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Editorial

The Resilient Metropolis: Planning in an Era of Decentralization

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Abstract
This thematic issue of *Urban Planning* focuses on recent transformations of the built environment, the economy, and society around the world. The articles examine how planning processes and policy responses can adapt to the transformation of metropolitan areas in the pursuit of a more just and resilient society. Key themes are centered on socio-spatial processes that drive the uneven growth, the economic globalization of cities and the pursuant human migration, and the impact of the Covid-19 pandemic. Collectively, the authors engage in a scholarly conversation about the future of the resilient metropolis in an era of decentralization.

Keywords
economic restructuring; pandemic; population change; resilience; urbanization

Issue
This editorial is part of the issue "The Resilient Metropolis: Planning in an Era of Decentralization" edited by Thomas J. Vicino (Northeastern University).

1. Introduction

In response to recent transformations of the built environment, the economy, and society around the world, this thematic issue of *Urban Planning* focuses on how planning processes and policy responses can adapt to the transformation of metropolitan areas in the pursuit of a more just and resilient society. The spatial decentralization of human settlements and economic activities is a key theme as patterns of metropolitan living continue to evolve and planning adapts as a response. These impacts are widespread, and three broad trends stand out. First, socio-spatial processes drive the uneven growth and development of cities and suburbs, thus exacerbating socioeconomic inequalities. Second, the economic globalization of cities and the pursuant human migration leads to further decentralization from the urban core to the metropolitan fringe. Finally, the Covid-19 pandemic has further disrupted patterns of metropolitan decentralization. Questions abound about the future of cities and suburbs. Urban planners and policymakers will be faced with a multitude of challenges and opportunities as society charts the future for recovery from the pandemic.

This thematic issue brings together 28 scholars from around the world, spanning a dozen countries. They offer a comparative lens on the conversation about metropolitan resilience. Across 13 original articles, the authors engage in a timely conversation about multiple, intersecting policy and planning issues about what makes cities and suburbs resilient. Moreover, the authors represent a diversity of voices, experiences, and perspective across the Global North and the Global South. A final feature is the multi-generational nature of the research teams that bring together senior scholars, junior scholars, students, and practitioners alike. Let us now synthesize the key themes.

2. The Thematic Issue: The Resilient Metropolis

The thematic issue opens with four articles that examine the myriad impacts of the Covid-19 pandemic on cities and suburbs. Building on a global conversation about the future of urban centers, the pandemic revealed enduring spatial injustices *within* and *among* metropolitan areas—challenging the resilience of these places (Banai, 2020). Questions abound about the future of work (Kahn,

2022), the future of downtown (Batty, 2020), the role of extended urbanization (Connolly et al., 2020), the question of density of cities (Keil, 2020), and the impact on suburbs (Anacker, 2021), among many other questions. Indeed, the concept of resilience in the context of cities, suburbs, and regions calls on scholars and practitioners alike to think differently about governance by making deliberate decisions that both mitigate risk and respond to new challenges as they happen (Meerow & Newell, 2019). The thematic issue seeks to further our understanding about challenges and opportunities of the unique nature of urbanized areas across time and space boundaries (Pendall et al., 2010).

In the opening article, Vicino et al. (2022) confront these questions by articulating an analytical framework for understanding the disparate impacts of the pandemic on metropolitan resiliency. They argue that the analysis of shocks to the systems warrants a mode of analysis along temporal, spatial, and dimensional characteristics and outcomes. Spatial differences emerge within cities and suburbs and among metropolitan areas along dimensions of density, population, socioeconomic structure, transportation patterns, and economic base of the region. This framework can serve as analytical guidance for scholarly analysis and a planning tool for practical application. Next, Moser et al. (2022) examine how the phenomenon of working from home shocked the urban system. Drawing on the case of Munich, Germany, the authors collect and analyze data about location choice of residence and work and the corresponding transportation patterns. They find that the pandemic resulted in a gradual yet discontinuous decay from the region's urban core to the surround suburban fringes as working from home increased. Then, Howe (2022) dives deeply into the lived experiences of residents of the Gauteng City-Region of metropolitan Johannesburg, South Africa. Using an innovative mixed approach that combines ethnography and smartphone location data, Howe (2022) demonstrates the uneven impacts of the pandemic across the "gender-poverty-mobility nexus," finding that vulnerable groups carried a disproportionate burden of household management, childcare, and mobility. Finally, Vigiola et al. (2022) turn to the case of metropolitan Sydney, Australia to investigate the impact of the pandemic on commercial and residential property trends. They find that during the pandemic, central city commercial real estate vacancies increased and residential demand in the suburbs increased.

The following articles build on the key theme of uneven patterns of urban development that have produced disparate socioeconomic outcomes through a series of case studies. Reflecting on the case of metropolitan Saint-Etienne, France, Pinoncely (2022) demonstrates the historical roles that planning processes play in shaping and reinforcing socioeconomic inequalities in a time of population and economic shrinkage across the region. Next, O'Farrell and Zwicky (2022) argue that the "just devolution" framework can make regions more resilient through spatial justice and equitable planning practices, as evidenced in the cases of Birmingham, England and Lyon, France. Then, De Vidovich (2022) illustrates that the provision of welfare services across the metropolitan areas of Milan, Rome, and Naples results in uneven socio-spatial polarizations from the urban core to the suburban fringe. Turning to the case Tokyo, Japan, Ohashi et al. (2022) extend the analysis of population shrinkage in the suburbs to explain the role of inter-municipal cooperation across jurisdictions in coordinating resilient planning approaches. Csizmady et al. (2022) demonstrate how unplanned suburbanization in Hungary results in class segregation, social injustice, and environmental degradation. Rodrigues (2022) compares the role of housing and the built environment in Lisbon, Portugal and Luanda, Angola to assess neighborhood resiliency and explain adaption to current conditions. Losonczy et al. (2022) consider the case of metropolitan Budapest's suburbanization through a development typology and planning history to explain the role of centralized planning systems. Following this case, Lorens and Golędzinowska (2022) explain the role of polycentricity and its impacts on resilient planning in the Gdańsk-Gdynia-Sopot metropolitan area of Poland. Finally, turning to the case of Jakarta, Indonesia, Aritenang (2022) examines the impact of socioeconomic inequality on travel behavior, finding that residential economic structure shapes peripheral travel and development on the suburban fringe.

3. Conclusion

This thematic issue invited scholars to consider the many facets of metropolitan development and their impacts on resilient planning in an era of decentralization. The collective contributions in this thematic issue demonstrate that the social, economic, and political processes shaping the decentralization of people and activities across the landscape endures throughout the developed and developing city regions of the world. These insights, both theoretical and empirical in nature, further contextualize our understanding about what makes cities, suburbs, and regions resilient. We have learned that the nature of shocks to a metropolitan system can come in many forms—from pandemic to poverty and beyond. The consequences of uneven patterns of development across cities and suburbs challenge planners and policymakers to think about endemic shocks over time in different ways. Spatial justice practices and equitable planning approaches offer us the frameworks and tools to confront inequalities of all types. We invite you to join this timely, provocative conversation in this thematic issue.

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Conflict of Interests

The author declares no conflict of interests.

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Article

Urban Crises and the Covid-19 Pandemic: An Analytical Framework for Metropolitan Resiliency

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Abstract
Social scientists of the urban condition have long been interested in the causes and consequences of the phenomena that shape the growth and decline of cities and their suburbs. Such interests have become increasingly relevant in light of the Covid-19 pandemic. Over the course of the pandemic, many academic and popular analyses have confronted two essential questions: How has the pandemic changed the city? And given these changes, are they permanent? This current scholarly and popular dialogue generally lacks comparative analysis. In this article, we attempt to further the analysis and discussion about the pandemic and the city by reframing the debate through three comparative lenses: temporal, scalar, and dimensional. Drawing on the debate and experience of urban areas in the United States, we present an analytical framework to apply a comparative analytical approach. Three temporal analytical matrices are presented: (a) pre-pandemic, (b) current-pandemic, and (c) post-pandemic. These matrices articulate the relationships between a city's developmental patterns and their related dimensions of urbanization. We pay special attention to the nature of scale within and among the cities and suburbs of regions. Each matrix is tested and contextualized using relevant narratives from cities in the United States before, during, and after the pandemic on various issues, including housing, transportation, and economic development. This framework will serve as an analytical tool for future research on the pandemic and how cities can become more resilient to such shocks.

Keywords
Covid-19; economic restructuring; pandemic; population change; resilience; urban crises; urbanization

Issue
This article is part of the issue "The Resilient Metropolis: Planning in an Era of Decentralization" edited by Thomas J. Vicino (Northeastern University).

1. Introduction

In the wake of the Covid-19 pandemic, recent headlines declared, "New York is dead. Long Live New York" (Williams, 2021). Indeed, scholars and observers of cities around the world have questioned how the pandemic will impact the future of the city. New York is a case in point. Spanning some 23 square miles, Manhattan is the densest urban environment in the United States. The borough is home to over 1.6 million residents, but the daytime population doubles as workers commute to their employers and tourists visit the city (Moss & Qing, 2012). Crowded sidewalks, streets, and subways carry over four million people daily between the East River and the Hudson River. As a global city, New York is both a command center and cultural capital (Sassen, 2001). However, on March 20, 2020, everything changed when the government issued a shelter-in-place order. The hustle and bustle of the city abruptly ended, leaving streets, parks, museums, stores, and companies empty. The sirens of ambulances echoed across the empty buildings of the city, and the striking images of large trucks

carrying portable morgues became poignant examples of the impact of the pandemic on cities across the world.

Throughout the history of urban development, there have been many challenges and shocks to the urban condition. Whether they came as natural disasters, wars, or public health crises, they all presented significant disruptions and changes for the future. The Covid-19 pandemic is the latest of such shocks and is unique as its scale has affected areas across the world. As the conditions of the pandemic necessitated physical separation, dense urban areas were naturally reshaped—literally de-densified—in order to prioritize public health. This was manifested in various physical lockdowns of the city, which halted many commercial and industrial activities. The conditions similarly sparked intense and enduring debates about socioeconomic inequalities that have come to define the urban condition.

For cities in the United States, these conversations are deeply tied to the historical patterns of development and the myriad dimensions of urbanization across metropolitan areas and their cities and suburbs (Beauregard, 2006; Teaford, 2006). The shock of the Covid-19 pandemic has reignited long-time debates about spatialized inequalities along dimensions of race and class (Martínez & Short, 2021). Questions abound over housing, transportation, economic development, social inequality, and more as the pandemic exacerbates and illuminates such challenges (Buffel et al., 2021). The spatial connectedness of the network of cities and suburbs demands a comparative, analytical approach to the study of how the pandemic impacts cities. In the context of the United States, the ecosystem of some 90,000 local governments means that the social, economic, political, and cultural lives of residents are spread across a wide array of cities, towns, villages, boroughs, and the like (Kemp, 2007). Thus, an understanding of how the pandemic impacts different spatial scales of development is essential to this scholarly and popular discourse.

In this article, we seek to contribute to the debate about the pandemic and the future of the city. We articulate an analytical framework to guide scholarly analysis of the impact of the pandemic on the city. We begin by setting the context of the pandemic by reviewing the urban condition and its relationship to shocks and resilience. Then, we put forth modes of analysis along temporal, spatial, and dimensional characteristics and outcomes. These modes are examined through a set of matrices that serve as the primary analytical tool for future research on the pandemic and how cities can become more resilient to such shocks. Finally, we conclude by reflecting on the prospects of metropolitan resiliency through planning and public policy.

2. The Urban Context of the Covid-19 Pandemic

The Covid-19 pandemic ushered an unprecedented shock to human civilization. The sheer global scale of the pandemic meant that people all over the world were impacted by this novel coronavirus. In particular, the dense form and function of urban environments meant that the shock was most severe in these areas. The scale and severity of this shock in cities warranted a wide range of perspectives about the future of the city. Scholars and observers have only begun to identify the causes and consequences of the pandemic. These scholarly and popular dialogues have focused on topics such as the rebound of downtown jobs, the population shift in cities, the innovation of urban public space, and the transformation of mass transit. The central question of density and agglomeration of cities undergirds these conversations about the unique nature of cities and shocks (Keil, 2020).

After the initial shock of the pandemic, popular commentators and public intellectuals quickly began to speculate about the future of the post-pandemic city (Krugman, 2021; Pinsker, 2020; Williams, 2021). Will jobs return to downtown? Where will people live after this pandemic? What has the pandemic taught us about urban innovation? Such analyses provide an important foundation for thinking about questions of urbanization and resilience. This public discourse serves the important purpose of starting the national and global conversation about shocks, resilience, and recovery from the pandemic. However, more attention is needed to better understand the context of how metropolitan regions—cities and their myriad suburbs—are impacted by the pandemic. Through a comparative lens, it is necessary to define the spatial differences within and among metropolitan areas. Let us turn to a synthesis of the pandemic's impact on the city and its relationships to shocks and resilience.

2.1. Cities and Pandemics

The impact of the pandemic stretched across all parts from Manhattan to rural America, and indeed around the world. While all populations and all geographies of human civilization were ultimately impacted, large urban centers experienced the most severe effects. Not only did the virus spread quicker in urban areas, but the social and economic impacts were often stronger in metropolitan centers (Nathan, 2021). The disparate outcomes in cities led many observers to ask important questions about the role of the city and the pandemic, including: What can we learn from past shocks to urban areas (Glaeser, 2020)? Where are the impacts most concentrated and why (Sharifi & Khavarian-Garmsir, 2020)? What can policymakers and planners learn from these experiences (Florida et al., 2021)?

Pandemics and the city have always had a tenuous history (Crawford, 2007; McNeill, 1976). From the black plague of the 1300s to the cholera epidemic of the 1800s, cities often become the epicenter of public health crises (Kelly, 2005; Rosenberg, 1987). For example, the 1918 pandemic (known as the "Spanish flu") ravaged many cities in the early 20th century (Barry, 2005; Spinney, 2017). More recently, the severe acute respiratory syndrome (SARS) outbreak spread rapidly as the world's

cities were much more connected to the global economy. By the early 2000s, cities, as the engines of globalization, had created a platform for quick global spread of respiratory viruses (Ali & Keil, 2006). The SARS outbreaks, which never reached the pandemic phase, still shaped the processes of urbanization, migration, and economic change in the wake of a rapidly spreading virus (Ali & Keil, 2008). Thus, over the course of the history of human civilization, cities have borne the brunt of policy responsibility falling on public administrators of cities (Hays, 2009). In response to both SARS and Covid-19, public administrators around the world faced questions about what a "new normal" would look like in cities. These experiences should have provided a foundation for effective policy responses to a public health crisis, but the past has not always yielded lessons for the present (Batty, 2020).

Another central theme is the density of urbanized areas. An intuitive examination would posit that increased urban density would yield higher spread of a respiratory virus and thus more severe public health impacts. However, the research conclusions are more nuanced. While the spread is notably higher in denser areas, researchers have also found lower mortality rates (Hamidi et al., 2020). Many have attributed these low rates to the strong health infrastructure featured prominently in many urban cores. Some researchers have gone even further, arguing that patterns of suburbanization and sprawl exacerbated virus conditions due to the strain on governance structures and medical institutions (Connolly et al., 2020). This is consistent with larger dynamics of resilience, or lack thereof, that result from the sprawl of North American suburbs (Phelps, 2015).

The virus has also had tangible effects on the dynamism of the city. The modality of location of the labor force, especially among professional services, shifted to remote work. At the onset of the pandemic, there was a dramatic decrease in commercial and labor activity in and around the central business district (Loh & Kim, 2021). Decreased volume of professional workers created ripple effects among supporting retailers and transportation networks. Notably, public transportation usage decreased across all major transportation agencies in the United States (Parker et al., 2021). Compared to other modes, public transit has had the slowest recovery with an increased stratification of ridership by social class (Wilbur et al., 2020). It remains unclear how recovery will proceed as the pandemic transformed perceptions of public transportation.

Finally, the pandemic ushered in a new era of population migration. Before the pandemic, the world's cities were connected through social and economic networks that migration flows utilized (Hanlon & Vicino, 2014). International migration was disrupted and nearly stopped in most nations (Chamie, 2020). Domestically in the United States, inter- and intra-regional migration reshaped the population geography of cities and their regions. Intra-regional migration persisted as remote work facilitated household relocation from urban dwellings to single-family units located along the fringe of metropolitan areas. Furthermore, inter-regional migration grew in some regions as households relocated to new areas. Such changes in migration patterns revealed divisions by socioeconomic status: Wealthy households were more likely to relocate (Mongey et al., 2020). Questions abound about whether these changes to migration behavior remain after the pandemic (Frey, 2021).

2.2. Shocks and Resilience

The concept of resilience provides a useful context for understanding how people and places recover after a shock to society and the built environment (Aldrich, 2012). Even though the resilience concept is broad, and definitions vary across many contexts, it is nonetheless possible to operationalize the meaning of resilience as it relates to the city (Meerow & Newell, 2019). The Resilient Cities Network (2021) defines urban resilience as "the capacity of a city's systems, businesses, institutions, communities, and individuals to survive, adapt, and grow, no matter what chronic stresses and acute shocks they experience." Some scholars argue that resilience is the ability to bounce back from large shocks to the precondition (Klein et al., 2003), while others define it as the ability to create something new and stronger after a shock (Campanella, 2006). Still others define resilience as a city's ability to overcome adverse effects of a shock and the policies or structures that remain to address future shocks (Pendall et al., 2010). Despite these various definitions, urban resilience is a useful analytical category to capture the impacts of shocks on cities—be they social, economic, or environmental (Chelleri et al., 2015; Glaeser, 2021).

Parallel to the larger conversations about the definition of resilience, a variety of case studies on the resilience of individual cities illustrates the successes of recovery and the failures of overcoming shocks. Consider the case of the economic resilience of the city. Boston, for example, was faced with a deindustrialized and stagnated economy by the end of the 1970s; yet by the end of the 20th century, the city's ability to reinvent itself transformed the region and resulted in a social and economic renaissance (Bluestone & Stevenson, 2002). The city's ability to leverage the intellectual surplus provided by the various academic institutions allowed Boston to become a leader in various industries like biotechnology, robotics, and chemical processing (Glaeser, 2005). Decades later, the city's capacity to bounce back after the bombing of the Boston Marathon finish line highlights the key role that social capital and community resilience play in building strong cities as exemplified by the "Boston Strong" ideology (Ferrer & Conley, 2015). From the economic shock of industrial decline to the disaster of a bombing, the resilience of Boston demonstrates a city's capacity to overcome and thrive.

Cities are not the only places to experience shocks. Suburbs, too, confront the very same threats to the

urban environment. Differences between the urban core and the surrounding suburbs of a region point to significant variation in how shocks are experienced. The impacts of some types of shocks, such as natural disasters, may be specific to a single locale in a metropolitan region, whereas other shocks like outbreaks of diseases or the consequences of climate change are not constrained by spatial boundaries. This spatial difference underscores the intersectional nature of resilience and the structure of metropolitan regions (Banai, 2020).

The spatial structure and political organization of cities and suburbs in the United States provide a case in point. Local government is decentralized and lacks coordination across political jurisdictions (Miller, 2002). Public administrative functions such as planning, land-use zoning, transit, health, and economic development are largely determined by independent, local governments. As a result, the growth of the metropolis has been shaped by the structure and function of local government (Hanlon et al., 2010). This structure and organization of local governments meant that residents of cities, inner suburbs, outer suburbs, and exurbs experienced different impacts of the pandemic based on a variety of geographic characteristics and policy responses. Indeed, initial observations suggest that the resilience of metropolitan areas to the pandemic depended, in part, on a region's ability to mitigate inter- and intra-regional differences caused by the virus and thereby integrate economic, social, environmental, and health resilience at a metropolitan scale.

The Covid-19 pandemic presented a unique shock in scale and severity. The shock was global in nature. From rural areas to the suburbs, to the urban centers, the pandemic challenged the ability of human societies to survive, adapt, and grow. Let us turn to a framework that guides the analysis of the impacts by time, scale, and dimension.

3. Analytical Framework

Drawing on the debate and experience of urban areas in the United States, we present an analytical framework to apply a comparative analytical approach. Our analytical framework is divided into three primary modes of analysis: temporal, scalar, and dimensional. Each provides a unique perspective of any shock condition, with a specific focus on the Covid-19 pandemic. Together, these modes form a series of matrices that serve as our main instrument for analyzing the urban impacts of the pandemic. In this section, we present an analytical framework to guide the mode of analysis on how the pandemic impacts urban areas.

3.1. Temporal Mode of Analysis

There are distinct periods of analysis that serve to frame the conclusions that can be drawn from any shock. There is a pre-condition, a current condition, and a post-condition as illustrated in Figure 1. The pre-condition is a clear distinction of what existed before any shock occurred. This serves as the analytical baseline. Observers can reflect on the environmental conditions that existed before a shock. The pre-condition period ends with the arrival of a shock, marking the beginning of the current condition. Conditions immediately following the shock are temporary and observable. Shock conditions create disruption for society. When the shock dissipates, there are new outcomes, policies, and attitudes that shape the post-condition. A new environment exists that will become a future pre-condition. The current Covid-19 pandemic, which is the shock under analysis, has not yet reached this period. However, current public health discussions suggest the potential need for preparations to manage endemic conditions. Therefore, we provide an analytical framework for predicting the transition to the new normal.

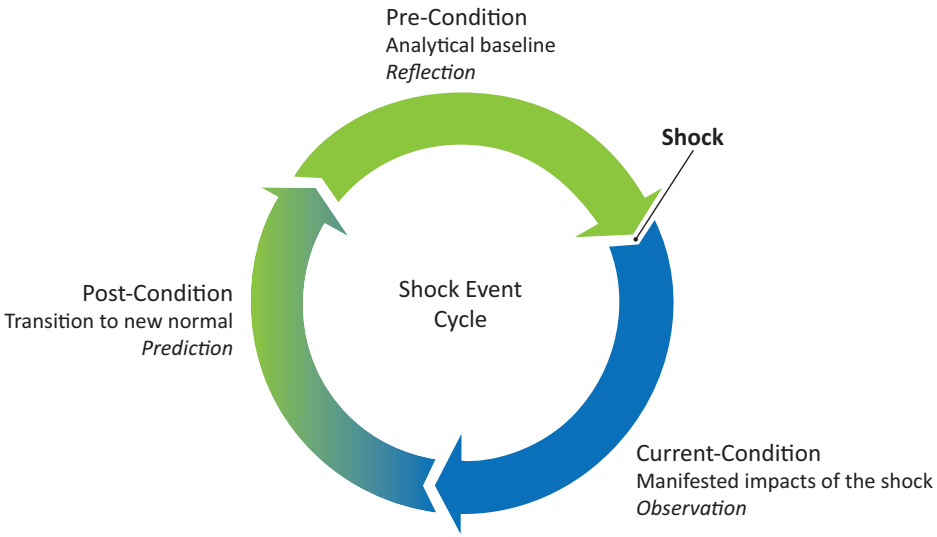

Figure 1. Shock event cycle.

It is important to note that the process of shocks can be cyclical in nature. Each cycle influences other cycles until a new stasis emerges in the post-condition period. However, the post-condition eventually emerges as the pre-condition for the observer of the next shock. This builds on existing theories of resilience that underscores our generational progress as a result of disruptive events, or shocks, to society—be it a pandemic, a natural disaster, or a socio-political event.

3.2. Scalar Mode of Analysis

The spatial scale of the impact of the shock is another important consideration. In the context of the urbanization of the United States, we identify three types of patterns of regional development: rustbelt, sunbelt, and knowledge economy regions. These regional patterns of development provide a useful categorical distinction for capturing the essence of how regional patterns of development vary across the United States. Specifically, regional patterns of development vary *among* and *within* metropolitan areas (Bluestone et al., 2022). First, inter-regional development patterns (among regions) can be defined by their economic base and the spatial processes of growth. For example, knowledge economies, or post-industrial regions, have a high concentration of professional services and high economic growth (e.g., Boston, San Francisco, and Seattle). Rustbelt regions have experienced deindustrialization and stagnant growth (e.g., Detroit, Cleveland, and Buffalo). Sunbelt regions have experienced sprawling and fast growth (e.g., Atlanta, Dallas, and Phoenix). Second, intra-regional development patterns (within a region) can be defined by the differences in the spatial gradient from the urban core to the metropolitan fringe. Distinct patterns can be identified in the central business district, the outer urban neighborhoods, the inner suburbs, the outer suburbs, and the exurbs (Mikelbank, 2004). Therefore, the significant variation in urban development means that the analysis of shocks in urban areas needs to account for such differences in the spatial scales among and within metropolitan regions.

