the mid-twentieth century following the decline of neighbouring Haifa's maritime trade importance. Additionally, major events from the 1950s to the early 1970s, including the Suez and oil crises, benefited Beirut in removing its competition as an oil and goods port for the region (Huybrechts, 2002).

The civil war also interrupted a certain process of transformation in the decolonisation period from 1943 onwards, on the basis of two masterplans in 1943 and 1963 for Beirut involving French architect and urban planner Michel Écochard. This process foresaw a "Paris of the Middle East," in which the religious and linguistic diversity of Beirut would play out on small squares and streets with open cafés, accentuating the universities and institutions based in the city (and its likeness to the former colonial power). A national law on banking secrecy was the starting point in 1956 for a structural shift to a service-based economy in Lebanon, firstly in banking (six international banks set up their headquarters In Lebanon immediately upon this development) and alongside the development of a free zone at Beirut's port, and a heightened tourist and office space offer via a construction boom (Corm, 1998).

In the Chehabi period from 1958–1964 this was boosted through the establishment of a raft of public and private institutions, including a central bank, replacing the informality of the first iteration of consociationalism with a focus on aggrandising Beirut's profile as a hub of enterprise and banking in the region. The economic growth that accrued from these interventions was decisively lost in the civil war, which destroyed much of the inner city's built fabric. This growth plan, however, hugely underestimated the population rise that would be precipitated by migration in the wider region before the civil war and resulted in what became known as the "misery belt" around the city, an unchecked rapidly accumulating sprawl of informal housing. The civil war from 1975–1990—itself a complex product of these factors and others among which the Maronite (Christian) sect's dominance of the sectarian governmental system at the expense of the Sunni, Shia, and Druze groups featured prominently—brought huge destruction to Beirut and instigated the city's erstwhile division into East and West Beirut (Fisk, 2001).

The bones of the reconstruction after the civil war can however be seen in these earlier developments in the city, although the scale of post-war transformation could scarcely have been anticipated. This was partly a reflection of the post-1990 environment of footloose monetarism and enthusiastic IMF prescriptions to impose neoliberal "openness" on developing economies throughout the world (particularly those the Cold War had hitherto precluded it from reaching), and partly by design through the inner city transformation plan driven by a public-private body, Solidere, in a mire of clientelism and with a focus on building a property market based on high-end developments in Beirut's city centre (Nasr & Verdeil, 2008).

3. Global Cities, Relational Cities

Beirut's inclusion in the 2020 update of the Globalization and World Cities Research Network index as a "beta+" city, alongside much larger and more economically integrated agglomerations such as Barcelona and Houston and despite the failure of the post-war reconstruction period to reconnect Beirut to regional circuits (Huybrechts, 2002), sits somewhat uneasily alongside its virtual non-inclusion in global production network (GPN) analysis. Beirut can therefore be considered as a case to explore current contentions within the theorisation of global cities (Sigler et al., 2021), and serves as terrain for reflection on the empirical application of relational urbanisation and the relational city as category.

Research on relational cities is a relatively nascent categorical theme in urban geography typified initially by studies of offshore financial centres (or tax havens) which have developed as nodes between the regional and global economic scales under financialised capitalism, extracting extraterritorial gains at odds with their normative geographic scale and playing a geo-economic role based on "borrowed size" (Alonso, 1973; Hesse, 2016). Rooted in the global geography of capitalist *flows* and with relevance to the shift in production towards GPNs, advanced and professional service industries, and financialisation, the category includes the types of cities and city-states which can hope to achieve relational positionality and the urban formations which emerge from transformation towards this "small-but-global'' configuration.

Theoretically grounded in the arguments for a relational view on space (Massey, 2005), its principal conceptual implication for urban studies is that the "container view" of cities as bounded territories in which processes unfold is eschewed for a relational lens which sees cities constituted as "dense bundles of social relations and power infused interactions that are always formed out of entanglements and connections with dynamics at work in other places, and in wider regional, national and transnational arenas" (Hart, 2002, p. 297).

The relational lens on cities is an important aspect of the debate in postcolonial urban studies about the applicability of urban theory from the Global North in Global South urban contexts, where its methodological import is deployed variously as a means of dismantling constructs such as "global cities" in favour of an "ordinary cities" approach (Robinson, 2006), or seeing cities embedded in a world of relations (Söderström, 2014). This approach has arguably given the relational lens a certain global portability and potential to overcome "comparative gestures" (Robinson, 2011) when applying urban theories to cities in different regional contexts, although its theoretical application is currently couched somewhere between the ubiquitous level of all cities being relationally composed and the specific level of cities being categorically "relational" owing to their geo-economic positionality. At the analytical level, Söderström points to the relevant way of seeing: "[A] relational analysis of cities requires that we abandon abstract conceptions of relations as 'swirls of flows' to consider them as historical products, moored in material forms and generating change through power-mediated processes" (Söderström, 2014, p. 3).