3.3. Dimensional Mode of Analysis

Temporal and scalar modes of analysis provide us with the foundation for analysis, but it is also necessary to understand how the shock impacts specific characteristics of urbanization. A dimensional approach contextualizes the characteristics and outcomes. We identify five defining dimensions of urbanization, including density, population trend, socioeconomic structure, transportation patterns, and economic base. These dimensions are representative of the dynamics that shape the process of urbanization. They serve to best describe the growth and decline dynamics of a metropolitan region's composition while allowing for generality to carry out a broad comparative analysis. It is important to note that global connectivity of the economy and the human population is also a notable dimension of the urbanization process and impacts to the shock cycle.

These dimensions yield different results as the temporal period and regional type vary. In the pre-pandemic phase, these dimensions are baseline characteristics. These characteristics define the urban landscape and what we know about a region before any shock occurs. Once the shock occurs, we can observe changes in these characteristics. Shock conditions are inherently temporary and serve as a barometer of the impacts of the shock. Finally, once the shock has stabilized, those changes in the shock conditions become new characteristics or outcomes. Dimensions inform the temporal periods and type of regional pattern of development. They serve as a platform to collect evidence, conduct analysis, and make predictions. Ultimately, the goal is to articulate a generalizable framework to understand the impacts of the Covid-19 pandemic on cities through reflection, observation, and prediction.

4. Discussion of Matrices: Conditions and Outcomes

Drawing on this analytical framework, three distinct matrices are used to identify the urban impacts of the pandemic. These matrices serve to support an intersectional analysis among spatial, temporal, and dimensional aspects of a shock such as the Covid-19 pandemic. Each matrix represents a unique period in a shock cycle (see Figure 1) and illustrates the intersection between a region's pattern of development and the subsequent socio-spatial dimensions of urbanization. Specifically, these five dimensions are representative of the key features of the process of urbanization, which allow us to articulate the impacts of the pandemic effectively.

For the purposes of this discussion, we utilize this analytical framework as a means of understanding *how* the pandemic transforms the city. Using matrix-based analysis grounded by the period of the shock cycle (i.e., pre-, current, and post-shock), we characterize the urban impacts of Covid-19 by dimension. Each dimension serves as a variable to analyze impacts across stages of the shock cycle through the lens of each matrix. This provides an opportunity to reflect on the pre-condition of the shock, observe the current conditions during the shock, and predict potential outcomes in the post-shock condition. The following discussion exhibits how changes occur during each stage of the shock cycle and how these changes vary by type of region. Future researchers may use this analysis as a template, utilizing the framework to formulate novel hypotheses.

4.1. Density

The pandemic's direct impact on the density of urban areas remains one of the most significant developments of this shock. Prior to the pandemic, patterns of density

varied by type of region (see Table 1). During the current conditions of Covid-19, cities across all types of regions experienced significant de-densification of the urban core and an increase in activity in the suburban areas (see Table 2). However, the intensity of the de-densification was dependent on pre-pandemic conditions. Cities and regions with higher pre-pandemic densities (such as knowledge economies) tended to experience the most dramatic shifts during the pandemic, whereas the sunbelt and rustbelt regions were already more highly decentralized and less dense (see Table 3). Thus, the agglomeration of economic activities in cities—the density of firms and downtowns—is a strong indicator to consider as cities recover. As we consider the prospects of post-pandemic cities, the density of the built environment, such as the location of firms and the labor force, will shape a city's ability to rebound. Although cities and their businesses have shown signs of slow recovery to pre-pandemic density levels in the urban core, urban futures remain uncertain as the supply and demand of local services and goods have dramatically changed (Glaeser & Cutler, 2021).

4.2. Population Trends

Prior to the pandemic, patterns of growth and decline in metropolitan America were divided by steady population growth of knowledge economy regions, decline or stagnation of the rustbelt, and rapid growth of the sunbelt (Poon & Yin, 2014). The pandemic disrupted and exacerbated these patterns in notable ways, including migration and natural population changes. The shift from physical to remote work in the professional services industries impacted the geography of work across cities and suburbs. There was a notable exodus of high-skill workers from various urban cores, especially in knowledge economies. The population increased in suburban areas and decreased in the urban core (Anacker, 2021).

Despite the overall volume of inter-regional migration decreasing, pre-pandemic metropolitan growth trends continued. There is still rapid growth throughout the sunbelt, moderate to slow growth in knowledge economies, and decline in the rustbelt (Broughton, 2015). While the dimensional observations remain consistent, there are still significant underlying impacts of the pandemic. Namely, death rates increased nationally, which decreased natural population growth and increased the burden of net migration on economic and demographic viability (Frey, 2021). Since demographic shifts manifest over longer periods, it remains to be seen how the pandemic will reshape patterns of urbanization. While current indicators suggest a return to the status-quo, demographic outcomes will undoubtedly vary across regions.

4.3. Socioeconomic Structure

Socioeconomic inequality is a spatial phenomenon in the United States that shaped the historical development of metropolitan areas (Dreier et al., 2014). Neighborhoods are stratified by race and class, oftentimes along political boundaries of a jurisdiction or the neighborhood boundary within a city (Jargowsky, 1997). Prior to the shock of the pandemic, cities and suburbs across the nation suffered from high levels of economic and racial dissimilarity, which was most intense in regions with strong historical manufacturing bases and industrial decay (Neumann, 2016). Thus, the onset of the pandemic exacerbated social and economic inequalities everywhere, from the central city to the suburbs and beyond. Table 2 illustrates that dissimilarity consistently increased as a result of the numerous impacts of the pandemic. The intensity of inequality and its conditions were largely determined by the pre-pandemic characteristics of the socioeconomic structure of the city. For example, Detroit, a metropolitan area that is highly segregated by race and class, witnessed significant spatial differentiation of health

Table 1. Pre-pandemic matrix.

		Density	Population Trend	Socioeconomic Structure	Transportation Patterns	Economic Base
Type of Regional Pattern of Development	Knowledge Economy	Dense urban core and dense suburbs	Steady growth	Moderate dissimilarity	High volume, mixed mode	Growing professional services economy
	Rustbelt	Decentralized urban core and low-density suburbs	Decline or stagnation	High dissimilarity	Moderate volume, single mode	Declining manufacturing economy
	Sunbelt	Polycentric pattern and highly sprawled	Rapid growth	Moderate dissimilarity	High volume, single mode	Growing high- and low-wage service economy

Table 2. Current pandemic matrix.

		Density	Population Trend	Socioeconomic Structure	Transportation Patterns	Economic Base
Type of Regional Pattern of Development	Knowledge Economy	High dedensification	Slowed growth	Increased dissimilarity	Lowered volume, single mode	Remote work of professional services and reduced in-person
	Rustbelt	Moderate dedensification	Decline or stagnation	Increased dissimilarity	Lowered volume, single mode	Reduced volume of in-person manufacturing
	Sunbelt	Moderate-to-low dedensification	Rapid growth	Increased dissimilarity	Lowered volume, single mode	Remote work of professional services, in-person wage-services

and economic outcomes, while other cities such as Minneapolis experienced disparate social impacts in the wake of socio-political movements during the pandemic (Pleyers, 2020). These socioeconomic outcomes are emblematic of the pandemic, which continues to reveal and exacerbate enduring socio-spatial inequalities.

4.4. Transportation Patterns

Transportation patterns before the pandemic were highly stratified by region, but the consistent feature of the 20th century is the dominance of the automobile (Shoup, 2017). The immediate impact of the pandemic decreased all travel to the central business district nationally, especially in its early stages (except among essential workers). At the same time, intra-suburban travel increased as many bedroom suburbs saw a dramatic increase in the daytime population. As the pandemic progressed, commuting patterns slowly returned to pre-pandemic levels, although the patterns varied by region. For example, knowledge economies, which previously had more mixed-mode travel (e.g., subway, commuter rail), had slower volume recovery with less diversity of transit mode. Many workers who previously rode the subway or other public transportation in cities like Boston and the District of Columbia simply stopped. Workers continued to work remotely or have chosen to embrace the social distancing benefits of automobile travel (Berger, 2020). Commuting patterns in cities of the sunbelt and rustbelt, by comparison, have returned more quickly to pre-pandemic conditions. Collectively, changes in the volume of both travel and ridership of public transit have dramatically impacted transit accessibility. Nearly every United States transit agency now faces harsh fiscal realities. Service reductions and halted capital developments will continue to have large-scale ripple effects, even in a post-pandemic world.

4.5. Economic Base

While the shift to remote work was highly publicized, it was far less ubiquitous than it may seem. Professional services almost universally shifted modality in 2020; however, low-wage service industries and manufacturing remained in-person (with notable declines in productivity and worker safety). These industrial base differences manifested into some of the most significant regional variations of the pandemic's influence. In the sunbelt and rustbelt, a higher proportion of the labor force remained in-person throughout the pandemic. The timing of easing pandemic restrictions reflected the economic and political imperatives to reopen businesses in various industries. Sunbelt cities were the first to exit lockdowns and thus had the quickest economic recovery with their large service industries. Meanwhile, many knowledge economies, like Boston and Seattle, have experienced a significantly slower recovery as the myriad of pandemic policies varied across many suburban and urban jurisdictions. Public and private decisions about the management of the economy will shape post-pandemic outcomes. There is evidence to suggest that economic disruptions such as labor shortages, supply chain disruptions, and inflation will continue until a new normal fully emerges.

5. Conclusions

5.1. Summary

In the United States and around the world, the Covid-19 pandemic ushered a new debate about the future of the city. In this article, we put forth an analytical framework to guide scholarly analysis in the wake of disruptions and shocks to the urban system. Specifically, we articulated a mode of analysis along temporal, spatial, and

Table 3. Post-pandemic matrix.

		Density	Population Trend	Socioeconomic Structure	Transportation Patterns	Economic Base
Type of Regional Pattern of Development	Knowledge Economy	Slight decline in urban core and higher density suburbs	Steady slower growth	Moderate dissimilarity	High volume and less mixed mode	Professional services remain in mixed modality
	Rustbelt	Slight decline in urban core, slightly denser suburbs	Decline or stagnation	High dissimilarity	Moderate volume and single mode	Manufacturing volume increases
	Sunbelt	Continued sprawl and polycentrism	Rapid growth	Moderate dissimilarity	High volume and single mode	Service economies return to in-person

dimensional characteristics and outcomes. The shock event cycle calls for scholars to consider the pre-condition, the current condition, and post-condition of the shocks. The spatial differences of inter-regional and intra-regional patterns of development provide nuance for understanding differentiation of impacts. The dimensions of density, population trend, socioeconomic structure, transportation patterns, and economic base provide context for how patterns of urbanization evolve. In conclusion, the mode of analysis can serve as the primary analytical tool to reflect, observe, and predict urban impacts of the Covid-19 pandemic.

5.2. Lessons and Prospects

The Covid-19 pandemic unearthed and exacerbated socio-spatial inequalities in metropolitan regions across the United States. Enduring and systemic inequalities contributed to the debate about the future of the city. The policy response to the pandemic was impacted by the complex federalist structure that led to disparate policy responses. This fragmented policy response undermined the ability to improve conditions for everyone. Pandemics taught us that planning practices and policy responses need to be regional in nature, reflecting the spatial differences from the urban core to the suburban fringe of metropolitan areas. This analytical framework suggests that the future of the city is strong. Cities benefit from the staying power of agglomeration and the human connection. Indeed, the post-pandemic recovery depends on human responses and policy responses, especially given that the potentially endemic nature of the disease presents ongoing risks, shocks, and disruptions to communities around the world. Future research should focus on understanding the determinants and outcomes of pandemic resiliency in cities around the world.

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Conflict of Interests

The authors declare no conflict of interests.

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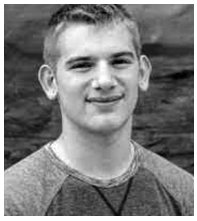

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Article

Working From Home and Covid-19: Where Could Residents Move to?

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Abstract
As a protective measure during the Covid-19 pandemic, in Spring 2020, a high number of employees began relocating their workplace to their homes, many for the first time. Recent surveys suggest that the share of those working from home (WFH) will remain higher than before the pandemic in the long term too—with correspondingly fewer commuting journeys. Workplaces are still often concentrated in inner cities, into which workers commute from more outlying areas. However, classical geographical economic theory suggests that a reduced need for commuting might lead to a reorientation of residential preferences amongst employees towards even fewer urban areas, as households trade off the disamenity of commuting against lower housing costs and more living space. This article investigates how such consequences could unfold in space. The Munich Metropolitan Region is characterised by a high share of knowledge-based jobs suitable for WFH and thus serves as our case study. We collect data at the municipality level for relevant aspects of residential location choices and develop an index for the potential of additional residential demand through increased WFH for each municipality in the Munich Metropolitan Region. Crucially, a municipality's potential depends on the number of commuting days per week. Keeping the weekly commuting time budget constant, an increase in WFH, or a reduction in commuting days allows a longer commuting time per trip. We visualise our results and sensitivities with maps. We observe a gradual yet discontinuous decay of potentials from the region's core to the fringes with an increase in WFH days.

Keywords
commuting; Covid-19; regional development; working from home

Issue
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1. Introduction

In most European cities, suburbanisation has been the norm over the last century because of improved transportation technologies and their broader spread among higher shares of the population (Teaford, 2011). However, most workers commuted to their workplace daily and were therefore forced to reside within a reasonable spatial distance from it. The rigidity of this spatial relationship may be in the process of disintegration with the advent of the phenomenon of working from home (WFH).

WFH is not new and was already an occasional practice more than 20 years ago (Felstead & Jewson, 1999), particularly in knowledge-intensive sectors of the economy, whose tasks often only require a computer with Internet access and a small and exceptional number of "digital nomads" who enjoy full flexibility in terms of their work location. However, it was only the significant external shock of SARS-CoV-2 (Covid-19) and the resultant global pandemic that put WFH on the agenda on a large scale. Government measures to enforce physical distancing as a precaution against Covid-19 in many countries made WFH mandatory for those jobs that could be performed outside of the office, thus making WFH for many the temporary norm. Scholars discussed the evidence of increased WFH from the start of the pandemic in both the US (Brynjolfsson et al., 2020) and in

Germany (Möhring et al., 2021). This challenge often forced employers to implement the required technological infrastructure and new flexible work arrangements. There are already strong signs that a higher share of WFH will become more firmly established in the future (Barrero et al., 2021). Because of the decreased importance of the physical proximity to places of work, individuals have increased freedom of choice as regards their place of residence. At the same time, an outright abandonment of the classical office is in most cases unlikely, even in the long term, particularly since innovation processes in firms continue to require initial and temporal physical proximity. Rather, such proximity must be seen as complementary to outward connectivity. Furthermore, the density of physical interaction is not only crucial for creative processes in firms but is a constituent of the appeal of cities in general (Weinig & Thierstein, 2021). Batty (2020), Glaeser (2022), and Keil (2020) discuss potential scenarios of post-Covid-19 urban structures. Numerous studies have analysed WFH in a spatial context: Cho et al. (2021) look at Covid-19-induced impacts on employment across metropolitan status and size, De Fraja et al. (2021) examine consequences of WFH on local labour markets in the UK, Davis et al. (2021) estimate the elasticity of substitution between WFH and in the office, and Ramani and Bloom (2021) find an increased demand for lower density neighbourhoods away from central business districts (CBDs) in the US and label this the "donut effect." In a similar vein, Rosenthal et al. (2021) observe a decreased commercial rent gradient associated with employment density, while Althoff et al. (2021) discuss the shifting spatial impacts of urban interdependencies between business service and local, non-tradable service workers. Nevertheless, residential decisions may be subject to altered spatial determinants. This article seeks to shed light on relevant determinants and provides a case study for the Munich Metropolitan Region (MMR). Since no statistical data on sustainable, long-term, post-Covid migration is available at the time of writing, we fall back on models of economic geography to project possible outcomes. Examining the literature, we proceed to estimate which municipalities in the MMR may harbour the potential for additional residential demand. This article is structured as follows: Section 2 delves into the literature for a theoretical background and Section 3 introduces the case study region MMR. In Section 4, we explain our approach and the data, while Section 5 discusses the results and, in Section 6, we verify the robustness of our results. Section 7 compares the WFH index results with short-term evidence on housing price data and, in Section 8, we look at the planning implications before reaching our conclusions in Section 9.

2. Theoretical Background

WFH had not been a widespread practice before the outbreak of the Covid-19 pandemic, even though it had already been technically feasible for quite some time. For example, around 56% of jobs in Germany were suitable for WFH before Covid-19, according to Alipour et al. (2020). Employers were often reluctant to embrace WFH due to its assumed disadvantages as regards the speed and quality of processes, innovative productivity, and the foundation of trust among the workforce, not forgetting the danger of shirking and prohibitively high costs of providing the technical infrastructure, such as hardware and software, for workers at home (Boland et al., 2020). On the other hand, there is considerable potential for cost-cutting since office rents and commuting costs can be reduced, as Haag (2020) discusses in the case of New York City. The situation for employees is more ambivalent, as Lord (2020) describes, because some prefer to separate home and work physically and are keen to meet colleagues in person, while others value saving the time and costs incurred by commuting and are therefore attracted to WFH (see Barrero et al., 2021; Shearmur et al., 2021).

WFH does not affect all areas equally and has been unevenly distributed among industries and spatially across regions (Bartik et al., 2020; Bick et al., 2020; Dingel & Neiman, 2020; Mongey & Weinberg, 2020; Reuschke & Felstead, 2020). The IT, finance, insurance, business services, entertainment, and education sectors in particular display an affinity to WFH. Highly qualified, above-average earners are thus disproportionately likely to make use of WFH (Schröder et al., 2020).

Over the course of the pandemic, with lockdowns and quarantine measures, firms and employees alike were by necessity forced to experiment with WFH. While some firms have already announced far-reaching plans for a continuation of WFH, even in a post-Covid scenario, some large high-tech companies such as Google are planning to implement "hybrid" workplace strategies that continue to require employees to live within commuting distance to the office in the future, as they deem a certain share of in-office collaboration necessary for successful team projects (Elias, 2020). For Germany, a recent study found that 35% of all employees are likely to engage in WFH either fully or partially after the Covid-19 pandemic, 17 percentage points more than before it (Berg, 2020). Surveys generally find that employees that are highly satisfied with WFH mention the positive effect of reduced stress from less daily commuting (Spellerberg et al., 2021). Consequently, it can be argued that a permanently higher share of WFH will be quite likely in the future (e.g., Rappaport, 2021), even though a certain degree of in-office presence will still be required. On average, it seems likely that many employees will spend two or three days per week WFH. Even though this shifting paradigm of work-life culture may not significantly alter the global dominance of metropolitan areas on a "macrogeographic" level, it nonetheless has spatial "microgeographic" consequences, as, for example, Florida et al. (2021) argue. First and foremost, there will be fewer commuter flows, especially to areas with high

concentrations of offices. Secondly, and the real focus of our study, are individuals' residential choices dependent upon the possibility of WFH. For further theoretical background on WFH and its relation to housing, see Stanton and Tiwari (2021).

In this study, we assume that: (a) Individuals prefer to have more space at home than less, also in order to be able to create a separate room for WFH; (b) individuals have only limited pecuniary resources and are attracted to areas with lower housing costs; (c) individuals (still) value reasonable accessibility to jobs, and will not become entirely "footloose," as they will still be required to spend part of the working week physically in the office; and (d) they value the existence and quality of certain local cultural, natural, and service amenities. Curfews and restrictions on the movement radius during the Covid-19 pandemic have further bolstered the latter through increased attention to the quality of dwellings and neighbourhoods (Weinig & Thierstein, 2021). As a result, households who shift to more WFH can lower their commuting costs and may move to potentially less expensive municipalities to have more space at home. In spatial terms, these relationships can be approximated using the monocentric urban model by Alonso (1964), Mills (1967), and Muth (1969) in the case of the MMR. Fewer weekly commuter trips translate into a lower disamenity of the distance to the urban centre, i.e., lower monetary and non-monetary transport costs. As a result, the land demand curve, the land price gradient, and ultimately the density gradient within the region become flatter and the functional (commuter) city-region expands, assuming a stable population and employment within the region. However, the selection process of a residential location is more complex than the model suggests, depending on further variables and demand patterns that differ by household groups (Thierstein et al., 2016), which must be considered when identifying areas with potential for added residential demand. For example, broadband Internet access gains in importance as physical meetings are replaced by video conferences with high data volumes.

3. Background on the Munich Metropolitan Region

The MMR is a functionally defined region in the southeast of Germany, characterised by relatively homogeneous internal commuter relationships, a commonly used infrastructure (e.g., hub airport MUC) and loosely woven governance by a registered association, with no formal administrative structures. The region is economically vibrant and shaped by industries that employ many highly qualified knowledge workers in WFH-suited industries (Alipour et al., 2020, 2021). Following the common description also employed by Thierstein et al. (2016), the MMR consists of 748 municipalities that are very different as regards various features such as housing prices, access to public transport and highways, or endowment with cultural and natural amenities as well as services. According to Kinigadner et al. (2016), average daily one-way commuting times in the MMR are around 50 minutes for tenants, while homeowners commute on average 67 minutes.

Figure 1, adapted from Thierstein et al. (2016), shows how the MMR is structured from a spatio-functional point of view. Morphologically, the region is rather monocentric. The City of Munich at the region's core is the main dominant centre of employment and therefore the most important destination for in-commuters. Augsburg, Ingolstadt, Landshut, and Rosenheim are the main regional sub-centres. The region's high labour demand and ambient living conditions continue to attract new residents to the region, who face an already strained supply of housing, resulting in the highest housing price level in Germany and one of the highest in Europe. For a case study, therefore, it serves well to investigate which municipalities within a metropolitan region may benefit or lose out from a shift to more WFH.

4. Methodology and Data

It is still unclear (a) what shares of the workforce will engage in WFH in the medium and long term and (b) how many days a week this share of workers will commute to offices. For this study, our informed guess is that an average worker will commute to work 2.5 days per week, which appears to be a reasonable solution that reflects the average between the extreme solutions of "no WFH at all" and "only WFH," as well as the manifold expressed opinions of "2–3 days" (Barrero et al., 2021). We are interested in the spatial dimension of these behavioural shifts, which is why we create a "WFH index" to assess which regions could be exposed as places of high potential for additional demand for housing. We construct a novel data set at the municipality level in the MMR. The components of the data set, including their weights in the WFH index, are described in Table 1. All of the variables are normalised via division by the maximum observation.

The WFH index is constructed by summing up the components' values multiplied by the respective weights. Housing costs are subtracted to penalise high values. Bearing in mind that individual residential preferences are heterogeneous and idiosyncratic (Hoshino, 2011), the weighting of the components is oriented on a large-scale inhabitant survey in the region (Thierstein et al., 2016).

The main identifying component is "accessibility," which records a change from a pre-Covid-19 to a post-Covid-19 pandemic state for both public and individual means of transport. Since this is the underlying key assumption of the study, we choose it to occupy one half of the WFH index with 25% each for the partially computed changes in accessibilities of public and individual means of transport. Housing costs play a substantial part in choosing the residential location for most individuals. The relationship between housing costs and

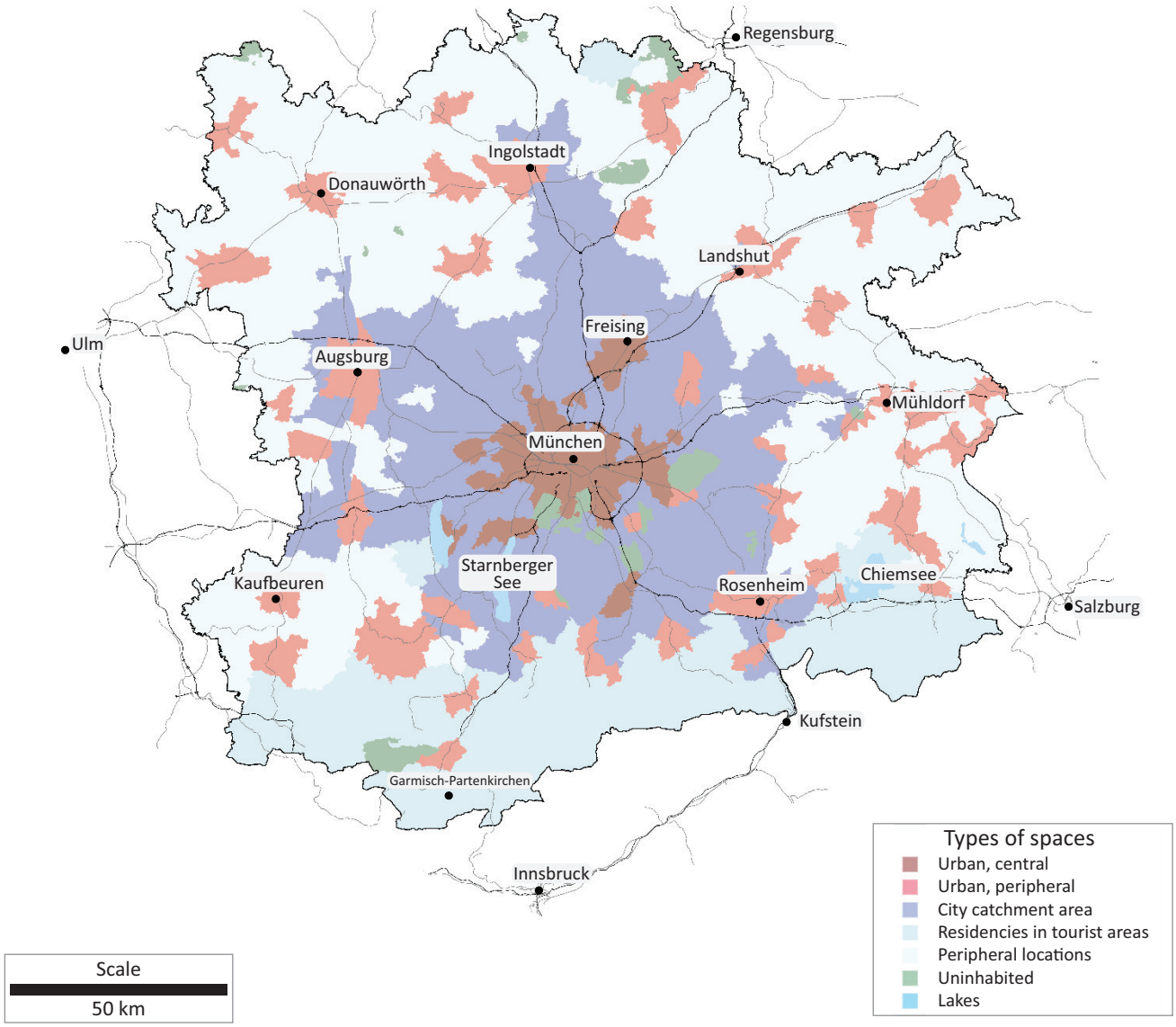

Figure 1. Types of spaces in the MMR. Source: Authors' work based on Thierstein et al. (2016).

income, however, varies depending on the income distribution: Lower-income groups spend more of their incomes on housing than top earners and this difference has increased over recent decades (in 2013, the lowest quintile spent 39% and the top quintile only 14% of their income on housing, while for the median income-earner this ratio is roughly 20% according to Dustmann et al. [2018]). As explained in Section 2, the average WFH worker tends to belong to higher earning groups. It was also assumed that WFH workers need on average more space at home to better be able to work, which leads to a trade-off between more accessible, smaller homes and larger but less accessible homes. Ultimately, this could lead to an equilibrium for a WFH worker with steady housing costs, whereby more square meters are available at home at a lower price. One cannot translate the ratio of housing costs over income directly into a weight in the WFH index, but we believe 20% to be an accurate configuration with 10% each for renting and buying. Broadband access and its speed play a crucial role for a WFH employee since frequent file-sharing and videoconferences as standard WFH activities require a high broadband capacity. If other members of the household also use the broadband connection at the same time, this becomes even more relevant. In rural areas in Germany, one cannot currently be sure of the existence of a high-speed broadband connection (Gürtzgen et al., 2021). As stated above, we assume 15% to be an appropriate choice, except for municipalities that fail to reach the minimum threshold of a broadband coverage of at least 90% of their households with at least 50 MBit/s. The remaining 15% of the WFH index are divided up among "soft" factors in the municipalities, by which we try to cover lifestyle aspects. By "amenities,'' we mean the existence of a historic core, hospitals, schools, and gastronomy and entertainment

Table 1. Description of WFH index.

Indicator		Operationalisation	Source	Weight
Housing costs	Public transport	Difference in gravity accessibility of jobs between 2.5 and five days of commuting per week	Jobs: Bundesagentur für Arbeit (2020); Statistik Austria (2021) Traffic: Deutsche Bahn (2021); OpenStreetMap Foundation (2021)	25%
	Individual transport			25%
Accessibility	Real-estate prices	Average prices per m² and municipality over 2018–2020 enter the index negatively valued	Boelmann and Schaffner (2021)	10%
	Rental prices			10%
Internet		Percentage of the covered area of municipality with access to broadband Internet of at least 50 Mbit/s; zero if less than 90%	atene KOM (2021)	15%
Public services, cultural facilities, and locational quality		Number of hospitals, secondary schools, museums, gastronomy businesses, and arts and entertainment firms per capita Existence of a historic urban core and share of vacation homes (as a proxy for locational appeal)	Agency for Digitisation, High-Speed Internet and Surveying (2016); Orbis (2021); Statistische Ämter des Bundes und der Länder (2020)	10%
Demography		Share of 18 to 29-year-old people	Statistische Ämter des Bundes und der Länder (2022)	2.5%
Local grocery stores		Existence of at least one grocery store	Discounto (2021)	2.5%

facilities in the municipality as "nice-to-have" features with 5%. "Vacation homes" with a weight of 5% function as a proxy for "natural beauty": Places where people spend their vacations tend to be located in landscapes that encourage sports activities such as hiking and skiing in the mountains or (sun-)bathing at the seaside or lakes (Kolko, 2012). Next, in line with Prenzel (2021), we argue that a high share of young(er) people in a region serves as a proxy for its appeal. However, we do not want to exaggerate the importance of this, thus attributing "young adults" a weight of 2.5%. Finally, a municipality that has one or more grocery stores potentially facilitates car-independent grocery shopping and thereby increases a family's flexibility, which increases the location's appeal. Kim et al. (2005) show that higher travel costs to a supermarket (among other factors) increase the willingness to move to a new residence. We therefore assign "groceries" a weight of 2.5%. Accessibility in municipality i is computed as follows:

$$A_i = \sum_j \frac{W_j}{e^{\beta d_{i,j}}},$$

where W_j is the number of jobs in municipality j, $d_{i,j}$ the travel time distance between i and j, and β a measure of the decay of distance. The difference between accessibility with five days commuting ($\beta = 0.035$) and accessibility with 2.5 days commuting ($\beta = 0.01725$) then enters the WFH index. The distance decay was calibrated using current commuting patterns of the MMR and is in line with previous literature (e.g., Ahlmeyer & Wittowsky, 2018). We assume stability of the total amount of time an individual is willing to commute per week in both pre- and post-Covid-19 periods. Hence, the parameters translate into a 50% reduction of the likelihood of commuting from every 20 minutes before the pandemic, to every 40 minutes after the pandemic. The accessibility values were calculated including a buffer zone of 40 km around the MMR to avoid a fringe bias.

Heterogeneous lifestyle preferences are likely to influence residential and mobility choices. Studies that try to simulate aggregate outcomes through the interplay of the sum of individual micro-decisions reflecting empirical or estimated distributions of socioeconomic variables (such as lifestyle preferences) could employ agent-based modelling techniques.

4.1. Correlations Between Indicators

To get a feel for the data in the WFH index, consider the heat map of correlations between several related variables in the MMR in Figure 2. The correlation coefficients range from −0.393 ("share vacation homes" and "Δ individual accessibility") to 0.996 ("number of residents" and "number of jobs"). The majority of the variables are weakly positively correlated. Both public and individual initial accessibilities are accessibilities with five days of commuting per week.

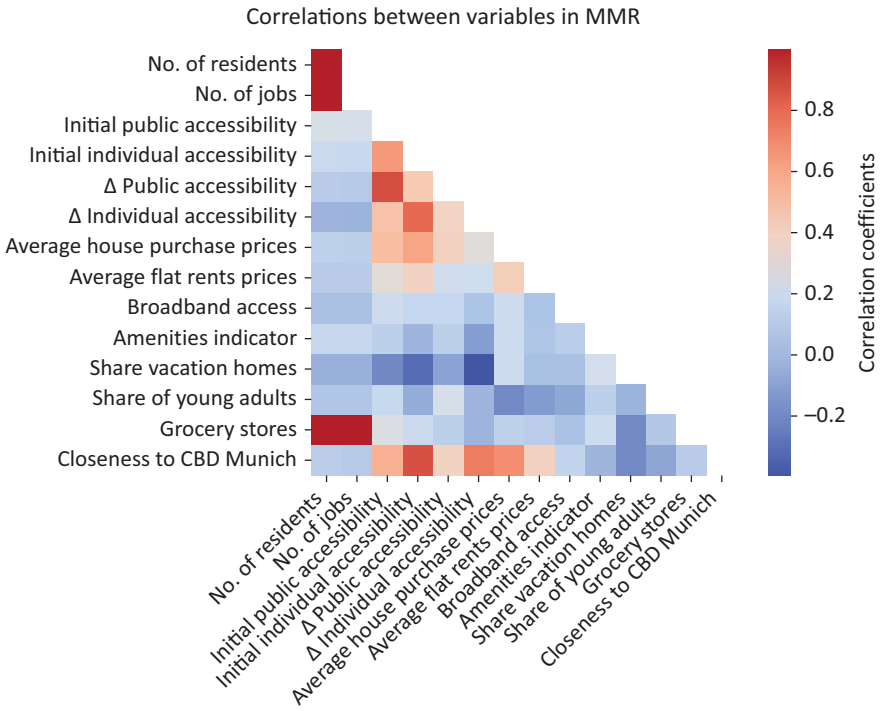

Figure 2. Correlation heat map between sub-indicators related to the WFH index. Note: Low correlation values are red and high correlation values are purple.

The changes in both accessibilities stem from the change from 5 to 2.5 days of commuting per week. Closeness to the CBD Munich is the inverse distance from a municipality's centroid to Munich CBD as the crow flies in km. A high correlation between initial individual accessibility and closeness to CBD Munich thus means that municipalities geographically proximate to Munich (low closeness values) are endowed with high individual accessibility values when their residents commute daily to their jobs. The low correlation between the share of holiday homes and accessibilities as well as the share of young adults show that holiday homes do indeed seem to be located on the periphery and deemed as unattractive for young adults.

5. Results

In this section, we start by discussing a map with the results of the WFH index. Subsequently, we put the results in perspective by presenting the correlation between the WFH index and its indicators.

5.1. The WFH Index Map

Figure 3 presents the MMR, with the City of Munich at its topographic centre, surrounded by the cities of Ulm and Regensburg in Germany and Salzburg, Kufstein, and Innsbruck in Austria. The green-coloured areas show municipalities in the MMR that display potential for additional demand for residential space induced by a general shift to more WFH. Municipalities with potential for additional residential demand are labelled as "high" for the 10th decile, "medium" for the ninth decile, and "low" for the eighth decile of the index respectively. Other municipalities show no added potential through WFH. We exclude any micro-spatial optimisation of residential choices within the City of Munich itself.

The largest concentration of added potential lies in the neighbouring municipalities to the northwest of the City of Munich. A corridor-like concentration begins in Dachau and stretches along the course of the highway and main railway line up to Ingolstadt. These areas are shaped by especially high accessibility values with the cities of Munich, Augsburg, and Ingolstadt close by, relatively low housing prices, and good broadband Internet availability due to the settlement of many high-tech firms. Another large concentration of potential can be found in and around Augsburg, the MMR's second-biggest city, which offers a less expensive city experience with advanced broadband capacities, while the City of Munich is still accessible within less than an hour. The southern part of the MMR in general does not seem to hold comparable potential. This outcome is partly due to the fact that real estate prices are exceptionally high. The southwest, around Kaufbeuren, offers lower residential costs but is quite rural with both low accessibility levels and a lower density of local supplies. However, the discontinuous corridor band from Munich's southeast to the Austrian border is an exception, which is also expressed in higher shares of holiday homes. Despite higher housing costs than in the southwest, this corridor benefits strongly from higher accessibility and amenities. To the east of Munich, a vast area encircling Mühldorf presents barely any potential, mainly due to

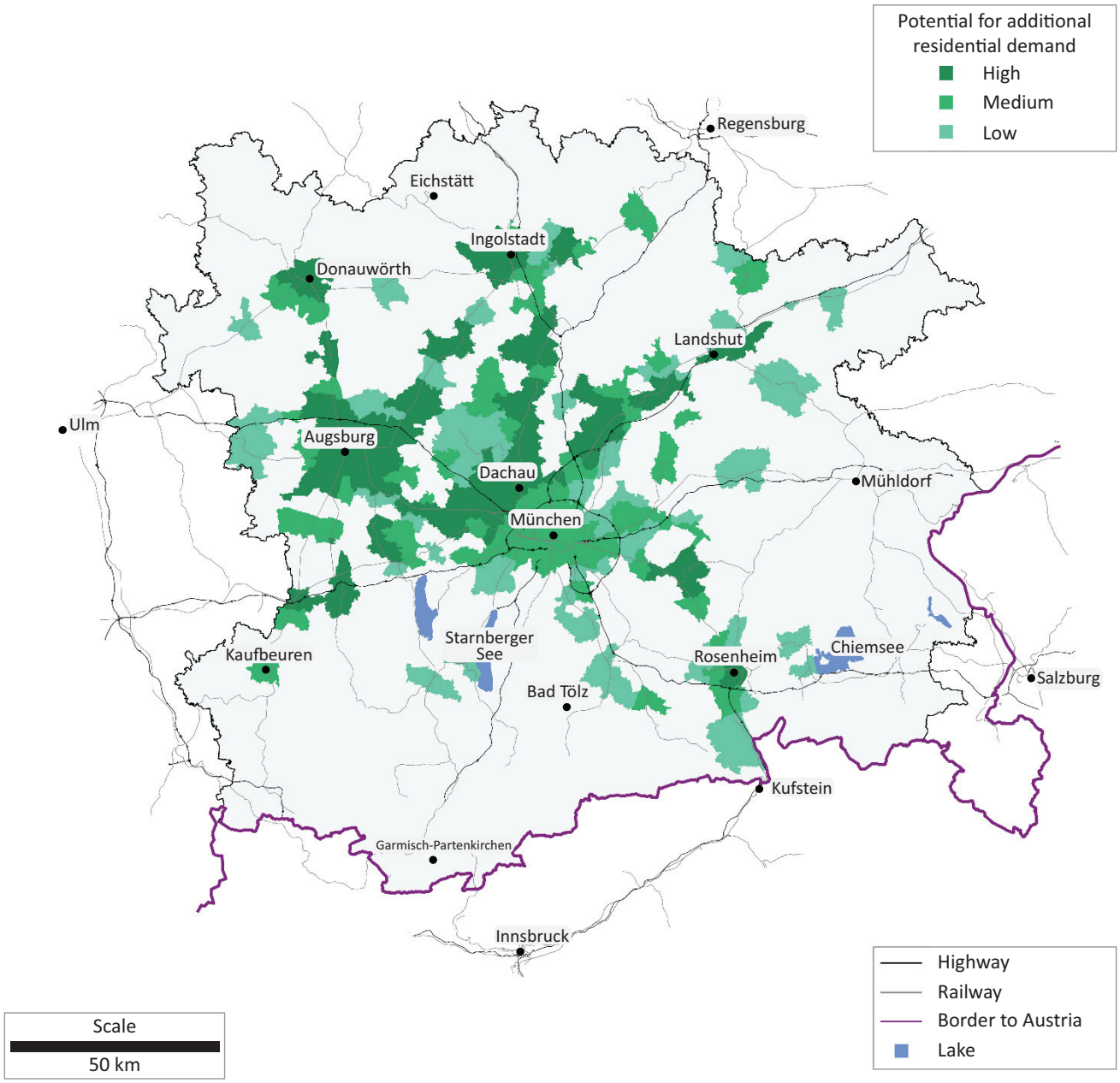

Figure 3. Municipalities with potential additional demand for residential space in the MMR.

limited accessibility, because housing prices are comparably moderate there. The overall pattern is quite heterogeneous, with municipalities that exhibit high added potentials often lying next door to those without, due to the highly differentiated distribution of certain decisive parameters of the WFH index used, such as the availability of broadband Internet and basic local facilities (e.g., shops). There is also a clear gradual reduction of potential towards the fringes of the MMR, resulting from the indices of accessibility change used. The City of Munich itself, despite remaining the most accessible municipality with the highest level of amenities in absolute terms, gains less in appeal as a residential location than the neighbouring municipalities in the north due to the high costs of housing. However, it is hard for smaller municipalities to overcome the appeal of an economically vibrant metropolis with many entertainment facilities amongst people with certain lifestyles. The City of Munich will only lose its potential according to the WFH index if the number of days spent commuting is reduced even further.

In summary, the following four observations can be made:

1. Physical proximity to large urban areas and jobs remains attractive when weekly regular commuting persists.
2. The more densely populated areas and more accessible northwest of the MMR exhibit more potential than the southeast.

3. The "secondary cities" close to a region's largest agglomeration show particularly high potential for an influx of residents. They could act as a substitute for the City of Munich as they display urban qualities while being more affordable than Munich itself.
4. Locations that are accessible by public transport are especially attractive because accessibility by car has less regional variation. The corridors along rail infrastructure are particularly attractive residential locations.

5.2. Relationships Between WFH Index and Sub-Indicators

In the previous section, Figure 3 showed how the WFH index is spatially distributed and Section 4 presented the weights assigned to the WFH index components. Figure 4 now shows how the components and the final index are interrelated. Broadband access is strongly positively correlated with the WFH index. This outcome is in part explained by the minimum cut-off condition requiring broadband to reach 50 Mbit/s for at least 90% of a municipality's households, otherwise setting its WFH index to zero. The second-highest correlation—change in public accessibility—is associated with the stark interregional differences in public transport accessibility. This means that while wealthy municipalities benefit disproportionately from higher commuting allowances, less affluent ones do not have comparable public transport services. The lack of correlation between the WFH index and numbers of residents as well as jobs shows that size per se does not warrant attractive living conditions. It is hardly surprising that high house prices put off potential WFH workers.

To get a further feel for the data, Figure 5 plots the WFH index values against the distance to CBD Munich. The observations are coloured according to their

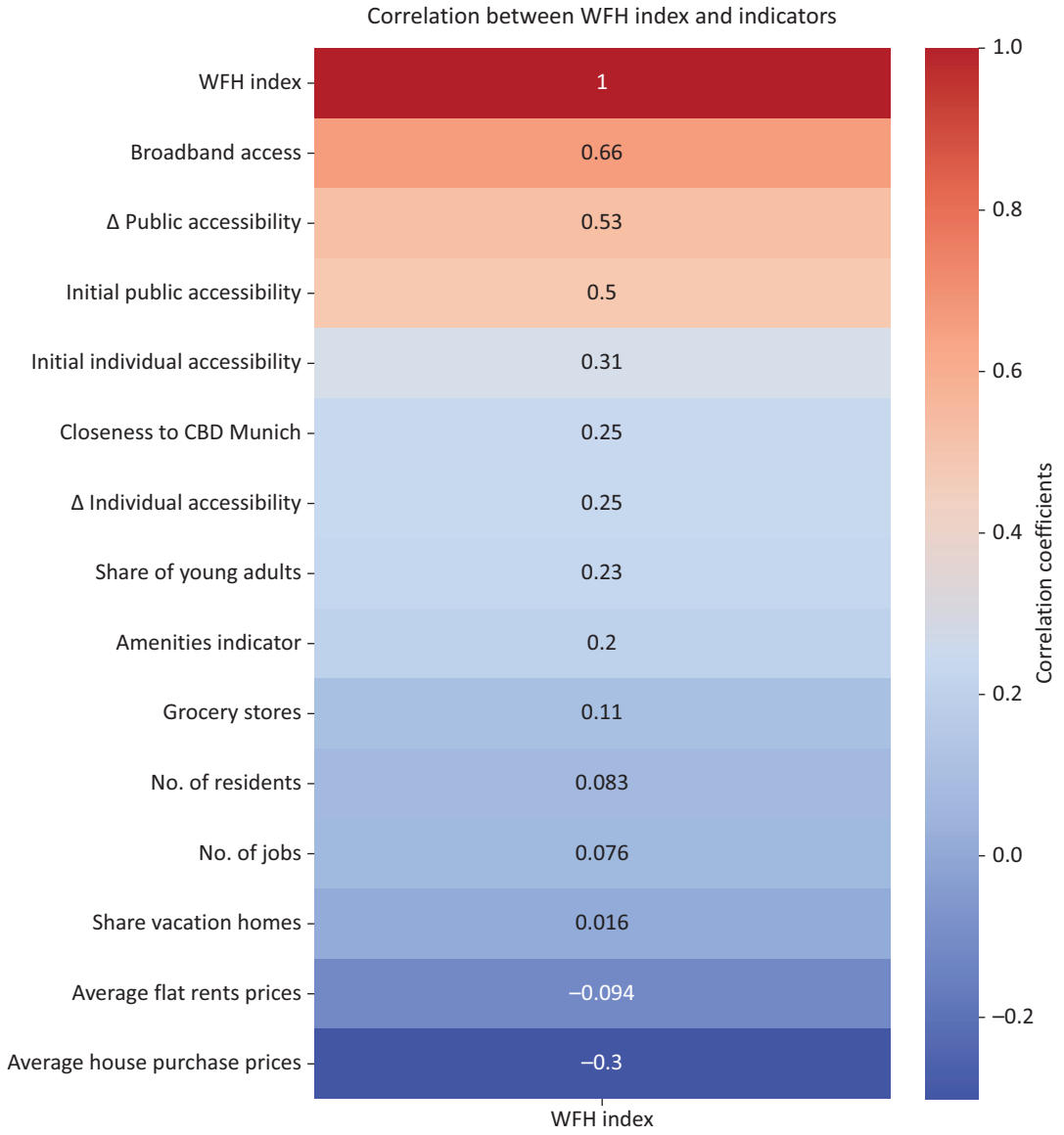

Figure 4. Correlations between WFH index and sub-indicators in the MMR.