Methodologically and empirically, a relational-comparative approach to urban comparison (Ward, 2010) has become established and emergent financial hubs such as Doha were considered along with more established tax-haven city-economies such as Panama (Sigler, 2013), and then expanded to more multi-scalar relational comparisons including Singapore, Luxembourg, and Geneva looking particularly at the governance properties of city-states of different kinds endowed with sufficient power to direct public and private development and maintain a legislative environment conducive to global business. This comparative constellation developed the category into a process of relational urbanisation (Wong et al., 2021), which considers the particular histories and geographies alongside the economic, governance, urban, and spatial development strategies employed by cities and city-states to gain relational positionality in global flows and their attendant development patterns (Figure 1).

In situating Beirut in this literature, the purpose is to synthesise both the generalising and specifying logics of these approaches in a complementary way which utilises the explanatory power of relational urbanisation to describe processes of reterritorialisation in a wider range of locales which, while transformed relative to their previous scale and orientation in pursuit of relevance to contemporary flows under global capitalism, are not key nodes in GPNs or have otherwise notable "small but global" characteristics, but nonetheless relationally play some regional connecting or primate city role historically and currently. In addition to a wider empirical applicability of relational urbanisation there may be scope in applying this lens to Beirut to alter the operational definition of relational urbanisation to describe less the outcome of the process in terms of positionality and more in terms of the shape and extent of reterritorialisation engendered by the process. For the category of relational cities, using this definition of relational urbanisation it may be apposite similarly to reorient the operational definition to refer not to all cities or a small subset of global performers, but to those agglomerations where *relationality* is the principal historical driver of development, as opposed to, e.g., urbanisation around shifting or emerging industries.

4. Beirut's Relational Urbanisation?

But what makes this urbanisation specifically relational? How does relational urbanisation specifically manifest and present itself in Beirut? How, and where, do the spaces and flows of Beirut as a relational city emerge, and where are they interlinked?

The argument that Beirut's history is an example of a city principally constituted as a function of its relations, positionality, and its ability to use its introverted consociational governance system to extroverted effect is straightforward beside the argument that its current constellation still exhibits relationality. The unfolding crisis emphasises hitherto the embeddedness and resilience of the Lebanese political system in struggling not to reform itself regardless of the externalities it imposes

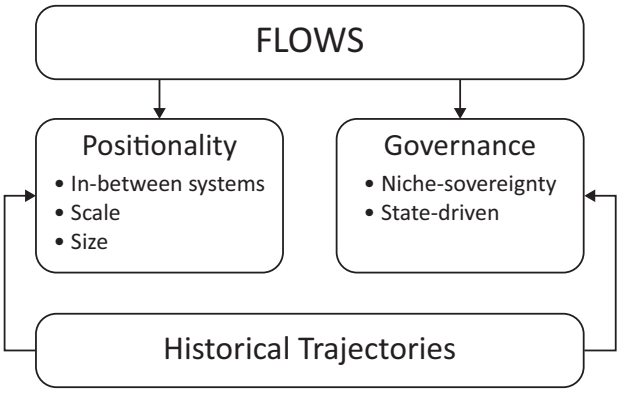

Figure 1. Cities seen through a relational lens. Source: Hesse and Mei-Ling (2020).

on the population and diaspora (Verdeil, 2018) and the failure of any pretentions towards the beta+ "global city" status given by the Globalization and World Cities Research Network. What was previously a "Switzerland of the Middle East" banking hub became a mere "capital sink" (Krijnen et al., 2017) before succumbing to a financial crisis and hyperinflation since 2019.

But since the argument is that relational urbanisation is about processes more than positionality, and the reterritorialisations and reorientations produced by urban change towards shifting global and regional flows, it is necessary to look beyond the headlines to see relational urbanisation at work. A proposed taxonomy of relational urbanisation in Beirut takes account of the following processes, their locations, and intersections.