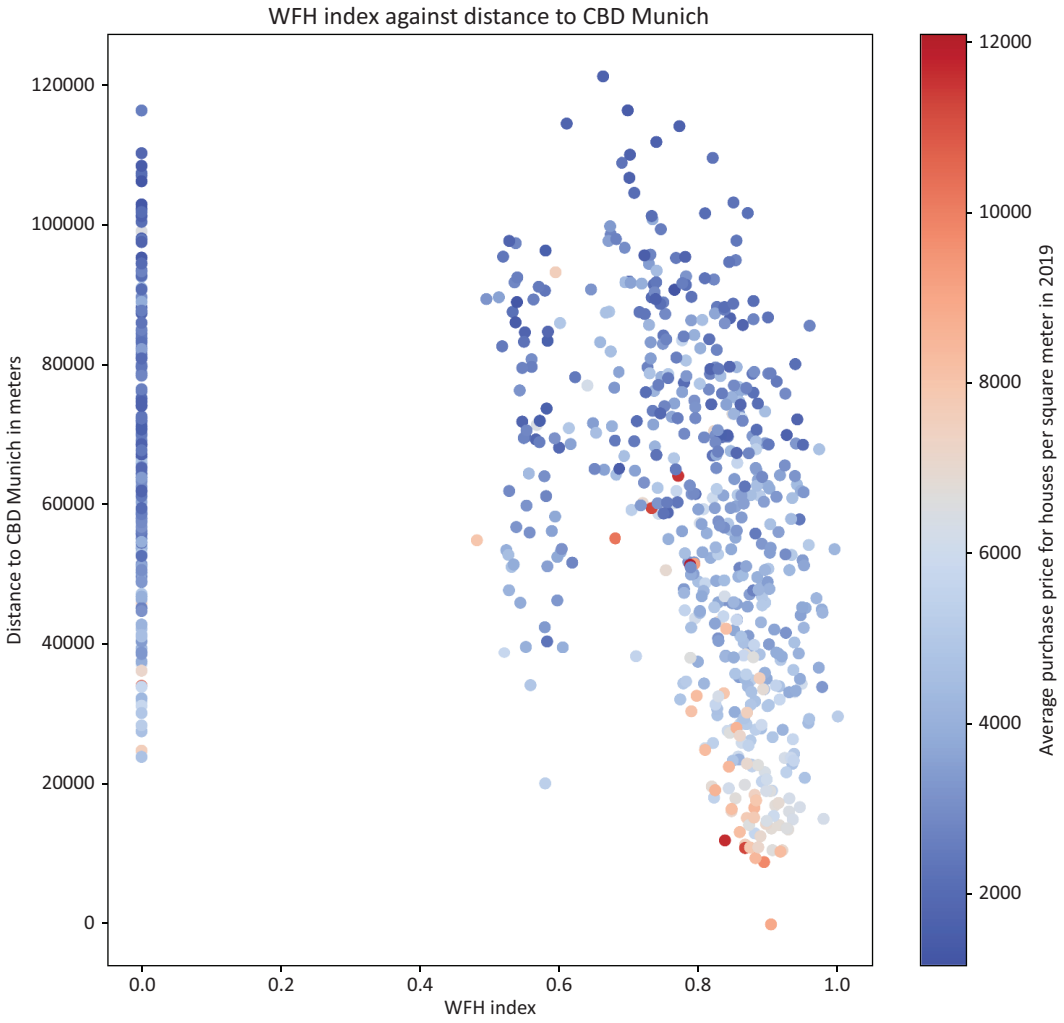

Figure 5. WFH index against distance to CBD Munich.

respective average house prices per square meter in 2019. It is evident that the best-performing municipalities are close to CBD Munich and are also relatively expensive. The municipalities that are furthest away from CBD Munich are also the most affordable ones.

Figure 5 shows that the advantage of living close to the MMR core is not offset by high housing costs when commuting to work on average 2.5 days per week.

6. Sensitivity Analyses

In this section, we test the robustness of our results. We first check for the changes in the outcomes associated with differing numbers of commuting days per week. Second, we test the impacts of choosing varied weights for the components of the WFH index.

6.1. Number of Commuting Days

Assuming that each individual is willing to spend a constant amount of time commuting per week, the accessibility of the municipalities changes depending on the number of commuting days per week. In the main scenario in Figure 3, we assumed 2.5 days of commuting per week. Zero days commuting is excluded from the analysis because this would allow working from anywhere. We construct six different scenarios with a gradual reduction of the average number of commuting days per week to visualise the gradual outward-spreading alteration of the distribution of municipalities with potential for additional residential demand in the MMR.

Figure 6 shows the results geographically. The first variant "4 days" shows a concentric distribution of potentials clustered around the City of Munich. The outer border of the MMR is almost bare of any potential. There are more densely clustered potentials to the north of the City of Munich than to the south. A corridor-type spread of potentials only emerges along some of the more important transport axes, reaching as far as the larger cities such as Augsburg, Ingolstadt, Donauwörth, and Rosenheim. The appearance of "islands," i.e., isolated and dispersed potentials, is rare. All in all, this means that a slight reduction of the average office presence to four days does not have a strong enough impact as a push-out or centrifugal force to distribute the potentials in a meaningful way. Rather, the highlighted areas in

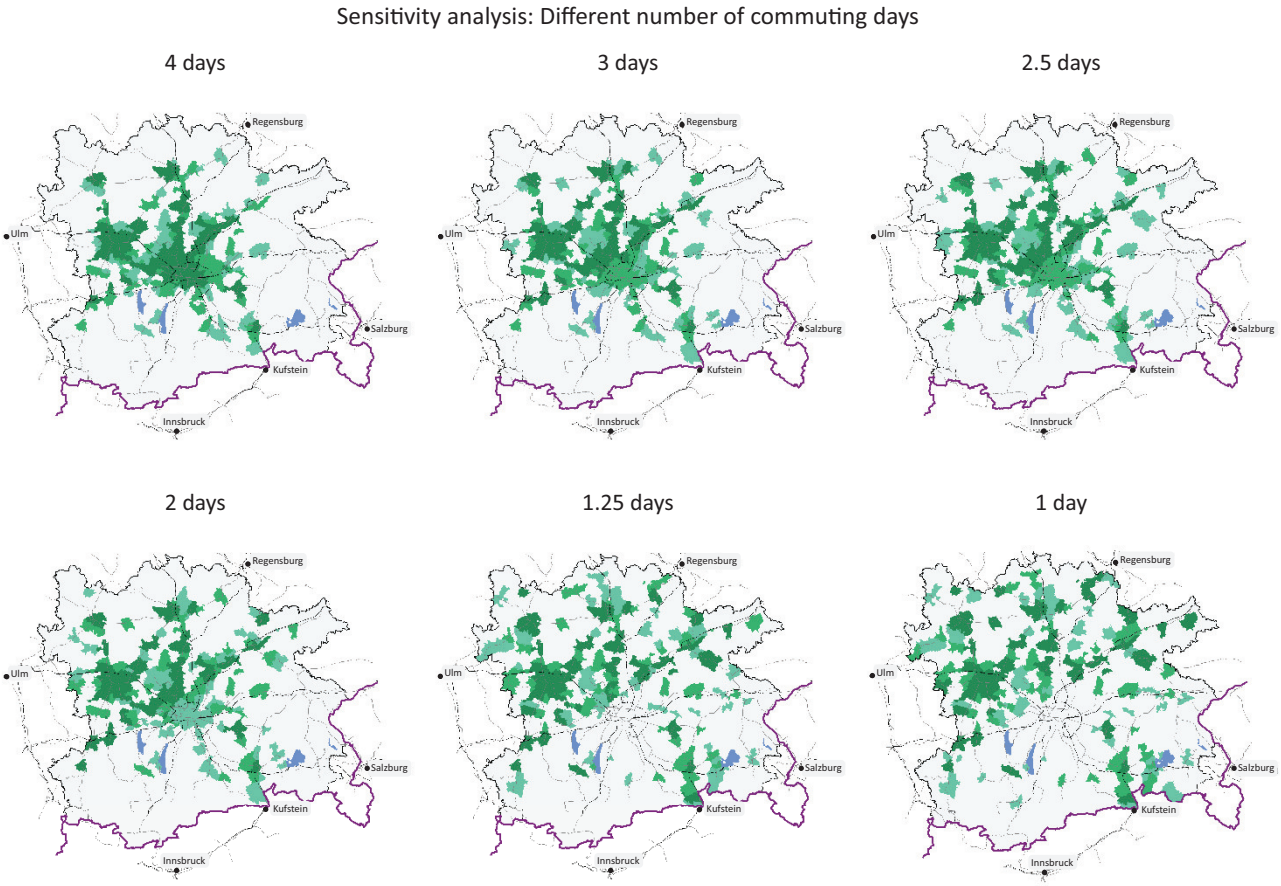

Figure 6. Sensitivity analysis with different β values that represent the change from five to fewer commuting days.

the map are similar to those that have already been destinations of suburbanisation in the past. Over the course of gradual reductions in the average number of commuting days, we observe (a) dissolution of the clustered potentials in the MMR's core around the City of Munich, (b) the City of Munich loses its potential only after a reduction to 1.25 days, (c) a significant increase in the formation of "islands," and (d) the municipalities towards the MMR's exterior border gain in potentials. Comparing the most extreme scenarios "4 days" and "1 day" of average commuting inspires the thought experiment of an explosion of a "clump of potential," by which the dominance of the core is replaced in such a way that the periphery takes over the core's initial shares of potentials. This exercise of sensitivities yields the main insight that the less often an individual commutes to work per week, the more likely it is that they will settle further away from their workplaces, which are spatially clustered in the core. Less office presence enables people to leave crowded, highly accessible, residential areas that are characterised by high prices for rent or real estate. Our premise, which is that people that commute rarely (such as one or 1.25 days in our example) tend to exhibit a much greater willingness to spend commuting time, is in line with the findings of de Vos et al. (2018). According to these sensitivities, WFH could on the one hand contribute to urban sprawl, but on the other hand to an easing of housing price differences across the region. However, for significant sprawl to take place in the MMR, the average number of commuting days would have to fall to less than two days a week.

The stability of the ranks in the WFH index between the different variants does not become clear from the maps in Figure 6. Consider, therefore, Figure 7, which compares the ranks of the WFH index variants with one, two, three, and four days of commuting per week with the main variant of 2.5 WFH days per week. In the total of five scenarios, a municipality can feature at most five times in either one of the three potential categories "high," "medium," or "low." The colours in the plots represent the number of occurrences in any of the potential categories without differentiating between the categories (i.e., assigning a counter with value "1" in each case). As discussed in Figure 6, the picture is quite stable with three almost perfect correlations in the cases of two, three, and four commuting days. A clear distinction emerges when commuting is reduced to one day per week, in which case the potentials are spread more unevenly across space. Due to the functional form of the accessibility measure

$$A_i = \sum_j \frac{W_j}{e^{\beta d_{i,j}}},$$

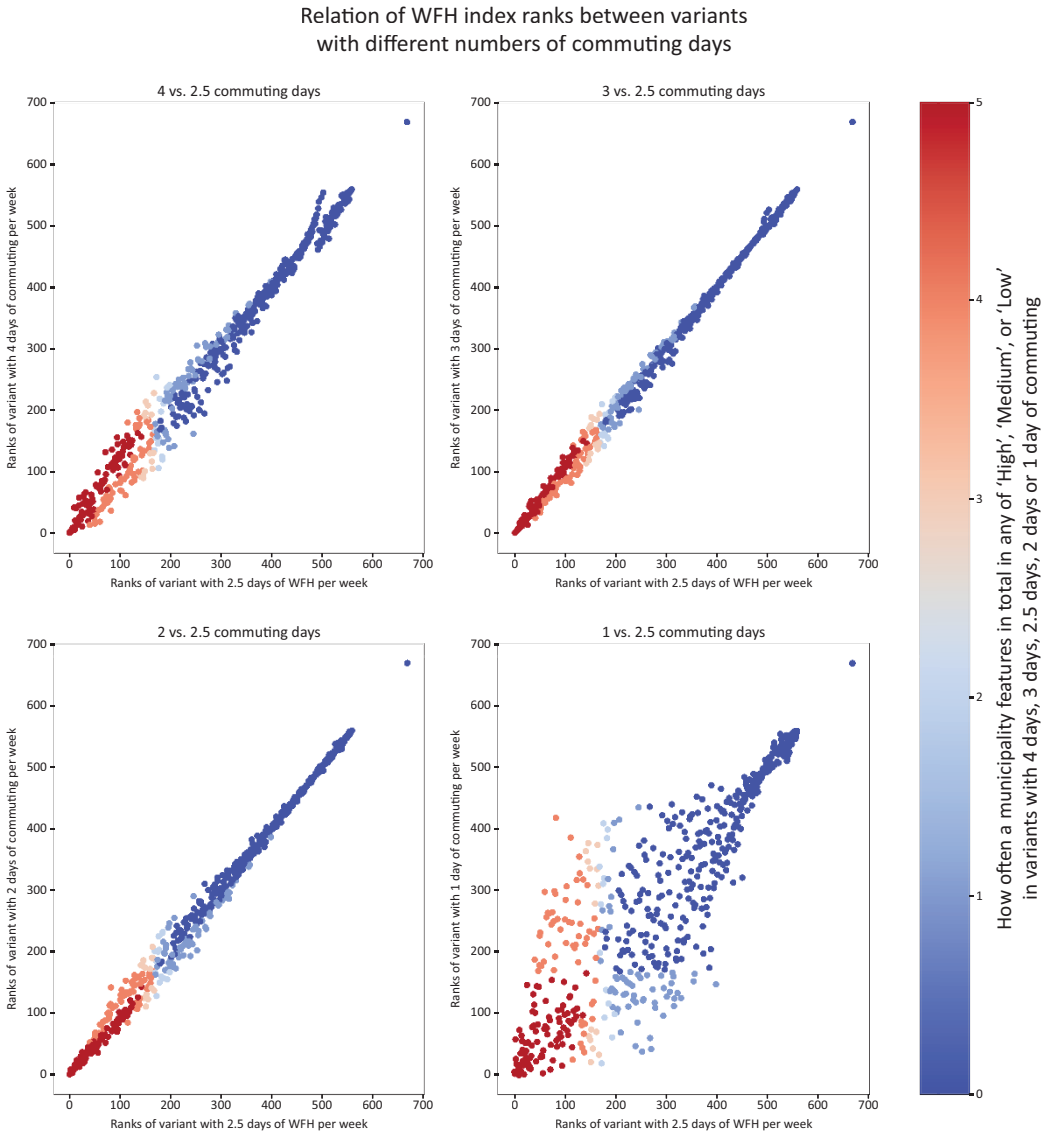

Figure 7. Sensitivity analyses with different β values that represent the change from five to fewer commuting days.

a reduction of β by x leads to a disproportionate, more than x increase in accessibility. Since the mechanism of the measured change in accessibility from five to less-than-five days of commuting per week is $\Delta A_i = A_i^{new} - A_i^{5\ days}$, the smaller β in A_i^{new} gets the disproportionately larger ΔA_i becomes. This is the technical implementation of the underlying logic that low commuting frequencies increase the willingness to spend more commuting time per trip. Finally, this translates into gradual reductions of the correlation between the main WFH index variant and those with lesser commuting frequency.

6.2. Weights per Indicator

In this section, we show how the overall index reacts to changes in its components. To visually assess the robustness of the WFH index when varying the weights, we present four new variants in Figure 8 and refer to Table 2 for the weighting of the variants.

In Variant 1, the weights of accessibilities are each reduced to increase the weights for housing costs. This configuration of the WFH index presents a picture of potentials more spread out towards the fringes of the MMR. Since housing prices in the MMR's core in Munich and neighbouring areas are significantly higher than elsewhere, this outcome does not come as a surprise. Instead, the areas around Donauwörth, Landshut, and Mühldorf gain in potential.

Variant 2 analyses which municipalities would pass the test of demanding WFH individuals who require a fast broadband connection (with 90% of households in a municipality connected to at least 100 Mbit/s instead of only 50 Mbit/s). Raising the minimum broadband capacity threshold leads to a thinning out of the total number of municipalities with potential from 168 down to 96. The result is basically a slimmed-down version of the main variant. Many of the "high" potential municipalities in the main version of the WFH index survive this broadband stress test and are still present in Variant 2.

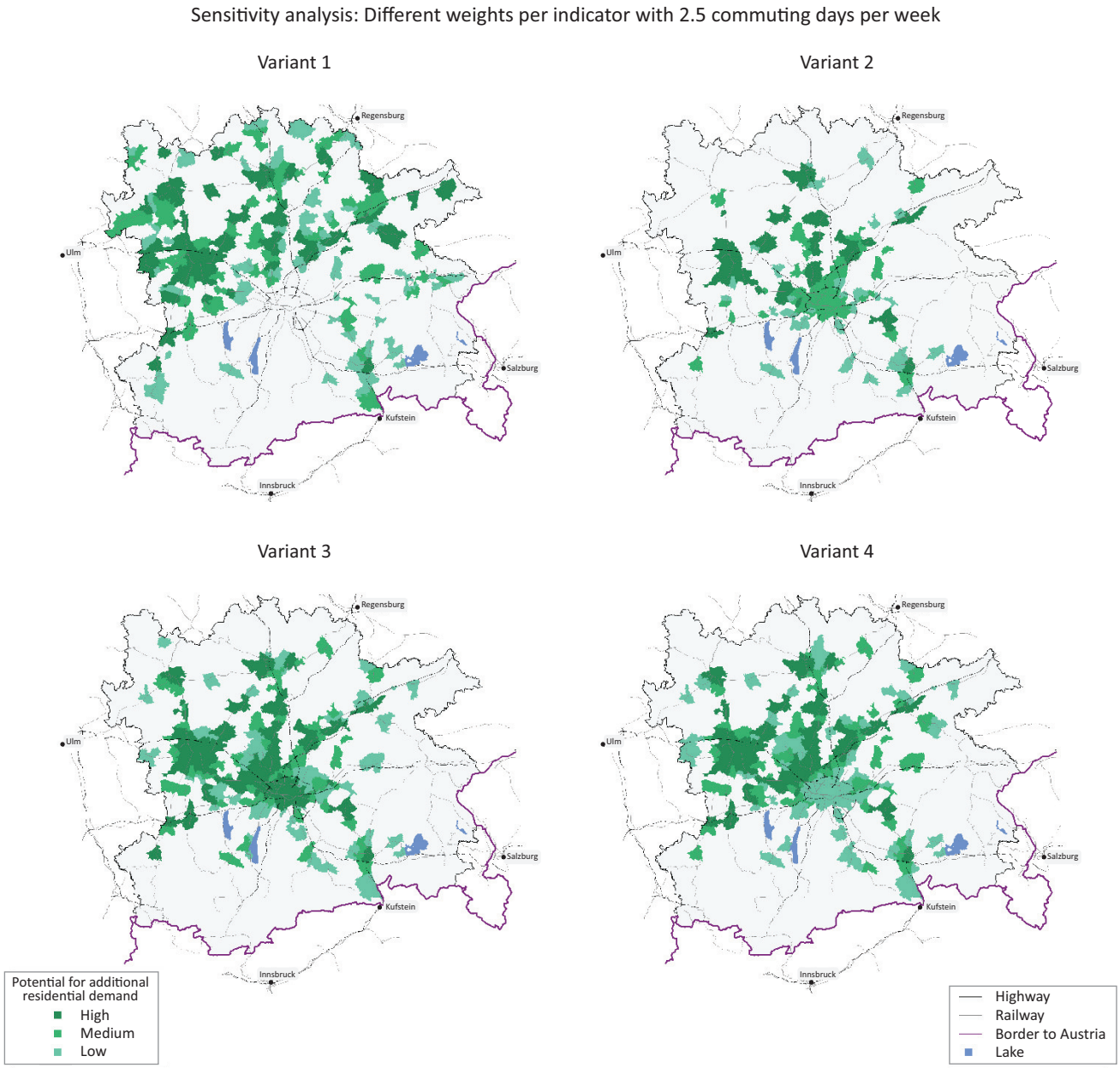

Figure 8. Sensitivity analyses with different weights of sub-indicators.

While urban agglomerations have introduced high-speed broadband, many rural areas did not do so at a comparable pace. Therefore, Germany is still characterised by a high regional variation in broadband availability (Gürtzgen et al., 2021).

Variants 3 and 4 suspend the previous equal weighting of public and individual transport accessibilities to identify different preferences of households between the usage rates of public and individual means of transport. Variant 3 weighs "public" more than "individual" and vice versa in Variant 4. The pictures reveal no significant changes apart from the City of Munich showing "high" potential in Variant 3 and "low" potential in Variant 4, again showing that the regional variation in public transport accessibility is a lot larger than for individual transport. Munich is highly accessible with many and frequently serviced public transport connections so that it outdoes more car-accessible municipalities. The other slight changes in potentials for smaller municipalities do not follow a systematic pattern.

In Figure 9, the rank correlation between the main WFH index variant with 2.5 WFH days per week, as explained in Section 4, and the four variants introduced above in this sub-section are shown with different modifications. The variants are plotted in the same order as in Figure 8. Similar to the map in Figure 8, the rank correlation for Variant 1 with higher housing weights shows the largest deviation. This proves that there are indeed significant regional disparities in housing costs. We decided against such heavy weights for housing costs because the decisive motivation for the WFH index is the mechanism of changing accessibilities through less commuting.

Table 2. Weights of WFH index variants in Figure 8.

	Alternative weights of components in WFH index								
	Accessibility		Housing costs		Internet	Cultural and natural amenities		Demography	Supply
Variant	Public	Individual	House purchase	Flat rentals	Broadband (min. speed: Mbit/s)	Amenities	Vacation homes	Young adults	Groceries
Main	25%	25%	10%	10%	15% (50)	5%	5%	2.5%	2.5%
1	15%	15%	20%	20%	15% (50)	5%	5%	2.5%	2.5%
2	25%	25%	10%	10%	15% (100)	5%	5%	2.5%	2.5%
3	30%	20%	10%	10%	15% (50)	5%	5%	2.5%	2.5%
4	20%	30%	10%	10%	15% (50)	5%	5%	2.5%	2.5%

The second variant with a higher broadband minimum threshold visualises the filtering out of all municipalities that fail to reach the threshold. Leaving those aside, the rank correlation is nearly perfect. Finally, Variants 3 and 4 are almost identical and both nearly perfectly correlated with the main variant.

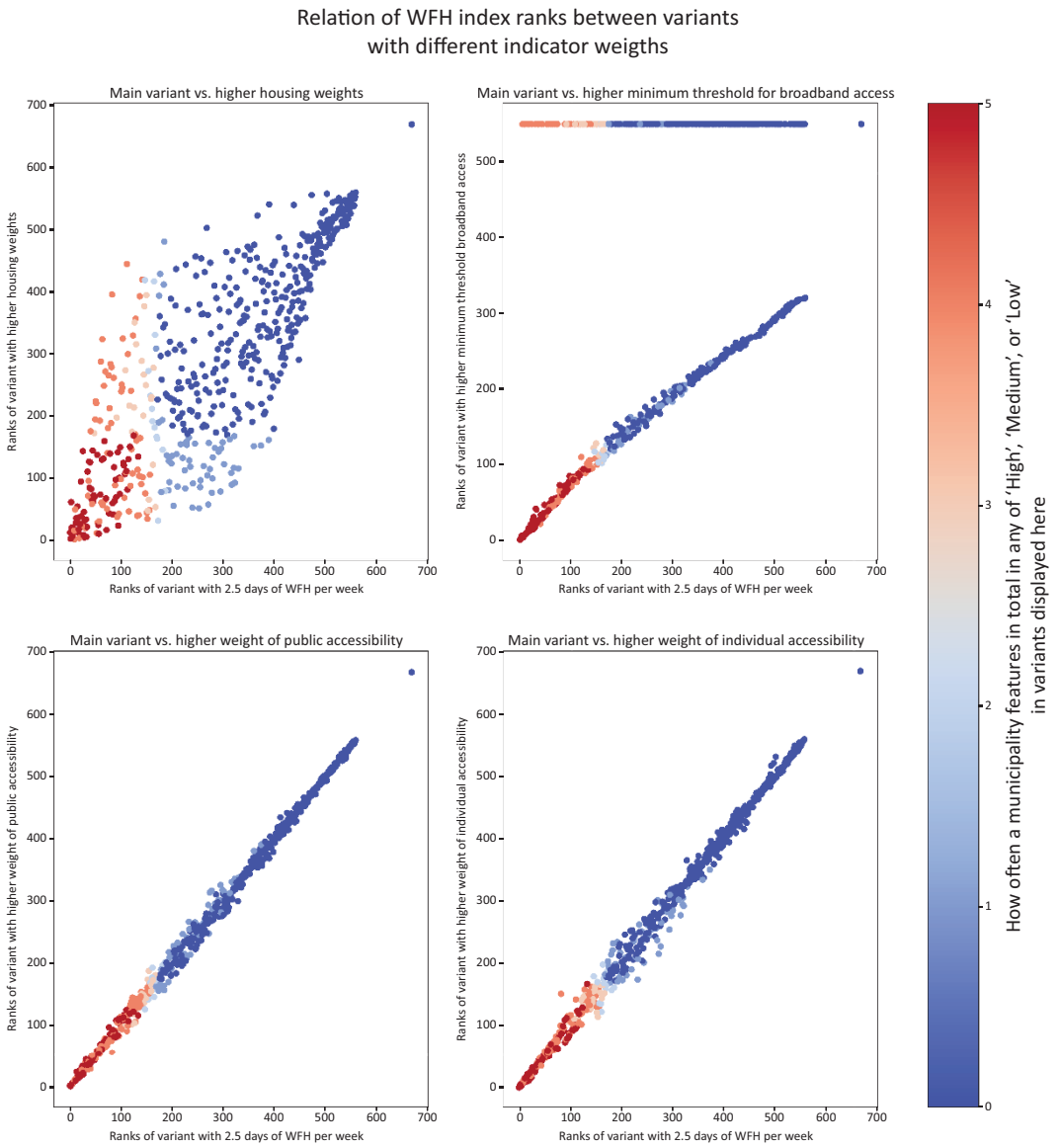

Figure 9. Sensitivity analyses with different weights of sub-indicators.

6.3. Functional Form

Delventhal and Parkhomenko (2021) argue that the disutility arising from commuting is only experienced on the days commuted to the job and therefore use the functional form $\beta e^{d_{i,j}}$ for the commuting cost. This form changes the commuting costs proportionately to changes in the distance decay β. Our employed functional form

$$A_i = \sum_j \frac{W_j}{e^{\beta d_{i,j}}}$$

causes disproportionate changes after alterations of β. This means that a doubling of β leads to more than a doubling of commuting cost. Inversely, as we associate $\beta = 0.035$ with five days of commuting, and for instance, $\beta = 0.0175$ with 2.5 days of commuting, this reduces commuting costs disproportionately with decreasing commuting frequency, which we argue for in a similar vein as de Vos et al. (2018), namely that the willingness for longer single commute trip durations increases with decreasing commuting frequencies.

6.4. Total Commuting Budget

An objection could be made against the assumption of keeping the total weekly commuting time budget constant. Rational agents would want to reduce both commuting frequencies and trip durations. To check this, we adjust the computation of the accessibilities such that we exclude relations that exceed one-way trip duration thresholds of 30, 45, 60, and 90 minutes respectively. An exclusion means that such *i*–*j* relations equal zero and thus do not increase municipality *i*'s accessibility. We plot the ranks of the WFH index without a maximum commuting budget (which is the main variant from Section 5) against the ranks of WFH indices with restrictions on one-way commuting trip durations as mentioned in Figure 10. It becomes evident that with decreasing trip duration thresholds, the correlation in ranks becomes less pronounced.

Overall, our sensitivity analyses allow us to estimate the robustness of our initial variant. The fundamental structure of the WFH index prevails, except for extreme configurations.

7. Comparison With First Evidence

In this section, we check the housing price developments after the onset of the Covid-19 pandemic. We use a more recent extension of the data set by the RWI—Leibniz Institute for Economic Research (Boelmann & Schaffner, 2021) that covers the period from April 2020 to June 2021. We group the observations by the WFH index categories "high," "medium," "low," and "no potential" as before. Observations from April to June 2020 are grouped together into "2. Quarter 2020" (second quarter of 2020) and observations from April to June 2021 make up "2. Quarter 2021" (second quarter of 2021). Observations are differentiated with respect to "house purchase prices," "flat purchase prices," "house rent prices," and "flats rent prices." We omit all observations that have non-unique identifiers to reduce the likelihood of errors. To establish comparability, we compute average prices per square meter. Therefore, we also omit all observations that have missing data on the number of square meters or price data. The results are presented in Figure 11.

The pattern is remarkable for house purchases. While all categories with potentials display positive slopes, the group without potentials has a negative slope. The steepest rise in prices occurred for the group with "high" potentials, overtaking "no potential" as the leader with the highest prices in 2021.

For flat purchases, the highest levels and the steepest rises are again in the group "high." The "medium" category displays the second-strongest increase in prices. "Low" and "no potential" have nearly identical slopes, but "no potential" is on average considerably more expensive.

When it comes to renting houses and flats, "high" is in both cases clearly the most expensive category. However, the steepest rise for renting houses appeared in the ranks of "medium." Again, "no potential" became cheaper. As for renting flats, "high" became cheaper by €0.72 per square meter on average. At the same time, all other three categories saw increasing prices for renting flats.

Taken together, this glimpse of short-term price developments after the onset of Covid-19 in Germany shows that the municipalities associated with favourable WFH conditions actually exhibited the strongest price increases, probably induced by higher demands. Purchase prices, in particular, have risen steeper than renting prices, which is in accordance with many recent public statistics and newspaper articles in Germany.

8. Implications for Spatial Planning

This study illustrates tendencies toward more metropolitan decentralisation in the wake of Covid-19, induced by a general shift to more WFH. We analyse which municipalities could gain in potential for additional residential demand. We established that the degree of decentralisation depends on the number of weekly commuting days, which becomes more discernible when this number decreases, and that significant decentralisation emerges with less than two commuting days on average.

From a planning perspective, the result is ambiguous. Decentralisation of residential demand within a metropolitan region could ease urban housing markets in the core, as Bauer et al. (2021) note, which is particularly relevant for the area studied. Conversely, stagnating peripheral municipalities may experience revitalisation (Horx, 2020), especially in light of the accelerated structural change in the retail sector (Adam & Klemme,

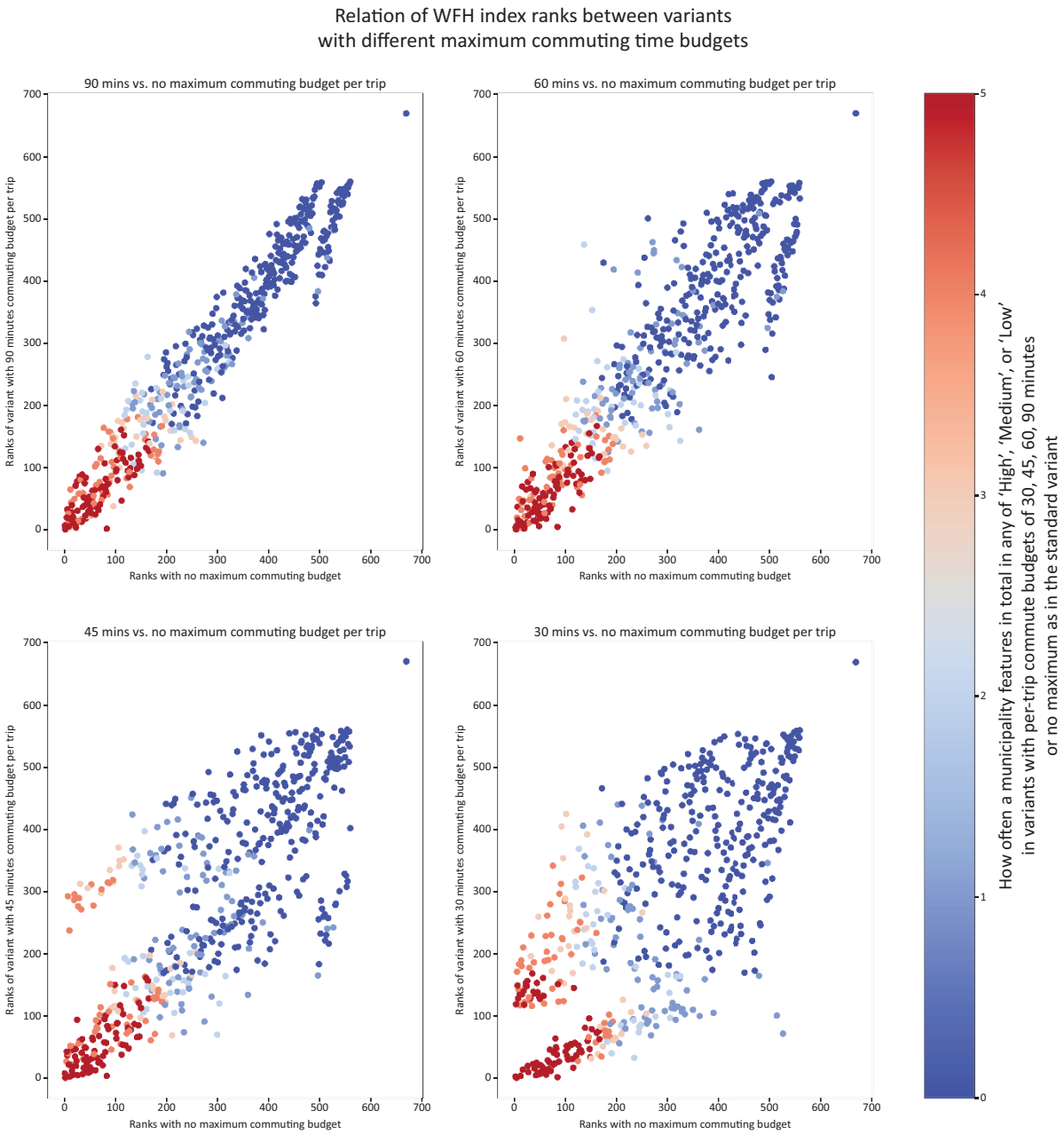

Figure 10. Comparison of rank correlations between WFH index variants with different commuting trip thresholds.

2020). Particularly recognisable is the potential in the "secondary cities" and their surrounding suburbs that might function as "substitutes" for the City of Munich by providing urban amenities together with affordable housing. Unlike more peripheral areas, they also offer residents favourable access to the City of Munich by public transport. Metropolitan planners thus have the opportunity of easing the strain on the core's density by strengthening Munich's urban surrogate cities. However, decentralisation endangers ecologically valuable green space through urbanisation. More dispersed settlements increase the share of cars among transport modes if the public transport infrastructure is left unchanged. This leads to higher greenhouse gas emissions and congestion. Furthermore, the inhomogeneous opportunities to work from home between different jobs threaten to exacerbate a socio-spatial divide because not all can reap the benefits of an extended set of options for residential choices.

Transit-oriented development offers an obvious option for a more resource-efficient adaptation to the new situation, especially where we identify underutilised public transport nodes or other local sub-centres in municipalities with potential in the WFH index. Where extant, urban brownfields could be reactivated. Pending a higher acceptance of public transport after the pandemic, transit-oriented development would ensure that at least a share of newly created traffic is more

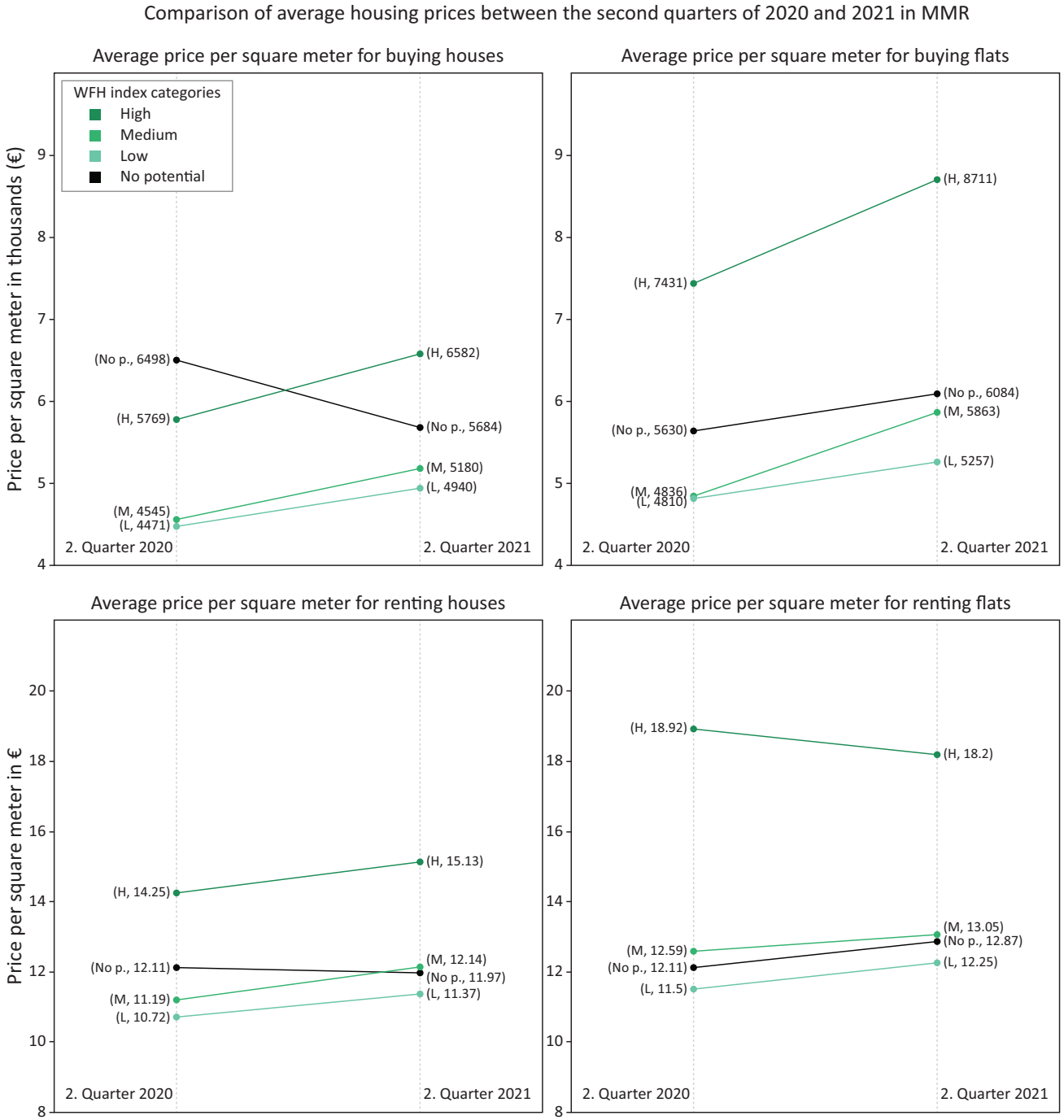

Figure 11. Comparison of average housing price developments from April–June 2020 to April–June 2021, differentiated according to WFH index categories. Notes: For "house purchases," there are 5,217 observations in 2020 and 3,566 in 2021; for "flat purchases" 6,675 observations in 2020 and 5,480 in 2021; for "renting houses" 1,671 in 2020 and 1,281 in 2021; and for "renting flats" 16,410 in 2020 and 18,994 in 2021. The WFH index categories are from the main variant, as explained in Section 4.

environment-friendly and space-saving than a development with a focus on individual transport. Co-working spaces at sub-centres may constitute a compromise between short commutes and physical separation of the places of residence and work. Importantly, digital capacities such as broadband networks must comply with high standards. Municipalities that face a loss of residents, in-commuters, and shopping customers could suffer from vacancies and the negligence of buildings' maintenance, thereby lowering residential appeal. This, in turn, facilitates a greater mix of land uses by attracting cultural, social, or non-profit activities as well as alternative forms of residential usage (Adam & Klemme, 2020). In line with prognoses from before the pandemic,

Kunzmann (2020) expects that retail stores will serve as mere physical displays for firms to entertain and inform customers rather than as places of selling, the process of which will take place online instead. A flexible and easily adjustable public space is important for a successful adaptation process. Particularly those individuals who cannot claim WFH are presented with an opportunity to render towns more attractive and affordable (Mallwitz, 2021).

9. Conclusion

This study was undertaken during the Covid-19 pandemic. That means that it is an ex-ante simulation without long-run ex-post evidence to test or verify the results. After the pandemic is over, in the medium and long run, it will be an interesting ex-post study to analyse residential movements in the light of locational factors. Our main result is that only a drastic reduction of commuting days per week for large shares of the working population would significantly alter the spatial distribution of residential demand. As this study is focused on an isolated, rather concentric metropolitan region, it ignores impacts from a wider spatial consideration. The natural consequence would therefore be to extend this examination to a national context. Fast, long-distance means of transport like high-speed rail facilitate commuting over longer distances. As there are larger price differences in real estate and housing rental markets nationally than within the MMR, WFH could entail a completely new dimension of the spatial distribution of residential locations. The residential adjustment process of households could entail second-round effects with firms adjusting their settlements. This would have far-reaching consequences on the urban fabric as offices and factories become abandoned and available for new usages. Finally, implementing an agent-based modelling approach to account for different types of persons that exhibit unique qualities regarding WFH possibilities and locational or lifestyle preferences could help to gain further insights into future residential patterns.

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Conflict of Interests

The authors declare no conflict of interests.

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Article

The Gender–Poverty–Mobility Nexus and the Post-Pandemic Era in South Africa

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Abstract
As part of long-term comparative research into the Gauteng City-Region, this article presents mixed-methods studies in the informal settlement of Denver, located in the industrial belt southeast of Johannesburg's city center. It unpacks the results of focus groups, ethnographic and expert interviews, as well as mapping with an innovative smartphone tracking application, comparing everyday life for several households in this area before the pandemic in 2019 and during the pandemic in 2020. Findings show that the pandemic exacerbated the disproportionate burdens related to gendered roles of household management, childcare, and mobility, both on the macro- as well as the micro-scale. The article thus defines the "gender–poverty–mobility nexus" that shapes space and everyday life in the Gauteng City-Region, precluding places like Denver from overcoming their marginality. Post-pandemic planning policy could be transformative for such spaces if it can build on this knowledge to better identify the needs of these vulnerable social groups and connect them to opportunities. It concludes with suggestions on how these empirically revealed dynamics could be translated into responses on the urban and regional scales, in the name of more equitable, resilient planning futures for Johannesburg and beyond.

Keywords
Covid-19; Denver informal settlement; Gauteng City-Region; gender inequality; infrastructure development; Johannesburg; mobility; poverty; South Africa

Issue
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1. Introduction

When the Covid-19 pandemic arrived in South Africa, the nation underwent one of the worldwide strictest lockdowns: no movement outside the household except for essential services like grocery shopping and medical care, and not even sales of alcohol were permitted (Smart et al., 2020). The normally pulsating city of Johannesburg, center of the regional and national economy (Abrahams & Everatt, 2019), suddenly came to a grinding halt. And all of this occurred in the middle of a large-scale, collaborative research project into how transport infrastructure is used by residents of several sites in Johannesburg and Maputo, Mozambique, with the aim of locating people's lived experiences relative to government transport plans and policies. Despite participants' everyday lives and corresponding patterns of movement upended, the project continued with adapted methodologies, shedding light on the complex intersections between household gender relations, poverty, and mobility.

Where the data collected in this project became particularly interesting was in the informal settlement of Denver, in the center of the Gauteng City-Region (GCR) in South Africa. Located in the industrial belt southeast of the city of Johannesburg's central business district, this area of less than two square kilometers housed more than 7,500 people at the time of the last national census (Firth, 2011). Several households from Denver participated not just in the 2020 project but had been involved in four total studies between 2015 and 2020.

This amalgamated longitudinal data, which primarily speaks to the everyday experiences of households navigating this urban region, reveals the "nexus" between gender, poverty, and mobility, as well as how it was exacerbated by the Covid crisis in a number of intersectional ways. It serves as a microcosm for the dynamics that shape the everyday production of the urban by the people as they attempt to negotiate this complex space and overcome their extreme marginality (Howe, 2021a).

This article thus presents results from this range of mixed-methods studies in Denver, demonstrating how the three aspects of gender, poverty, and mobility mutually constitute one another in their relation to space. First, it briefly contextualizes the area and its relevance for the research projects, along with the utilized methodologies. Then, it discusses the three aspects of the proposed "nexus" that perpetuate inequality, drawing information from mapping and interview material, primarily from 2019 and 2020. The article also unpacks the pandemic-specific findings, noting that the pandemic exacerbated the disproportionate burdens related to gendered roles of household management, childcare, and mobility on the individual level and on the micro- and macro-scale. Finally, it concludes with a discussion of the implications of this kind of research, and how it could possibly contribute to a more equitable policy approach in the post-pandemic era.

2. Contextualizing Denver

The GCR includes the major metropolitan areas of Johannesburg and Pretoria, and despite comprising only 1.5% of South Africa's total land mass, the greater provincial area has a gross domestic product of over 100 billion USD per year and accounts for approximately 35% of the country's total GDP (Statistics South Africa, 2017). The story of the GCR began with mining along the gold-containing ridge called the Witwatersrand; sites of extraction were linked to emerging urban centralities locally but were financially and politically connected to the rest of the world through global flows of capital and labor (cf. Harrison & Zack, 2012). The intensive urbanization of the region over the 100 years that followed ingrained these initial patterns of privilege and poverty, culminating in the system of apartheid that asserted control over black bodies in an attempt to create a complete overlap between race, class, and space (Whitehead, 2013).

Rapid growth within what initially appears to be a tightly controlled system also characterizes the informal settlement of Denver. The area was first developed in the late 1940s as housing for single men to work in Johannesburg's industrial areas (Beinart, 2014). At the time, just predating the official period of apartheid, non-white populations were not legally permitted to reside in urban areas; male laborers were restricted to specific locations, which included single-sex "hostels" built by the proprietors of mining or industrial areas (the contemporary state of the hostels in Denver today is shown in Figure 1). In part because segregationist ethnic divisions were perpetuated by this system, laborers from other regions and provinces were clustered deliberately; however, these concentrations also occurred due to the agency of people, for example advertising jobs through their own networks that afforded them small levels of power. "Migrants from particular areas held virtual monopolies over jobs in specific factories," explains James (1999, p. 25) in her history of female migrants arriving in Johannesburg. Denver was strongly linked to the Zulu ethnicity (Mathiba, 2019), and historically served as a means to reside in near proximity to economic opportunities (Scorgie et al., 2017).

These cultural enclaves were therefore extensions of regional areas within and without the city's urban space through personal networks (Cross et al., 1998), and migration began to dissolve the strictly male construct of the Denver hostels. Indeed, as early as the 1960s, women and children began to move into the area, constructing their own housing directly adjacent to the space of the hostels. As the apartheid system was gradually disassembled from the 1980s forward, when there were no more legal restrictions on where people of racial groups could live and move around, these settlements intensified and became less pronouncedly gendered. Nevertheless, research revealed that the dynamic of men residing in the hostels while a mix of genders (although mostly women and children) resides in the surrounding informal settlement, still persists today. It also remains a primarily residential area, within the greater industrial urban fabric, and therefore lacks even the most basic access to services and amenities.

The circumstances of this settlement area, as such, are particularly precarious; Denver is considered one of the most dangerous places in the city-region, in regard to the safety of people and the built environment (interview with a spatial planning professor, 2014; Maseko, 2015). Outside the hostel, the built environment primarily consists of corrugated metal shacks, aligning with stereotypical imaginings of an informal settlement (see Figure 2 for a female participant's photo of her family in this space today). As one participant explained:

> The place here is small, so what one has to do is assess what's of importance, to see if I can live with this thing or not live with it…how much do I want it. Like here…what I think is important is a bed to sleep on, a stove to cook with, and maybe a TV and a radio. (D07)

The area includes 27% formal housing, 30% apartment buildings, and 43% informal housing (Statistics South Africa, 2012, as cited in Kgantsi et al., 2018). Extreme fire events are an ever-present threat among the shacks in particular; hundreds were left homeless after large-scale fires in 2010 and 2018 (SAPA, 2010), and, during the course of studies in 2019 and 2020, one household was significantly impacted by a catastrophic

Figure 1. A view of the Denver Men's Hostel. Source: Photo by the author, 2019.

Figure 2. The family of one of the female heads of household from Denver draws water from a communal tap to do laundry, next to a water trough built after a serious fire. Source: Photo by participant D6, 2019.

fire loss (D6). As research continually revealed, vulnerable social groups, particularly women and children, have very few options in Denver (Willan et al., 2020). Because it is emblematic of the most difficult, entrenched conditions of poverty and inequality that can be observed in informal settlements around the GCR and had seldom been the subject of previous academic study, it was selected as a particularly important site of investigation beginning in 2015.