4.1. Commodification of Inner-City Property and Concomitant Suburban Growth Pattern Produced

Entrepreneurial designs on the post-war redevelopment of Beirut's inner city and suburbs were already well-underway in the mid-1980s when the neoliberal commodification of urban land and financialisation were sweeping major Western cities. In this sense, the constitution and commissioning of Solidere in 1994 as a private finance initiative to oversee the reconstruction the inner-city in this vein made the contours of the inner-city development clear. An economy which had lost its banking hub role during the war and its ubiquitous maritime significance owing to changes in global logistics and new regional ports, it could be argued that a city reliant on eking out a role as a relational intermediary had no choice but to become magnetised towards the global proliferation of speculative real-estate and the associated financial flows. The early days of the Taif Agreement system required "buy-in" from erstwhile opponents, and the commodification of the ruined inner-city provided a means by which the spoils of peace could be shared out. Since 2007, real estate investments have displaced services as the largest foreign direct investment and expenditure sector in the Lebanese economy, with properties in inner-Beirut representing the lion's share of these (Figure 2). Such a steep reorientation towards a rentier model has in the last 15 years rendered the national economy mostly unproductive and subject to the fluctuations of the global property market, as the already dwindling sectors of agriculture and industry continue their decline.

The outward use of rent-gap creation in inner Beirut as a means of depopulating areas of the inner city has been well documented in the literature (Fawaz et al., 2018; Krijnen, 2018; Krijnen & De Beukelaer, 2015), but its concomitant effect of shifting Beiruti workers to more affordable suburban towns and districts is either only implied in the literature through indicators such as increased car-use, or considered historically. As gentrification of the edge of the inner city continued, this put more pressure on the suburbs and their lacklustre infrastructure (Basbous, 2021). But the clearing-out of inner-city populations towards attractiveness towards global financial flows through gentrification and large-scale urban redevelopment projects and a concomitant pressure in suburban areas has been recognised as a feature in relational cities (Hesse & Rafferty, 2020). The "unplanned" growth often ascribed to Beirut's suburbs is perhaps more accurately referred to as "informally planned," given that the hybrid sovereignties (Fregonese, 2012) which are de facto conducting planning policy in Beirut retain control over development in these areas (Fawaz, 2009).

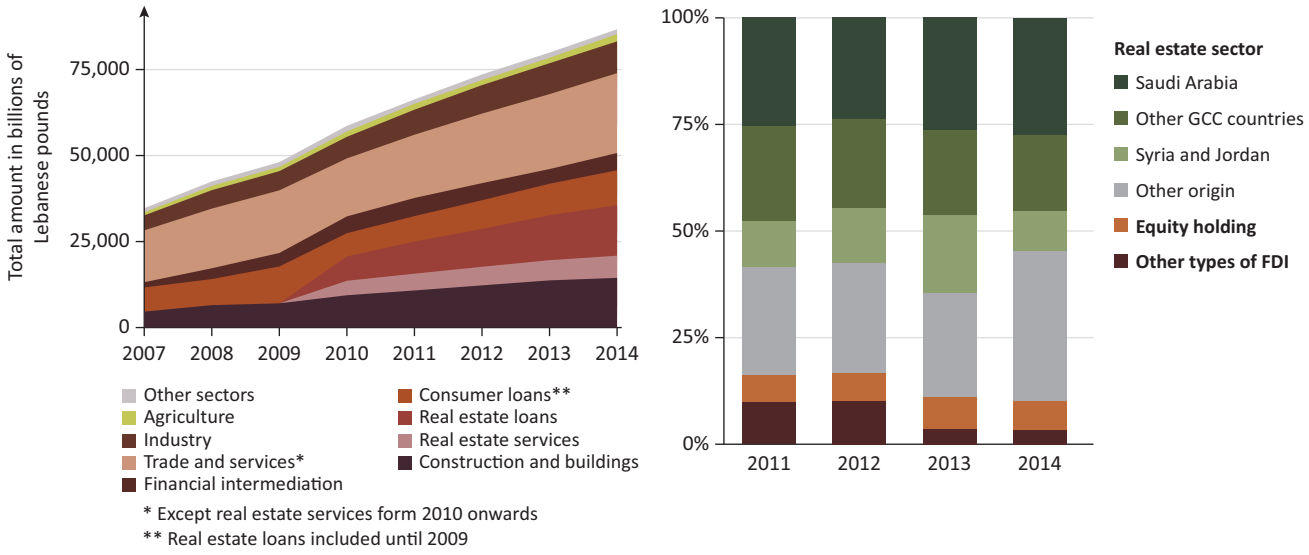

Figure 2. Evolution of the sectorial distribution of bank credit from 2007 to 2014 (left); origin of foreign investments in Lebanon per sector (right). Source: Verdeil et al. (2019, pp. 53, 55).