3. Methods and Study Participants

A mixed-methods approach, including focus groups, ethnographic and expert interviews, as well as mapping with an innovative smartphone tracking application was developed over the course of several projects, culminating in intensive studies in Denver in 2019 and 2020. There were two participants from Denver in a 2015 study, in which the primary purpose was to track individual movements and conduct detailed interviews with a total of 30 people living in informal settlements throughout the GCR, as they went about the routine activities of their everyday lives. Volunteered geographic information (VGI) including GPS locations, modes of transportation, and a survey of demographic data was collected by this application, and provided to participants along with a smartphone, for 30 days. This data was visualized as individual maps as well as filtered into maps along lines like race, income, or geographical location (Howe, 2021b).

For mapping, each GPS point collected can be visualized individually, or connected with colored lines that represent the participant's mode of transportation, primarily blue for walking and green for vehicular travel (see Figures 3–6). The application also presents as yellow when people are actively utilizing the screen of their phones. This is a feature automatically recognized by the mobile sensing of the phone. Small yellow points typically indicate waiting or a transfer point; longer yellow lines typically mean that people are walking while looking at their phones. This often indicates where a person has gotten on or off a taxi, which is a flexible procedure. The maps are thus relative and require contextualization, which is provided by discussing the maps with participants in follow-up interviews. There were three participants from Denver in a 2016 study that built on these methods but focused on a collection of VGI with several hundred participants of all backgrounds throughout the GCR.

The methodology proved to be most effective and rewarding with a relatively small sample size and with a mixed-methods approach, in which participants were first recruited in a personal manner to build trust, then conducted the smartphone tracking for several weeks, and finally discussed the maps as part of in-depth, semi-structured interviews. Thus, the studies conceived for the GCR in 2019 that focused on aspects of gender and mobility across a range of demographic groups and incomes, and in comparison with a range of areas in Maputo in 2020, followed this process: beginning with focus groups, recruiting several households to conduct VGI collection for two weeks, and finishing with interviews. Participant selection occurred through local community leaders, two of whom themselves also participated in several studies (which had political implications as well as social implications for the selection of participants). There were eight participants from Denver in July 2019 (five women and three men); half of them also participated in the 2020 study, which commenced just over a year later, in October 2020. This study had 12 participants from Denver (eight women and four men). Methods in both of these studies also included WhatsApp groups for each area, autophotography exercises, and audio journaling through voice notes. Digital communication played a pronounced role in the fieldwork undertaken during the Covid-19 pandemic.

The 2020 study primarily focused on how people living in what were considered marginalized areas of Maputo and Johannesburg used transport infrastructure and attempted to situate their lived experiences in relation to government transport plans and policies. The project conducted the methodology described above in order to approach household and micro-level experiences. In Denver, it was not possible to conduct a focus group due to the lockdown restrictions that applied during the time of fieldwork; participants were recruited through contacts from the previous studies. In all of the studies, consideration was given to demographic characteristics such as race, language, household composition, and level of income. The 2020 study also included a second component, comprising expert interviews with key actors in transport and infrastructure planning, such as transit planners and government officials with the Gautrain Management Authority, Gauteng Provincial Department of Transport, the City of Johannesburg Transport, and the City of Tshwane Transport.

In Denver, the structure of a household was often complex and sometimes hard to define; some participants lived under the same roof with three generations and had a large network of family members living far away from Johannesburg, in the province of KwaZulu-Natal (KZN; see Section 4). Total household incomes ranged from 2,500 ZAR (ca. 165 USD) to 7,500 ZAR (ca. 500 USD) per month. Spending on transport ranged from nothing, for those who primarily traveled on foot, to as much as 34% of their monthly household income (see Table 1). Because we had repeat participants and households across multiple studies, their everyday lives and patterns of movement could be compared before the pandemic in 2019 and during the pandemic in 2020. Two participants (D04 and D011) participated in all of the studies. All of this "longitudinal" data provided deep insight into the impact of household decision-making on the everyday activities of life, like work and childcare, constrained by the conditions of poverty and socio-spatial inequality that characterize Denver, and indeed much of the GCR. Combined with

Table 1. The 2020 Denver study consisted of 12 participants, including eight women and four men from nine households.

Participant and Household	Accommodation	Monthly Household Income	Monthly Transport Expenditure
D01 female, 2 adults + 3 grandchildren (ages 6, 3, 3): with daughter (28) Works as an artisanal miner	3 room shack	±R3,200 including child support grants	R400–500 per month (16%)
D02 male, lives with partner D03: 2 adults Works as a security guard	2 room shack, renting	Not reported	More than R500 per month
D03 female, lives with partner D02 Works odd jobs	2 room shack, renting	R4,000–5,000	R500 (10%)
D04 male, former partner of D012: 1 adult Student and politically active in the community	1 room shack	R2,500–R3,500	Doesn't use public transport
D05 female, 2 adults + 2 children (ages 15, 9) + 1 adult nephew who left the house because of the pandemic Community health worker	1 room shack, renting	R3,500 from work (sent as remittance home) R1,400 from grants R600 from shack rental +/- R5,000 in total	R112 (2%)
D06 female, 4 adults (partner + 2 adult children) + 2 grandchildren Works as a cleaner (CWP)	Owns 4 room shack	Just over R4,000 including grants and rental income	R120 (3%)
D07 male, lives with wife (D08): 2 adults + 2 children (ages 13, 6)	Owns a brick shack, also has a space in the hostel	Wife earns an income so doesn't know	Less than R500 — has a car
D08 female, lives with husband (D07): 2 adults + 2 children (ages 13, 6) + 2 adult children (23, 18) who sleep at the hostel	2 room shack	R3,000 (wife) + R5,000 (husband) R8,000	R1,200–1,300 — mostly on transport between JHB and KZN (16%)
D09 male, lives alone: 1 adult Works as a community safety patroller	1 room shack owned Rents out 2 other shacks	R2,500 + R700 (rental income) ±R3200	R450 on transport and petrol (14%)
D010 female, lives alone: 1 adult Works as a community healthcare worker	1 room shack	R7,500	Walks so doesn't spend money on transport
D011 female, lives with adult child and grandchild: 2 adults + 1 child	1 room shack	R5,000	R1,700 (34%)
D012 female, former partner of D04: 1 adult	2 room shack	R7,500	R1,600 (21%)

Source: Table data by Alexandra Parker.

the expert interviews in the second project component, the project also reflected on the question of who benefits from large-scale infrastructure projects, and what it means for people to be resilient in marginalized places like Denver.

4. The Gender–Poverty–Mobility Nexus

Synthesizing multiple years of mobility mapping with qualitative research and reviewing policy documentation pointed towards several factors that precluded Denver from overcoming its advanced state of marginality (Wacquant, 1996): gender, poverty, and mobility. First, the dynamics of gender between members of households, as well as perceptions about social roles and conventions were driven by "traditional" gender roles, but whoever earns money in the household tended to have the power. Second, the precarity of both life and the built environment in Denver meant that people often struggled to meet their most basic needs, and poverty took a variety of forms. Third, participants' lives almost always spanned between Denver as a "toehold" in the urban centrality and their "home," oftentimes in the province of KZN, driving macro-scale processes of urbanization (Howe, 2022). These divisions from apartheid, which were ingrained into social and spatial practices, continue to significantly impact life in Denver today. These findings can be loosely categorized, but they also cannot be severed from one another. The article thus describes their mutual constitution as a "nexus" of gender, poverty, and mobility.

4.1. Gender

Dynamics between members of the household are based on gender constructs, which determine how roles and resources are allocated. Previous research into the gendered space of the city in the GCR, for example, demonstrates how the socio-spatial inequalities established under apartheid as well as new, contemporary forms of inequality impact the everyday movements and spatial practices of women, subject to a form of "moral geography" that results in compromises and sacrifices for both mother and child (Rubin & Parker, 2017). These studies aligned with those findings, emphasizing very traditional gender relations and the role of "breadwinning" in determining power within complex, modern households (Rubin et al., 2022). Many people in Denver across the years implied that whoever earns money has more right to make decisions for the family, as noted by this participant in 2019:

> When it comes to cleaning and looking after the child that's [my partner's] job, she is responsible for those duties in the house as a woman. With regards to paying [bills] it differs. It all depends on who is working at that time. If we are both working…or let's say I'm the one who's working, that's my responsibility as a man. But if it happens that I'm not working, she is forced to help out so that life can go on. (D3)

Within this framing, however, there was a wide range of decision-making processes about how to allocate limited resources and who was responsible for which tasks in the household. As another participant from a different household stated: "The person who pays is the man of the house and when it comes to cooking, we alternate. Sometimes I cook and sometimes he does" (D03). Cultural traditions and politics also play an important role in the fashioning of gender relations; in Denver, this is shaped by its strong Zulu presence and links to "traditional'' expectations in the agricultural areas of KZN, from which many of the participants originated and sent significant remittances to. Denver thus acts as a form of the *entrepôt* described by Zack and Landau (2021, p. 1) as for "vulnerable and mobile people wishing to be in but not of the city," connecting in from the greater urban region.

This already indicates how difficult it is to disentangle aspects of gender from those of poverty within the space of Denver. Moments of individual flexibility towards certain specific tasks like cooking or doing laundry did exist, as indicated by the partner of the previously quoted participant:

> If you had come tomorrow you would've seen me carrying the laundry…just imagine me carrying this laundry around other men, carrying a skirt….I live with boys [in the Denver Men's Hostel, but] I iron that skirt. They will always judge, you know, Zulu people…they don't believe that a man can cook when a woman is around, they do cook here because females can't come in, but at home in KZN the wife has to cook. With others, they expect that the woman should pour water for them to drink. Can you not stand up and pour your own water to drink? (D07)

Yet despite these small moments, with the exception of one single father, childcare was solely the responsibility of female members of the households.

The female partner of the man quoted above in the 2020 study described how the Covid-19 pandemic had led to shifting gender roles in her household: She continued working while her two adult, male children did not; they began to shop, cook, and care for the household in ways that previously would have been unimaginable for any of them (D08). It is noteworthy that the couple quoted above had a comparatively higher income for the area, due to the wife's regular work. Future research could fruitfully investigate the links between the most pressing conditions of poverty and more progressive attitudes towards gender, perhaps in the case of financially successful female partners and whether or not this correlates with flexible attitudes towards gender roles. Otherwise, initial findings from the 2020 study, aligned with findings worldwide, indicate that the

Covid-19 pandemic largely exacerbated existing inequalities along gendered lines in particular as related to the burdens of childcare and household management (see next section).

4.2. Poverty

As the history of Denver indicates, this small plot of land adjacent to the Men's Hostel, embedded into the industrial belt, was never intended for residential purposes. Life is a daily struggle, as many participants said over the years in precisely these words, and "no one is in Denver by choice" (D1). However, the very centrality of the space and proximity to opportunities that can be reached on foot, without having to pay for transportation, is also the very reason why people accept these circumstances. It is therefore a kind of "toehold" or arrival zone in the city (Howe, 2022; Landau, 2016). A 2019 study participant described the choice to come to Johannesburg thus: "I came here with my husband. Because things were bad back home in KZN, I came looking for work here in Johannesburg, trying to make a living" (D08). She described accepting the precarity of the built environment as a necessity because they had no money to seek other options:

> We don't have formal structures; you build a house that's made of boards, it's built with wood and covered with a sail and there is no ventilation. At other times there are no windows, things like that. For me to say there is a bathroom, no. There is a bedroom this side and kitchen on this side…the rent here at the squatter camp is not expensive. With the little bit of money that you have, you try to live and support the people back home. (D08)

Poverty therefore appears not just as a lack of income, or as present in a space, but in the fragmenting of lives that occurs as poverty is spread across vast regional spaces (cf. Roy & Shaw Crane, 2015). Families are split, and people's spatial footprints regularly traverse extended urban regions of hundreds of kilometers. Without this labor, the GCR could not function as it does, nor produce the kind of GDP it sustains.

In fact, most respondents in 2019 and 2020 noted that they do not just send remittances, but have children living in KZN, ranging across all ages. One woman who participated in the 2019 and 2020 studies noted that she has two children; one lived with her and also took part in the project, while her second child was "back home" living with her aunt (D01). She travelled there once during the course of the VGI study, taking long-distance taxis for an entire day to reach her family (the pathway she took is indicated by the green lines in Figure 3). Another household of two married people noted that they have two children from different relationships, both

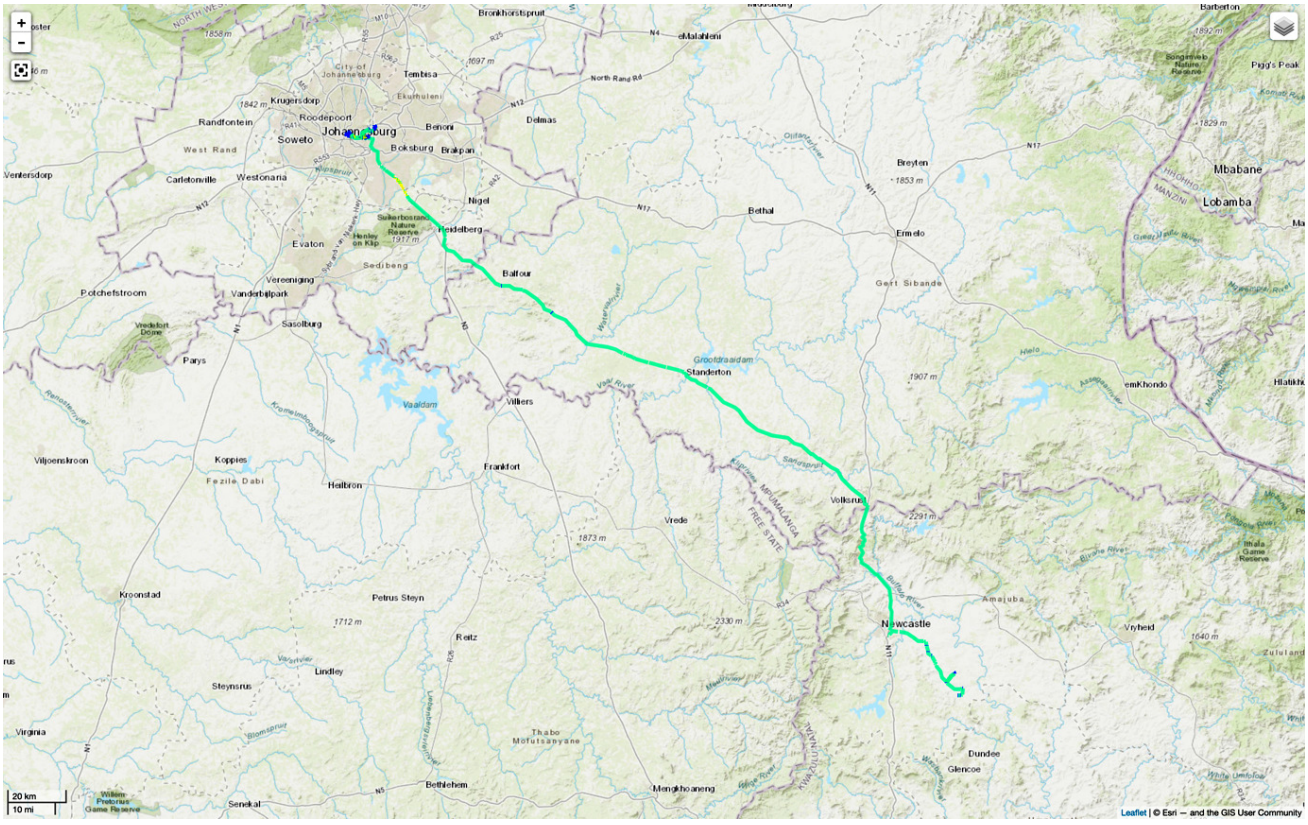

Figure 3. Map produced by the location data of participant D01. The green line indicates how she travelled with a minibus taxi "home" to KwaZulu Natal. Source: Map by Chantal Bekkering, 2020.

of whom live in KZN with their respective grandmothers (D02 and D03). These remittances exerted an extreme amount of pressure on study participants, who often reported having enough difficulty providing for themselves; most had irregular or temporary jobs, many of which could be described as physically unsafe (Charlton et al., 2022, p. 55).

There are strong gendered aspects to these choices about work and family life, and the spread of these activities between the GCR and KZN. But one of the most common underlying factors for fragmentation was related to income: the lack of money to support family members locally, because even in Denver life is significantly more expensive than in the villages of the adjacent province. Sending money home maximizes limited income. A male participant who took place in all the studies between 2016 and 2020 noted that "my whole family is in KZN. Here we just come looking for work so that we are able to provide for the family back home" (D04). Living in Denver was perceived, in a sense, as it was constructed during apartheid: Life in the city is a temporary, income-generating sojourn, and home remains on the periphery. Another related common factor was the desire to protect family members, children in particular, from the often-harsh conditions of Denver itself.

Contributing to the idea of the "nexus," conditions of gender and poverty snowball. Women in particular reported disproportionally shouldering the burdens of poverty, because not only is childcare their responsibility to manage on a daily basis within a multi-partner household (Rubin & Parker, 2017), they are subject to continual societal biases that impact their choices about how to use their time and money (Rubin et al., 2022). Like the quasi-incongruity of Denver providing both opportunity and ingraining precarity as a toehold in the urban environment, women are either the head of the household with increased pressure to provide financially while still fulfilling childcare obligations, or they are in a partnership in which their decision-making power tends to decrease if their partner is the "breadwinner."

4.3. Mobility

Mobility is also related to the idea of Denver as a place of arrival and access, in attempt to overcome marginality: It is not just near Johannesburg's CBD, but the physical infrastructure to get to other places, too, is usually accessible by walking or a short taxi ride. For example, the same VGI study participant (shown in Figure 3) usually remained in the area of Denver, walking around (indicated by the blue lines in Figure 4); she once took a taxi into the CBD (indicated by the green lines), and once to a wealthier neighborhood northeast of Denver to work as a cleaner, changing taxis at the Eastgate Mall. Transport was a major expense for the majority of the households, despite Denver's "central" location; several

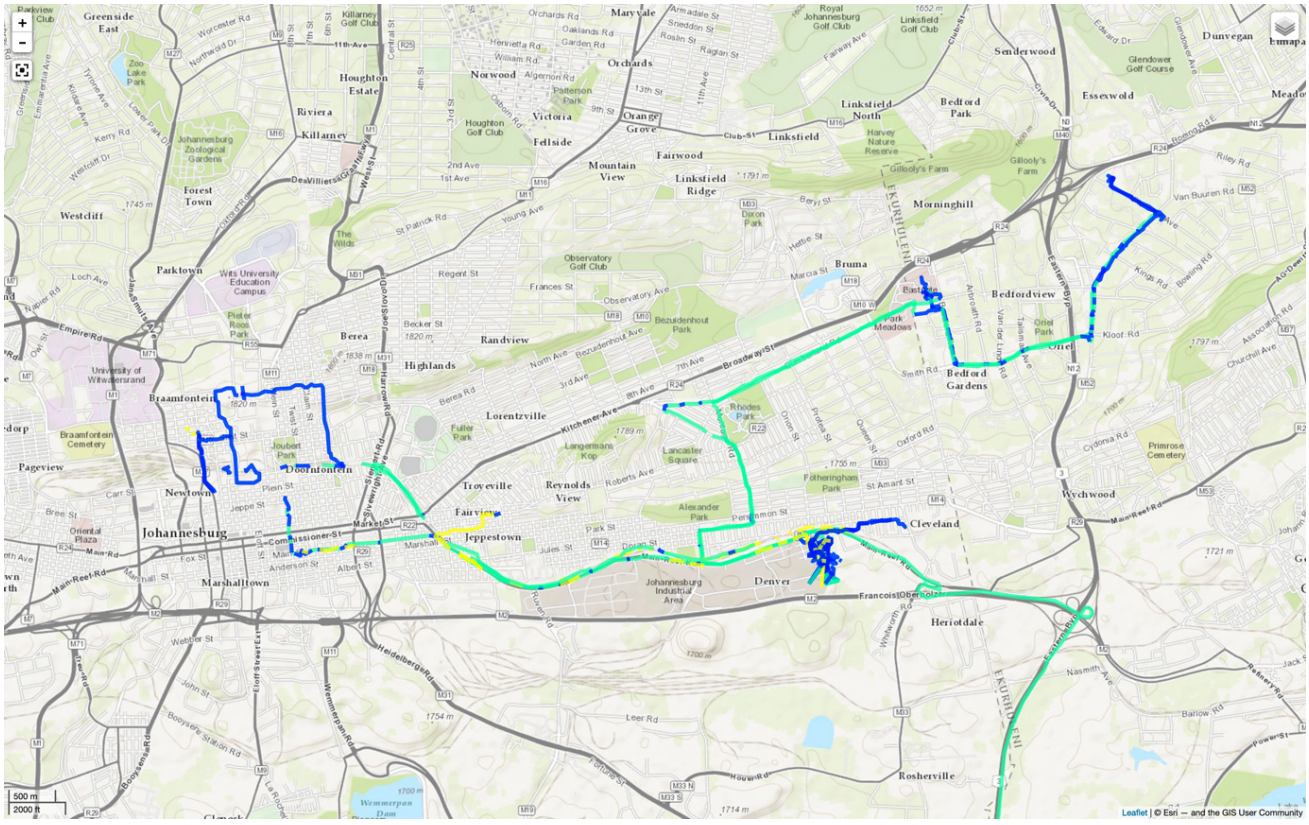

Figure 4. A map of typical patterns of movement by participant D6 around Denver, in which the blue lines indicate walking. Source: Map by Chantal Bekkering, 2020.

participants in each year of the study noted needing to make sacrifices in other areas in order to pay for transit. Again, this reveals the continuation of difficulties in work and income translating into everyday struggles of concerning mobility, as transportation often played an over-proportional role in the use of household resources, and how, in particular, people used their time.

As in many other case study areas in both South Africa and Mozambique from the entire range of studies, participants consistently talked about the difficulties of negotiating transport for conducting the activities of everyday life, like taking children to daycare and accessing services, and how high a percentage of their income is required to do so. These are often very complex negotiations, involving several modes of transport for different times of the day. Speaking about their household decision-making processes, one participant in 2020 noted:

> If it was up to [my wife] I would use taxis all the time, but [for] money issues. We realized that the money was not enough, and we would end up starving in the house. So, if it's like that I will walk, I will get used to it. I am a human being. (D02)

Both his and his wife's situation were complicated by the fact that a train stop several kilometers away was shut down during the Covid-19 pandemic (see next section). The train closing impacted the time it took them to conduct their daily activities as well as the expenses they accrued for needing to take a more expensive form of transport.

Once again, these experiences were different for men and women. Safety was a concern for most of the participants questioned in 2019 and 2020; for example, many described feeling unsafe in taxis due to dangerous driving. Unsafe walking due to the risk of being mugged—which people primarily described as doing out of financial necessity—was also typically mentioned by both genders. Yet the safety concerns, such as aspects of sexual harassment or rape, were experienced more acutely by women and contained more potential moments of physical violence beyond psychological judgement, as many previous studies have found (cf. Vanderschuren et al., 2019). All of these concerns were heightened during the Covid-19 pandemic (see next section).

5. The Impact of Covid-19

Moving through the urban fabric is a necessary part of everyday life, not merely for accessing essential supplies, but conducting the activities of caring that make work possible. This is true for the broader population; during the Covid-19 pandemic, there was a marked decline in the number and proportion of people travelling for work throughout the GCR. Culwick Fatti (2021) describes a noticeable decline in the proportion of people travelling to work and for job seeking, as well as an increase in the proportion of Gauteng residents whose most frequent travel motivation was shopping instead of working. She also noted that the overall length of trips decreased, suggesting that people maybe be traversing shorter distances, and conducting the activities of everyday life closer to home. However, people in Denver were at increased risk during the pandemic, first of all in the densely built environment of the informal settlement with many shared resources and a lack of ability to social distance; and second of all, because people needed to continue seeking or conducting work activities in person, with corresponding safety issues. This was a burden not just of precarity and income generation, but psychologically, as many people worried about needing to take their children on transport as well as about the judgement they faced for doing so.