4.2. An Introverted Governance System With an Extroverted Economic Strategy

Introverted governance alongside an extroverted economic orientation has been identified as an aspect of the strategies underpinning relational urbanisation (Hesse & Rafferty, 2020), and in Beirut the lack of a strong urban governance and centralised power of the national system produces a familiar pattern to city-state formations able to use their "niche sovereignty" (Hesse, 2016) to direct development through and around pliant governance structures. A key example of this is the establishment of Solidere, using state power to create a hybrid development organisation and make legislative changes to laws on land ownership and rents to allow it to operate (Krijnen, 2018).

On the other hand, Lebanon's international orientation is avowedly extroverted, servicing and using its diaspora and connections with international economies through an extensive diplomatic network belying the country's size (Figure 3). The retention of regionally significant NGOs, international institutions, and INGOs with competing methods and strategies (Hamieh & Mac Ginty, 2010), despite an overall loss in regional economic significance as well as the maintenance of several internationally-oriented universities since the 19th century, demonstrates the territorialized aspect of this extroversion.

4.3. Contradictions in Infrastructural Development and Labour Profile

Relating to material flows, Lebanon's severe import/export imbalance finds only one major conduit—Beirut port, which has waned from being a main locale of relationality to critical global flows to being an essential lifeline for the supply of Lebanon's domestic market even after its destruction in the August 2020 blast. While the port stepped to this second-order purpose since the civil war, Beirut international airport's capacity increased six-fold as part of the reconstruction boosterism under Rafik Hariri, who gives it its name. Water and energy infrastructure remain woefully underdeveloped state-owned utilities in Lebanon, particularly for the areas of population growth in the suburbs and refugee camps, where the black market is a ubiquitous supplier of these essentials (Verdeil, 2018).

Whereas the transformation towards global city is typically marked with an attraction of expert expats and the sourcing of a commensurate lower-waged labour to service the changed consumer needs of the new population, Beirut's labour profile remains peculiarly relational even as a mere "capital sink" (Krijnen et al., 2017) with large numbers of multilingual, highly-educated graduates from the city's cluster of prominent universities typically seeking roles in the global and regional informational and financial economy which connect the city to