Public transport in particular was rapidly identified as a prime site of coronavirus transmission (cf. Zhen et al., 2020) as well as an increased source of personal risk beyond the virus, as discussed above. Transport was limited and caused significant difficulties in accessing work and basic services, as many study participants noted in interviews. When asked in October 2020 what Covid-19 had changed about their daily lives, for example, one woman explained: "A lot of things, because even now I can't even look for work. Before, I was able to wake up and go job hunting. I can't go to a lot of places that I used to go to" (D01). This was in part due to strict lockdown conditions, but also because of the lack of available public transport, or, in Denver, conditions that were imposed upon the taxis. As one man described:

> There are no buses here around Denver. We used to have a train, but it's broken, and it's no longer running. It was easier when there was a train. I could move around much more easily, and I could get to a lot of places. So, the trains are not working anymore it's only taxis that are available, and these taxis are far too expensive. (D04)

The scaling down of transport operations thus had a "cascading effect on people's ability to earn an income" (Charlton et al., 2022, p. 15) across multiple sectors, from those using the taxis to those driving them. For example, one male participant working as a driver noted that he was driving significantly fewer routes during the pandemic, which impacted both his daily life and his ability to be a "breadwinner" for the family (his routes are indicated by the green lines in Figure 5). An older female participant described how she was "stuck" at home during the pandemic and rarely left her house at all (as evident from her extremely limited mobility depicted in Figure 6).

Because people, in general, became desperate for work during the pandemic, the experience of public transport was also reported as worse and more dangerous, both by participants who had been or feared being robbed, to the actual physical destruction of public transport infrastructure. Before the pandemic, for example in

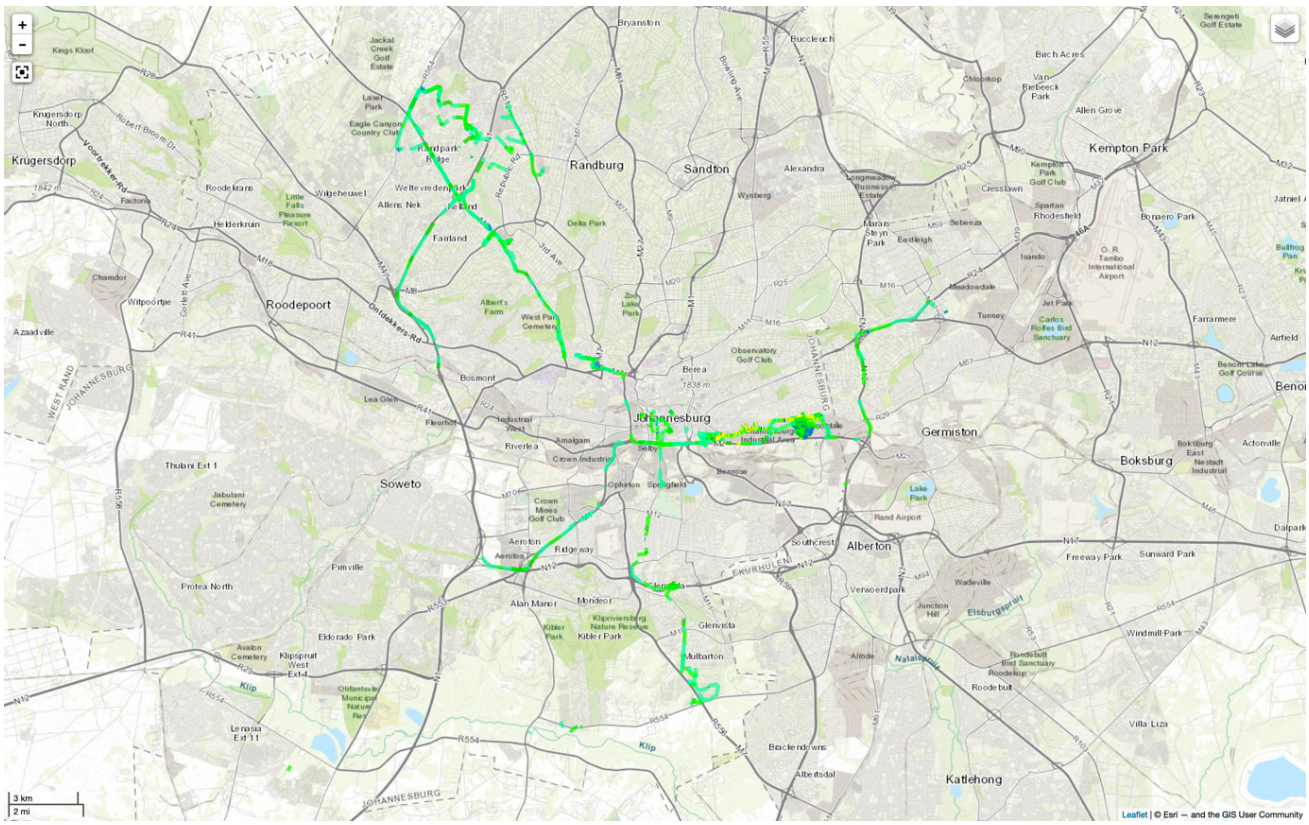

Figure 5. One participant working as a driver shows blue lines for walking around Denver, but otherwise many more green lines indicating vehicular travel throughout the greater Johannesburg area. Source: Map by Chantal Bekkering, 2020.

Figure 6. The presence of "markers" without connecting lines represents a day in which this Denver participant did not move more than 20 m from her initial location. Source: Map by Chantal Bekkering, 2020.

the 2015, 2016, and 2019 studies, participants reported taking the train in the morning to access urban centralities like Johannesburg (primarily for government services) or to industrial areas like Germiston (to seek work in the industrial sectors). In 2020, people spoke about the theft of elements from transit stations that made them unsafe, the burning of rail infrastructure during the strictest phases of lockdown (Mabena, 2020), and even how the rails themselves became an alternate form of space for people to move goods like scrap metal to sell (Kornienko, 2021). One male study participant spoke about the damage to public infrastructure thus:

> Everything that is metal is being cut and taken to the scrapyard. There were chairs before, even at the station, benches were there but now, because they were metal, they have all been cut and they no longer exist. Anything that is plastic…there's also a place that takes plastic scraps. There's nothing that isn't getting sold, so there's nothing. (D07)

The taxis were thus the only remaining system available to the majority of participants from Denver. While government policy technically restricted the number of passengers to align with social distancing requirements, participants reported that it was not enforced. For taxi drivers, every unfilled seat is simply lost income, and there are little to no consequences from people or the government if their passengers feel unsafe. As a result, people (again, primarily women) often left their children at home or walked long distances, when otherwise they would have brought them in taxis.

This imposed a significant psychological burden on participants; although they did not describe it in these terms; both women and men reported feelings of fear and judgement beyond what previous studies had indicated. One described constant anxiety about contracting the coronavirus in a taxi, explaining:

> In the taxi, there are 15 or 16 people. You don't know where the person was the night before or where they went today and even with me. It might be that in this taxi of 15 people, one person already has this virus. (D07)

Many women spoke about fearing for their children, but also themselves. One woman noted: "But now since it's lockdown I don't go with [my daughter] because they will ask where we are going with children…are we trying to kill our children" (D08).

Continuing the idea of "cascading consequences" for people's ability to generate income described in the previous section, people were also precluded from conducting their typical circuits of migration regionally. When asked how their expenses for transport had changed during the pandemic, one woman responded: "It's less because we had not even been traveling to KZN, we had three months of not going home. We would just send the money…but now that everything is now open, we are *forced* to go home" (D011, emphasis by the author). A participant in all four studies, this woman's maps revealed an indeed significant drop in regional travel; in past years, she had travelled to KZN, on average, every two weeks for a long weekend. As she continued to describe, the lack of ability to generate income during the pandemic put additional pressure on her remittances, and she also worried about the ability to care for her mother according to these usual patterns: "We need to go buy groceries for my mom. We just go home to check up on how things are down there" (D011).

While the information from the 2020 study is still being evaluated, these preliminary findings indicate that the pandemic exacerbated the already existing burdens related to gendered roles of household management, childcare, and mobility, from the individual to the macro-scale. This ties to larger issues of inequality at the nexus of gender, poverty, and mobility. Peden and Kobusingye (2020), for example, note how the reduction in available public transit during Covid-19 disproportionally impacted the urban poor, who were often unable to access health care facilities for routine services. In Denver, this exacerbated an existing inequality, because there are no local clinics; participants discussed the need to walk more than an hour or take an expensive taxi to receive medical care for their children at a local hospital (D01). But revealing the extreme form some of these existing inequalities took is already a first step in creating a more equitable urban environment in the post-pandemic era, and it is to this topic that the final section of this article turns.

6. Conclusion and Policy Implications

Reflecting upon years of empirical work, it is clear that it is practically impossible to extract aspects of gender or poverty or mobility that shape everyday life from one another. They all act to reproduce conditions that make it incredibly difficult to overcome the specific and variegated forms of marginality that exist in Denver—but simultaneously speak to an extreme resilience of people, in their negotiations of the urban fabric and in the face of their advanced marginality. While the subject of this article is describing the aspects of gender, poverty, and mobility that emerged through studies into transport and everyday life, these three issues are related to the decentralized urbanization processes shaping the metropolitan region, and the "circuits of migration" that underpin livelihoods both in urban informal settlements and "home" on the regional-scale peripheries. Inequality prevails both on the macro-scale (related to poverty-necessitated mobility) as well as on the micro-scale and between individuals (related to societal constructs of gender and household management).

In a broader sense, most study participants felt they had very little choice in regard to their mobility, and were skeptical of utilizing public transport systems beyond the

"mini-bus" taxi systems. Their hesitancy was related, first of all, to perceived and actual costs; some forms of public transportation by bus, for example, were not necessarily more expensive, but they disagreed (cf. Howe, 2016). People simply did not trust or were unfamiliar with other forms of transport beyond the taxis, which could possibly be linked to a lack of trust in government institutions, residual from the apartheid and because of the new forms of inequality (Harrison et al., 2019). Trust is therefore a key issue that could be addressed on the micro-scale in the post-pandemic era. Another problem that emerged in the studies was accessibility; in places like Denver, stops were located several kilometers away, entailing long walks or more expensive multimodal transfers. Public transit lines lack relevant destinations for where the users wish to travel.

There are thus two related recommendations that can be drawn from the results of the study that would help address the "nexus" of gender, poverty, and mobility. The first is to improve user experiences on the micro-scale, in a way that explicitly addresses gender. The second is to improve accessibility on the macro-scale, by utilizing the taxi system as an instrument to reach destinations that are currently underserved by public transit.

6.1. Improving (Gendered) User Experiences

The intersection of gender roles within households and society with the spatial practices of mobility in the series of studies in the GCR and Maputo mean that women regularly experience transit more negatively. As the 2020 project's final report concludes: "Women experience multiple socio-economic issues, and the inadequacy of the public transport system worsens the situation" (Charlton et al., 2022, p. 22). As such, focusing on the experiences of women and children and building trust with areas typically neglected by planning processes would be a meaningful place to start innovative policy in the post-pandemic era, aiming to provide better ways for vulnerable social groups to access opportunities and travel more safely.

Improved public transport experiences, including feelings of safety and ease of the systems for women and children with relevant destinations for their daily routines, would make a big difference in people living in settlements like Denver. Comparable spaces exist throughout the city region, in which people for example primarily walk because it is what they can afford, or they must spend a large proportion of their income on transportation (Howe, 2022). Research into gender and space in the GCR (Rubin & Parker, 2017) as well as broader research into poverty alleviation mechanisms (Whillans & West, 2022) has revealed that what people need, especially women, to overcome poverty is more money and time, or money to win time and reduce the pressure to constantly work. Focusing on gendered user perspectives, gleaned through fine-grained qualitative and ethnographic research with high levels of personal contact, would provide precisely such opportunities to build trust and gain the information needed to plan better for people.

6.2. Improving Accessibility

Long-term, addressing the gender–poverty–mobility nexus would also necessarily involve structural changes on the macro-scale. The taxi industry plays a vital role in serving people's needs not met by formalized, state-led transit systems; the industry would not exist if public transit provided a viable alternative. Yet interviews with planning agencies consistently reveal that it remains perceived as illegitimate. Peripheralized spaces are seldom along the lines of transport identified by planners as ideal for infrastructural masterplans, so peripheralized social groups remain so. Addressing such disconnects between lived experiences and the conception of space would involve extending opportunities for public transport where people are and building on the locations where people reside and need to go to, instead of homogenizing livelihoods and asking them to move unilaterally towards centralized urban corridors (cf. Howe, 2016, 2021a). The taxi industry is well-positioned to provide these services if it can be incentivized to address issues such as safety. It would require a significant shift in mindset towards the taxis to see them as partners rather than competition, but if the state could mediate between (gendered) user perspectives and the taxis to integrate destinations rather than expunging systems, it could have a transformative impact.

Covid-19 was unfortunately wielded to try and gain further control over the taxi industry in the GCR, rather than taking the opportunity to learn from it or devise ways to make it more integrative as a collective good. The consequences of dispossession are becoming even greater, as climate change and resource scarcity increase, and society is confronted with phenomena like global pandemics that sharply reveal the complex dynamics of gender, poverty, and mobility shaping space and everyday life. Connecting the experiences of people in Denver to broader trends shows that there is a danger of widening existing divides, and increasing processes that lead to social, economic, and spatial peripheralization of vulnerable social groups. As Madden (2020, p. 678) describes, during the pandemic:

> Essential workers—many in poorly renumerated but socially vital roles—were required to continue showing up. Other types of work have been put on hold entirely. The overall situation is both unjust and untenable: Work has become inconsistent and uncertain, yet the rent continues to steadily accrue.

If the chance is missed to rethink policies based on the Covid-19 experience and address the existing inequality of the social and urban fabric, both cities and the

extended urban regions they connect to are in danger of falling prey to "a broader pattern of capitalist crises [that] bears their telltale sign: a widening, painful divergence between that which is socially necessary and that which is economically viable" (Madden, 2020, p. 677).

Despite the difficulties of the Covid-19 pandemic, and its disproportionate burden on the people of Denver and other such areas of precarity, these events do provide opportunities to learn and change course. Bringing the findings from projects like this collaborative, comparative research in the GCR and Maputo into conversation with other contexts could lead to further insight into the constitution of inequality through aspects of gender, poverty, and mobility to benefit vulnerable people and spaces far beyond Southern Africa.

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Conflict of Interests

The author declares no conflict of interests.

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Article

Reimagining the Future of the Sydney CBD: Reflecting on Covid-19-Driven Changes in Commercial and Residential Property Trends

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Abstract
Covid-19 has led to unprecedented changes in functional structures in our cities. Since the mid-20th century, central business districts (CBDs) worldwide have hosted economic and employment activities, leaving suburbia to home the residential function. However, the global Covid-19 responses have resulted in changes in some urban functions, and it is yet to see if these changes would transpire as temporary or permanent. Some argue that the broad macrogeographical pattern of urbanisation is unlikely to be changed. Still, that significant intra-metropolitan, neighbourhood-level and daily life changes are to become part of the new reality. Thus, this article considered these changes by focusing on property trends in the Sydney CBD to reflect on future trends, urban structures, and associated functions. An evaluative single case study desktop analysis was conducted to investigate commercial vacancy rates and rental prices within the CBD of Sydney (Australia) between 2018 and 2021 to reflect on the Covid-19-drive changes and their implications for urban planners. Findings highlighted that before Covid-19, both residential and commercial markets were growing, with rising rental prices and decreasing vacancy rates. However, commercial vacancies in the CBD have increased, and rental prices have decreased since 2020's lockdown, stressing the dropping demand for commercial spaces. The residential market experienced a different trend with dropping vacancy rates and increasing rental prices. The data analysed provide an initial understanding of how Covid-19 has impacted the Sydney CBD. It poses some insights into potential future trends and changes in the urban landscape. It highlights the implications that the planning profession should consider in the quest to realise sustainable and resilient cities.

Keywords
commercial use; Covid-19; future of CBD; pandemic impacts; property data; purchasing prices; residential use; vacancy rates

Issue
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1. Introduction

Cities were predominantly planned as economic hubs, but recently they have transitioned into complex ecosystems, playing a significant role in realising sustainability objectives. The contemporary city's economic prosperity increasingly depends on healthy social structures (Beumer et al., 2018), highlighted even further by the global Covid-19 pandemic. Simultaneously, a global discussion on the cities' role was initiated since the pandemic, contemplating if cities will ever return to their planned role and function in pre-Covid times. Various authors have speculated that cities as we knew them will no longer exist (Angel & Blei, 2016; Couclelis, 2020), with other optimists considering that cities will rebound stronger from the pandemic (Pojani & Alidoust, 2021).

As there is currently limited evidence to substantiate these speculations, this article aims to investigate property data and the trends' changes brought along since the start of the pandemic from an urban planning perspective to reflect on possible future scenarios. Therefore, a single evaluative case study desktop analysis was conducted to investigate residential and commercial vacancies and rental price data in the central business district (CBD) of Sydney, Australia, to understand the changes in trends brought by the Covid-19 pandemic. Based on the observed fluctuations over four years, this article argues that these property changes are informing a new spatiality of the city and that the CBD of the future would need to incorporate unique characteristics in terms of form and function to support the post-Covid-19 environment and changing societal needs.

Accordingly, an overview of the pre- and post-pandemic discourses on the role and function of the city is presented, followed by the methodological approach and the findings of this investigation of the property trends in the Sydney CBD. This article concludes with a three-part reflection on the future city and the implications for urban planning professionals in shaping sustainable and resilient cities of the future.

1.1. Discourses of a Pre- and Post-Pandemic City

Regardless of the fundamental relationship between urban planning and property, planners have rarely looked at the latter and its implications for their practice. Property is traditionally linked to ownership and a plot of land, which are essential in urban planning (Fawaz & Moumtaz, 2017). As Campbell (1996, 2016) asserts, property is one of the planners' sustainability triangle axes, highlighting this intertwined relationship between these disciplines and elements. Property not only has the tension of generating private capital but also the opportunity to create social benefits. Planners regulate property, which often the private sector resists, and work for capital through, for example, increased property tax (Campbell, 1996, 2016). Regardless of the conflicts, it could be said that one is the reflection of the other. Planners shape how property takes place in the city and its use and form. In return, property markets provide insights into what is needed in urban areas.

Cities are shaped by their urban form, not simply in terms of the appearance, but also in terms of defining characteristics such as the design and structure, where development occurs, what type of developments are likely to be realised, and the interconnections between different areas (Cilliers, 2015). In the 20th century, a vast majority of planning theory and practice was strongly opposed to density in the urban context, with considerable efforts being made to reduce urban density wherever possible and to separate the various uses (housing, commerce, industry, etc.) through the application of a rigid type of mono-functional zoning (Moroni, 2016). Great Britain explored the garden cities conceived by Howard in 1902, while the United States embarked on decentralisation in reaction to density, based on the work of Mumford, Stein, Bauer, and Henry Wright (Graham, 2016). Work by Jane Jacobs suggested that overcrowding was undesirable and that it should be isolated from the issues of population and building density (without any severe overcrowding), and many began to embrace the vision of the "compact city" (Grant, 2006). Planners swung in favour of fostering compact urban situations (Rice, 2010) in an attempt to avoid low-density development and the new enemy of "sprawl" (Flynt, 2006).

Today, spatial change is at a peak within the urban landscape, with most of the world's population currently residing in cities (United Nations, 2019). Projections show that urbanisation, the gradual shift from rural to urban areas, combined with the overall growth of the world's population, could add another 2.5 billion people to urban areas by 2050 (reaching 68% urbanisation), intensifying the challenges of the contemporary urban landscape (United Nations, 2019). The four urban functions of working, living, leisure, and transport that Le Corbusier (1929) once so elegantly deployed in the Charter of Athens can no longer be separated from each other either spatially or socially (Mulder, 2002). The contemporary urban landscape deploys a picture where formal data (land-use, functions, and zonings) are now complemented by a new set of data based on activities and interactions that challenge traditional planning-based data and planning structures.

Urban planning can thus not only be seen as a conglomerate of formal land-use activities but has to consider the intricacies of social interactions, markets, and, nowadays, pandemics. In this process, it is fundamental to understand the property market changes driven by the pandemic and how governments and people have reacted to the pandemic itself—part of it by being in lockdown and the need to work from home, changing the city's planned use. Land use and zoning are still the same, but how people interact with them is modified; thus, planning needs to consider these global, external, and relational factors.

Cities have always attracted population growth and economic agglomeration, building on the benefits of density, proximity, and connectivity (Burdett, 2022). As a result, cities have existed as epicentres of new capital, creativity, and innovation because proximity generates serendipity, a spillover effect, and connections from which new ideas and opportunities arise (Albizu & Estensoro, 2020). Various global cities followed this high-density pattern and included multi-use CBD spaces to host their workforce, contributing to economic prosperity.

Before the Covid-19 pandemic, cities across the globe were booming, together with their housing markets. As people flocked to cities for job opportunities, educational facilities, and cultural provisions, residential property prices in Australian cities soared with a sharp increase in housing prices and pressures on rental

markets (Bullock & Orsmond, 2019). Suitable land for residential development in city centres was notoriously scarce, leading to even more significant increases in house prices in cities (Bullock & Orsmond, 2019). It is important to highlight that this process was experienced across greater metropolitan areas, not necessarily in the CBD alone. This worldwide process was experienced differently in Sydney, as people sought to live in the suburbs and outskirts of the city due to their amenities as well as affordability matters.

With the outbreak of the Covid-19 pandemic, these vibrant, low- and high-density city spaces were the first to lockdown in response to prevent the amplification of viral spread (Goldstein & Singer, 2020). Compact development, which was initially linked to higher economic productivity, innovation generation, and higher knowledge-based economic productivity (Hamidi et al., 2020), has now also emphasised the challenges relating to the socio-spatial inequities and increased vulnerabilities as a result of overcrowding and perilous living in these compact settings (Biglieri et al., 2020).

Pandemics expose both the vulnerability and resilience of urban systems and serve as change agents for planning resilient cities and regions globally (Banai, 2020). Historically, cities have systematically metamorphosed in response to threats such as pandemics, as was evident from the 14th-century bubonic plague, which contributed to the emergence of Renaissance cities in Europe, and the cholera epidemic of the 19th century, which inspired a global sanitary movement in colonial cities (Markel et al., 2007). This leads to the assumption that the current Covid-19 pandemic will also leave a legacy that has already resulted in an, at least temporarily, significantly reconfigured city life. Once more, changes ranging from the interface between work and residence, the use of public space, to the safety and security of transportation have demonstrated how cities continue to be shaped throughout history by pandemics and their consequences (Martínez & Short, 2021). This phenomenon has also posed fundamental questions about equity of access to resources (Banai, 2020) and measures that could be considered to plan the resilient and sustainable cities of the future.

During the recent pandemic, it became more evident how lockdowns imposed on the benefits of agglomeration economies. At the same time, they provided evidence of how agglomeration benefits of cities are eroded by better communication technologies (Voith & Wray, 2021). However, it has forced built environment professionals to rethink how and where these agglomeration economies occur. The pandemic has highlighted the importance of access to shops, essential services, and the internet. Simultaneously, the pandemic has challenged megacities with large multinational companies having more flexible work arrangements, no longer seeming to need these clusters of activities.

Additionally, the discourses on the future and resilience of the urban environments have also changed since the Covid-19 pandemic started at the beginning of 2020, with many media and academic articles discussing the impact this once-in-a-lifetime event had and will continue to have on urban areas (Couclelis, 2020). An evident shift in the use of local spaces and business districts, movement patterns and mobility needs indicated that changes (either temporary or permanent) would be part of the future urban landscape.

Early predictions show how the post-pandemic city may be less convivial (Martínez & Short, 2021), less crowded, and have more spacing requirements and limitations on direct contact between citizens. Pojani and Alidoust (2021) engaged in a document-based study in which they analysed the media discourses on the future of cities, highlighting that the main changes to be expected were around the decrease in the use of public transport and mass moving to the suburbs due to fear of density and long-lasting remote working opportunities (also highlighted by Badger, 2021; Overstreet, 2021). In conjunction with the prior, CBD retail has also been deeply impacted by continuous lockdowns leading to high vacancies (also highlighted by Mortimer, et al., 2020) in the sector and commercial outlets, which are envisioned to be transformed into residential spaces. As the authors express: "This will reshape not only the urban form but also the regional and even the national superstructure. Monocentric or polycentric cities will turn into dispersed settlements" (Pojani & Alidoust, 2021, p. 10).