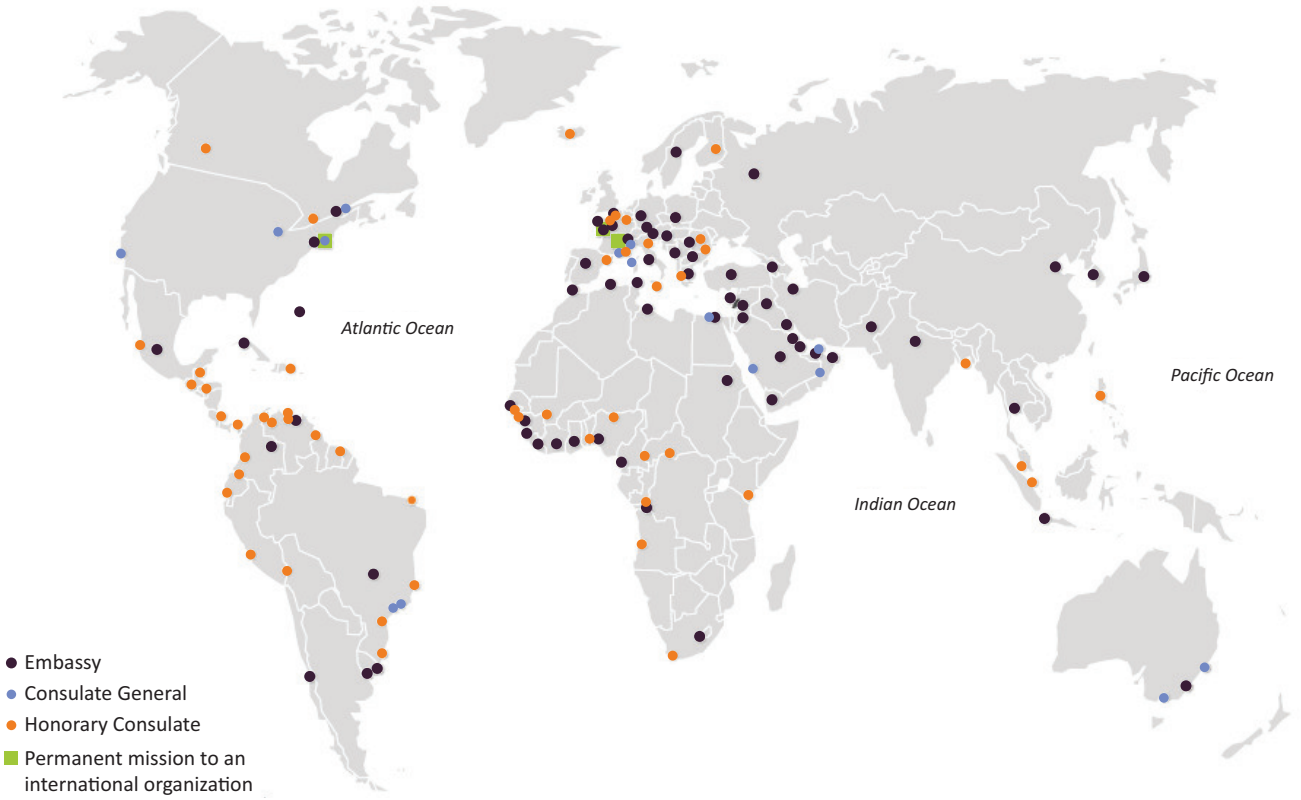

Figure 3. The Lebanese diplomatic network at the beginning of the 2000s. Source: Verdeil et al. (2019, p. 43).

international circuits, and feeding the "financial fix" of a financialised version of a diaspora strategy. In-flows of domestic workers from Asia and Africa on the other hand are subject to poor conditions and clamping down on trade union activity (International Labour Organization, 2016), while the established trade unions in Lebanon enjoy some qualified positionality in the national political picture (Baumann, 2016).

Thus, the manifestations, interconnections, and contradictions of relational urbanisation can be observed through qualitative engagement with the relevant institutions, economic and social actors, and individuals and groups which operate in the city and maintain its problematic relational connection to international flows.

5. Conclusion

This exploration of Beirut's urbanisation in the light of debates on relational space therefore sites the city and national footprint of urbanisation as a case of relational urbanisation in principle, not by degree. Beirut is an example of a relational city by virtue of its urban constitution as a connector of systems of flows between regional, national, and global scales. While all cities are to one degree or another "relational," cities with this profile are *primarily* relational in their composition and reproduction of urban space through their internal governance dynamics and economic profile. Analytically, the relational lens on the production of urban space is a way of unravelling the threads of this complex case of relational urbanisation, linking hitherto discrete strands of critical urban scholarship on the city. For studies of relational urbanisation more widely, this study points to a shift in relevance of the reterritorialisation that flows from the urbanisation process over that of the comparative economic positionality achieved by other "small-but-global'' relational cities, thereby increasing the relevance of this concept a wider range of possible empirical urban sites of inquiry. In Beirut, the particular blueprint underpinning this relational urban case is experiencing an organic crisis and is thus potentially open to alternative geographies.

But such alternatives do not arrive out of nowhere. The revolutionary space opened up by the October 2019 protests, while still tentative in nature, demonstrated the willingness of Lebanese citizens to discern pathways out of crisis on the major political questions, many of which are essentially urban in nature, with or without the Lebanese ruling class. While shocks and crises have intervened to contain the development of protests into revolutionary demands in the meantime, the idea that the Lebanese ruling class will be able to return to a previous state of affairs seems remote. It is thus in the "eventual wake" (Badiou, 2007) of the October 2019 protests that paths towards alternatives can be discerned and advanced by the various actors that constitute Lebanon's political ecosystem.

Such possible alternatives would make for an exciting future empirical exploration of what the alternative to relational urbanisation in Beirut might involve, including but not limited to the following areas: (a) recovery of relationality over positionality (i.e., a rebalancing of the focus of flows from financial to material and intellectual), (b) urban planning as a catalyst for developing infrastructure and a productive economy, (c) the development of an urban economy beyond real-estate, and (d) a local-national spatial politics. An expansion of the discourse on these areas would be a welcome departure from the normative assumptions underpinning framings of "resilience" which are frequently used to discuss the emergence from the present compound crises affecting the city and state. Whereas the critical literature on urban resilience has addressed its role in advancing policy narratives of certainty (Smirnova et al., 2021), a relational lens on processes of urbanisation offers a more reflexive methodology of discerning possible alternatives without reifying the present governance paradigm of the Lebanese ruling class.

Conflict of Interests

The author declares no conflict of interests.

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