Highlighting how pandemics in the past have created havoc in cities throughout history (without substantially changing their role), Florida et al. (2021) assert that the Covid-19 pandemic will have long-term impacts on the urban structures and morphologies at the local scale, especially changes of a social nature. These changes include moving out of cities into suburbs, with a "youthification" of the city. As a result, this might also mean changes in transport related to the possibility to work from home, where there might be longer but less often commutes for some, and zero commutes for the young people moving into urban centres. Finally, the authors discuss how lockdown-driven impacts on retail may influence the role of main streets to change and the use of roads as they were designed. Other effects on the city structure relate to the potential adaptation of vacant commercial lettings into other more flexible spaces that include residential uses (Florida et al., 2021).

On the other hand, there is certainty among some academics that cities will go back to normal, and "come back to life" (Pratt, 2020, p. 1). People are ultimately social beings, which is why the CBD will not die. For example, going to work is more than just working; it is about socialising, which is why cities will continue to exist regardless of remote working (Couclelis, 2020; HSTalks, 2021). What is evident is that the pandemic highlighted existing issues and emphasised the need for urban preparedness for future pandemics (Martínez & Short, 2021). Shorter-term implications might well spill over

into a longer-term impact on city design, resilience, and sustainability. While the change in our cities, our CBDs, and urban landscapes are continuous, urban planners need to reflect on and understand these transformations to adequately plan and design our future cities based on existing trends and the newly introduced Covid-19 related ones. Yet the longer-run history provides us with reasons to be optimistic about the future of the CBD, where urban connections have produced new technologies and profound social change for the last 2,500 years (HSTalks, 2021). Given all the positives and negatives brought along by the global lockdowns that brought the future of cities and CBDs into question, it is probably safe to say that the recent pandemic will most likely not lead to a massive demographic outflow from urban agglomerations to less densely populated areas, but that it will result in a ripple in the permanent dynamic evolution of cities (Sassen & Kourtit, 2021). Cities and urban agglomerations have never been static but rather tranquil living and working environments (Sassen & Kourtit, 2021).

Futurism has been used as a mechanism for learning, an attempt to take actions in the present that will enable suitable futures (Pojani & Alidoust, 2021) and yet again, society is in a situation where we are reflecting critically on the future and the role of our future cities. At the same time, it is important to highlight that all the literature and documents consulted above have been written at various times: during lockdowns or when governments were pushing to a "going back to normal" whilst others were going to a third lockdown. Even more relevant, all of these were written before booster vaccines, new Delta and Omicron variants, fourth waves of restrictions in Europe, and almost complete ease of restrictions in New South Wales (and most of Australia) whilst having a record number of new cases per day.

In this vein, this article aims to answer the following question: How can evolving property data trends inform planners in rethinking the Sydney CBD? To answer this, the article focuses on actual property market data in the Sydney CBD to understand the current trends and reflect on the role and function of the city based on the pandemic-driven changes in the property market from 2018 to 2021 (with an emphasis on the changes observed during the pandemic years of 2020 and 2021) and possible future scenarios that will result from managing these changes.

2. Methodological Approach

This research employs a qualitative single evaluative case study approach (Harrison et al., 2017) to investigate residential and commercial property data within the CBD of Sydney, Australia, over four years (2018–2021). Case study analysis is a popular approach employed in planning literature (Association of African Planning Schools, 2010). It is mainly used in cases where more information is needed to make sense of complex phenomena (Moore et al., 2012).

An evaluative approach to property data then informed the findings of this article, drawing on publicly available property data from private and governmental sources such as the Property Council of Australia, SQM Research, Cushman & Wakefield, Domain, CBRE Australia, the International Monetary Fund, and the Australia Bureau of Statistics. Commercial data was limited to "office space" data for this research. This publicly available data was limited to graphs and tables, leading to one of the limitations of this research, namely not having access to data sets to engage in further statistical analysis.

Additionally, overarching residential data, including the different Australian capital cities, were incorporated to validate the findings directly related to the Sydney CBD. Equally, aggregated national data from the International Monetary Fund on commercial real estate prices were also considered to provide context on the state of commercial properties in Sydney.

2.1. Case Study: Sydney Central Business District, New South Wales, Australia

The Sydney Metropolitan Area is the most populous and multicultural city in Australia and Oceania, comprising 5,312,163 people as of 2019, almost 43% of them being born overseas, mainly in mainland China, the UK, and India (Australian Bureau of Statistics, 2022). This metropolis is located on Australia's east coast and extends more than 70 kilometres on its sprawl, consisting of 658 suburbs within 33 local government areas. Sydney is a city that is frequently featured in widely discussed and distributed global "liveability" rankings. It is classified as an "alpha global city" by the Globalisation and World Cities Research Network (2020), indicating a significant influence in the Oceanian region and beyond.

The pattern of Sydney's urban structure still follows the CBD (downtown)–periphery (suburbia) structure, with a large population commuting to and from employment centres, of which Sydney CBD is the largest. However, the future vision for Sydney draws on a polycentric approach to enhance other existing centres, such as Parramatta, and create new ones towards the west of the metropolitan area (Figure 1). These aim to allocate work and services to revert the patterns of centralisation of the 20th century, improve the spatial mismatches between homes and work (jobs), and reduce spatial inequity that has characterised the migrant heavy western suburbs of the metropolis for many years (Greater Sydney Commission, 2018).

This article focuses mainly on the Sydney CBD located in the local government area City of Sydney. By June 2020, this local government area had an estimated population of 248,736 people, representing around 4.6% of Greater Metropolitan Sydney's population (City of Sydney, 2020), 133,676 residential dwellings, and 23,513 commercial spaces, including 7,800 retail spaces (City of Sydney, 2018). Within the City of Sydney, there are 33 suburbs,

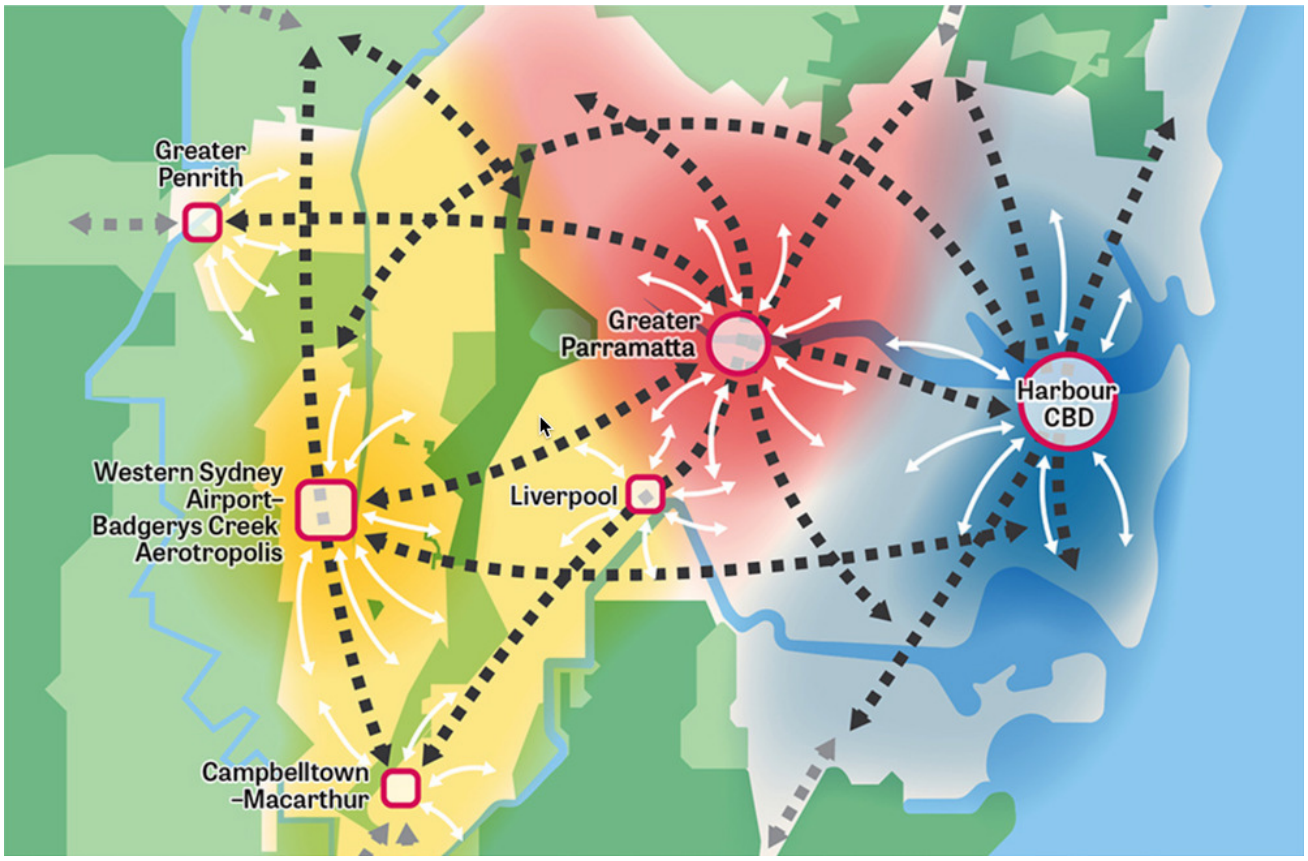


Figure 1. The Greater Sydney Commission's three cities plan. Source: Greater Sydney Commission (2018, p. 7).

of which the suburb of Sydney is the CBD and home to most economic exchange and office work functions.

According to the City of Sydney (2018), more than 80,000 workers in the labour force were employed full time. The number of businesses employing workers in the city grew by 8.7% between 2010 and 2017 (City of Sydney, 2018). Recent reports show that Australian CBDs attract over 39% of staff employed by the professional and financial service industries (PwC, 2021a). Sydney CBD is no exception.

Consistent with the rest of the world, the Covid pandemic in Australia has deeply affected people and the cities in which they live. The progression of this pandemic is still evolving, and it has involved two different approaches since the arrival of the virus in Australia in March 2020 (Australian Department of Health, 2022). From 2020 until February 2022, timeframe on which our research focused, the Commonwealth of Australia undertook an aggressive elimination strategy which meant the total closure of the international borders for international tourists and temporary residents. It also incurred several lockdowns in major cities, which significantly impacted people's mobility, working arrangements, and, consequently, use of the CBD. The federal and New South Wales governments (among other states) abandoned the lockdown strategy, moving toward suppressing the virus and mass vaccination to address the new Delta and Omicron variants (De Foo et al., 2021).

3. Findings

This section discusses the commercial and residential markets in the CBD through two lenses. The first one engages with the vacancy rate trends, representing the portion of available properties relative to the CBD total stock. The second part discusses the rental and selling price changes for both property types.

3.1. Vacancy Rates for Residential and Commercial Markets

Before 2020, the trends in cities' properties were characterised by a sharp increase in prices related to market pressure and scarce suitable land for development, primarily residential. After Sydney's first set of pandemic policies and lockdowns, the CBD experienced a sharp increase in residential and commercial property market vacancy rates. However, the second year of the pandemic proved to be different for these markets, where vacancy rates tended to decrease in the residential sector. In contrast, they continued to increase in the commercial one.

Residential vacancy rates in the Sydney CBD have been stable in the past decade, averaging 4%. There was a prominent 8% peak in vacancy rates during the winter months of 2019 (May–July), which could not be explained solely by seasonal paths. As summarised by the SQM director of research:

> The increase in rental vacancies in June tends to be a seasonal rise for the start of winter however Sydney's increases go beyond seasonal factors, and so our expectation remains that Sydney will reach a 4% vacancy rate before 2019 is completed. (SQM Research, 2019, p. 1)

The 2019 peak was therefore related to a process of equilibrium due to increasing supply and slowed demand in cities of South-Eastern Australia, such as Sydney, Melbourne, and Canberra (SQM Research, 2019, p. 1).

The 2019 peak and the process of equilibrium are further backed by data from the residential rental market in other cities (Owen, 2019) and the higher-than-average points of vacancy between 4.1% and 5.3% in the last months of 2019. However, from February to May 2020, the residential vacancy rates significantly increased by 250%, with available dwellings rising from 423 (4% vacancy rate) to 1,507 (16%). Figure 2 shows this sharp increase concerning data from the previous 15 years, which coincides with the closure of international borders and the city's first complete lockdown that finished in July that year. Vacancies remained stable at a remarkably high level throughout 2020, averaging 13%, with rates only starting to decrease during the last quarter of the year. By January 2021, residential vacancy rates had dropped 4.8%, reaching a low of around 8% (or 587 vacant units), similar to July 2019. However, this rate is still higher than the average observed over the last decade.

This stabilising trend in vacancies experienced a slight increase to 8.2% (785 vacancies), with the second city-wide lockdown due to the Delta variant extending from 21st June to 11th October 2021.

In contrast to the sharp increase in 2020, the mild increase in vacancy rates related to the 2021 lockdown shows that the Sydney CBD's residential market is stabilising. The latter demonstrates a "reoccupation" of the city and CBD related to a process of people adapting and accepting pandemic conditions (Young, 2021). The initial shock and uncertainty caused by the novel disease at the beginning of 2020 is no longer enough disincentive for the residential market. A complementing factor relates to the real estate industry remaining active in the 2021 lockdown differently from 2020. The trend above corresponds to the overall Metropolitan Sydney residential vacancies. However, regardless of the tendency to reflect the same curve, the vacancy rates have historically been much lower in the metropolitan area than in the CBD per se. In this vein, Figure 3 shows, in a more detailed manner (the period between 2017 and 2021), an increase from around 2.5% to 3.5% in residential rental vacancy rates from March to May 2020, representing an increase of 40% additional vacant properties. As in the CBD, this increase was followed by a steady decline from June 2020 to July 2021, dropping back to similar rates as of December 2019.

However, the residential rental market data (actual transactions) show that the percentage has not been corrected to pre-Covid (at least 2019) rates. In other words, there are low vacancy rates in both the aggregated and the exclusively rental property markets, but this is not reflected in the number of actual rents taking place, which may refer us to an increase in the purchase market.

In summary, the residential property market has rebounded from the impacts of the 2020 restrictions and endured the 2021 lockdowns and other potential affecting factors such as federal economic policies. However, the residential occupation of the Sydney CBD remains low, as vacancy rates remain high compared to the previous decade.

Contrary to the residential market, prime office space within the commercial market experienced a solid decreasing vacancy rate during the four years before the pandemic, dropping from 7.3% in 2016 to 3% in 2019 (Figure 3). Aligned with the Covid-19 restrictions in 2020 and the introduction of working-from-home arrangements, there was a rapid increase in vacancy

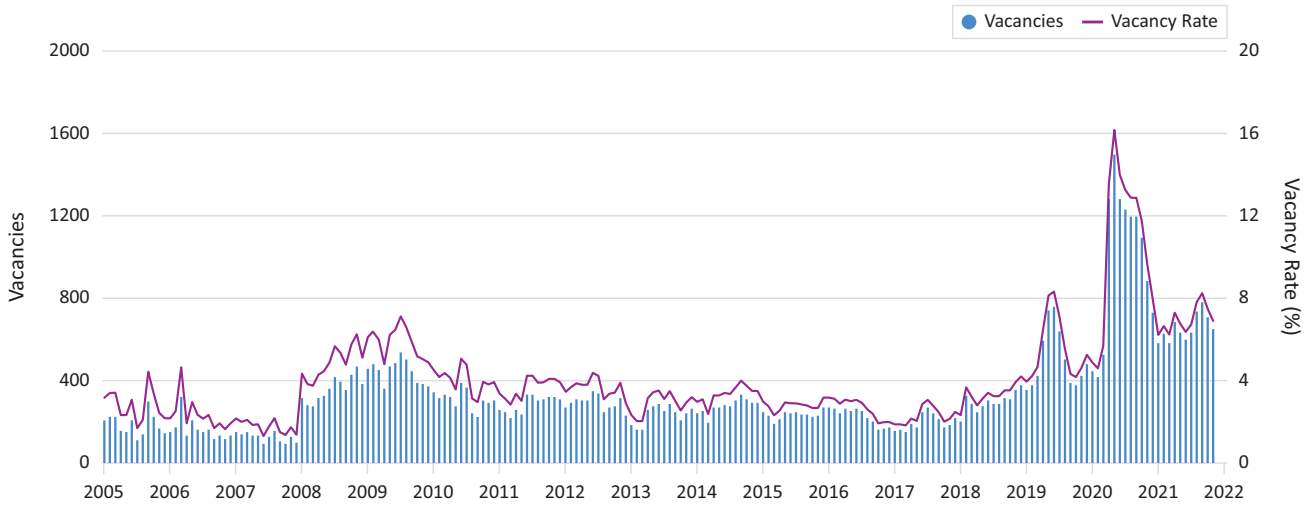
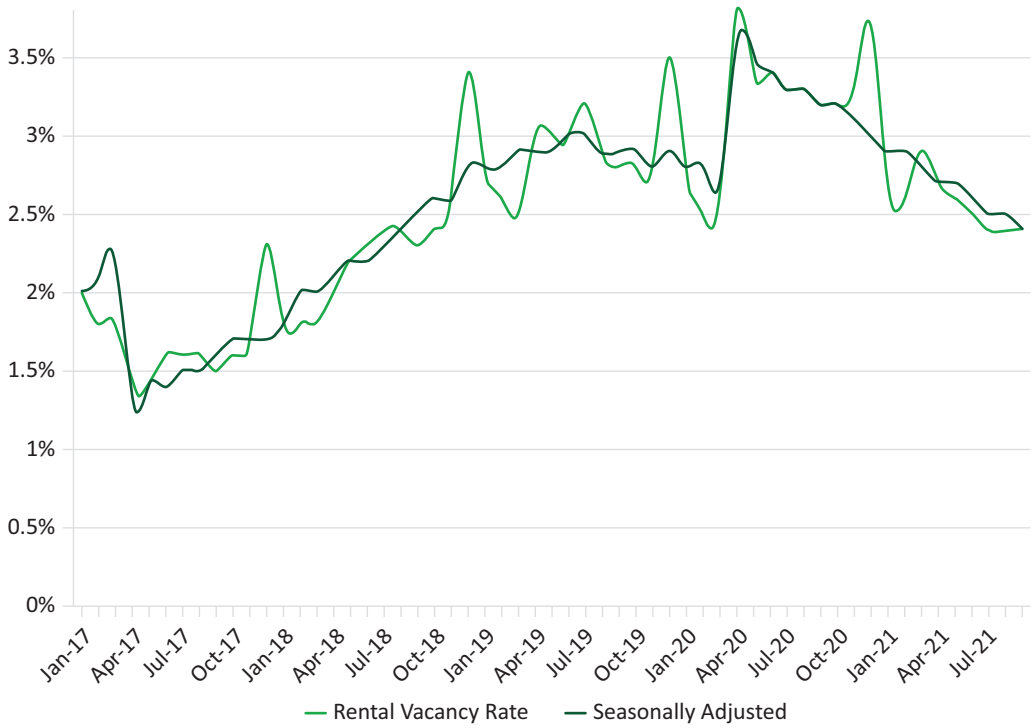


Figure 2. Residential vacancy rates (2005–2021). Source: SQM Research (2021).



Note: The vacancy rate represents the portion of available, empty rental properties relative to the total rental stock in a city. The rental vacancy rate is based off adjusted Domain rental listings and will be subject to slight revisions over time. Seasonally adjusted vacancy are computed using X-13-ARIMA-SEATS methodology.

Figure 3. Residential rental vacancy rates (2017–2021). Source: Domain Research House (2021).

rates, reaching 8.3% on average. However, differently from the impact on the residential market, the commercial vacancy rates did not correct in 2021 but continued to increase (Figure 4), reaching 8.5% in the first quarter of 2021 and 9% by July that year. The latter shows the drastic impact of the Covid-19 lockdowns and the continued shift of economic activity away from the Sydney CBD during 2021.

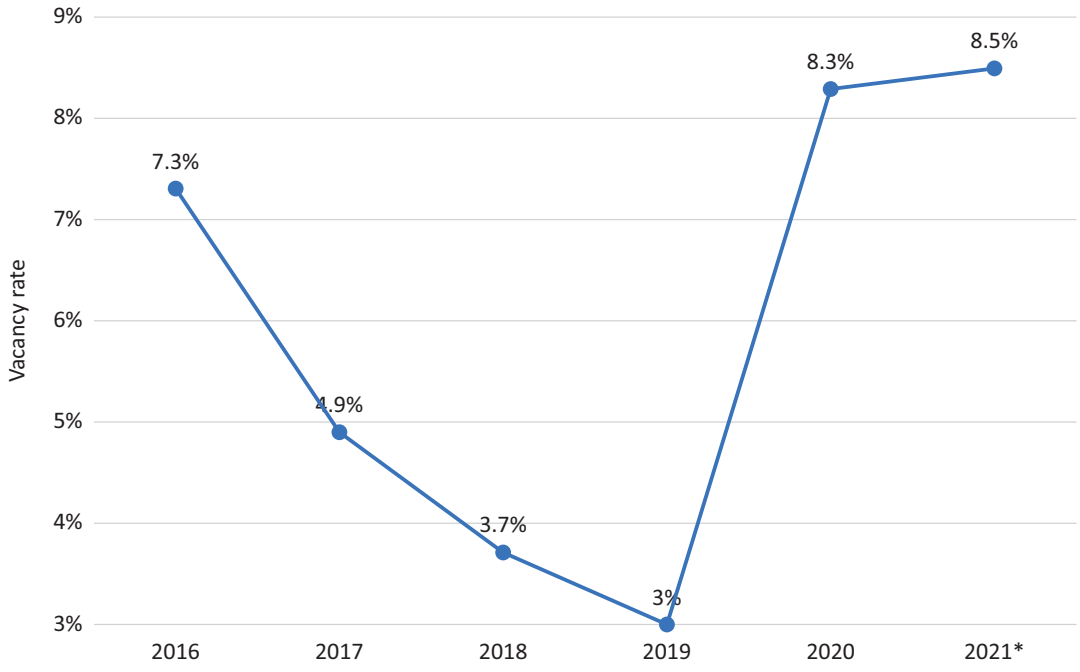


Figure 4. Vacancy rate of the prime office market in Sydney CBD (2016–2021). Source: Statista (2021) using CBRE estimates from 2021.

The data above show a steady increase in vacancy rates as a consequence of the Covid-19 pandemic, which indicates a potential shifting trend in economic activity in the Sydney CBD, and thus, the possibility of the commercial character of this area of the city not fully returning "back to normal" to its pre-Covid function.

3.2. Prices of Residential and Commercial Properties

The analysis of prices shows two different scenarios that reflect and is consistent with the vacancy rates data above. The subsections below discuss the drop in residential rental prices in 2020 and their slight increase in 2021, as well as the intense sell/buy activity in the residential market in the Sydney CBD, which has rebounded to pre-pandemic levels showing scarcity and high prices The discussion on the commercial market focuses on rental data in Metropolitan Sydney and purchasing prices in Australia. The available commercial data show a process of stasis that might reflect the shifting nature of the Sydney CBD.

Considering the Australian context, Figure 5 shows that Metropolitan Sydney had the harshest drop in rental prices, with around a 3.5% decrease since March 2020 compared to the pre-Covid market. Melbourne also experienced a decline in rental prices, reflecting the effect of lockdown measures taken by state governments during 2020. Rental prices increased in other capital cities that did not endure extended Covid restrictions.

The drop in rental prices in 2020 in Metropolitan Sydney aligns with the increase in vacancy rates in the CBD, which is an expected scenario (Belsky, 1992).

Sydney CBD's residential purchasing price data in 2019–2020 show an inverted bell curve, involving a drastic reduction of prices by approximately 7% from December 2019 to June 2020. However, Figure 6 shows a very rapid rebound from June 2020 to June 2021, with an expansion of around 10%, reaching the highest proportional increase in prices experienced in the past few years. This increase was sustained by federal economic measures and low-interest rates (Reserve Bank of

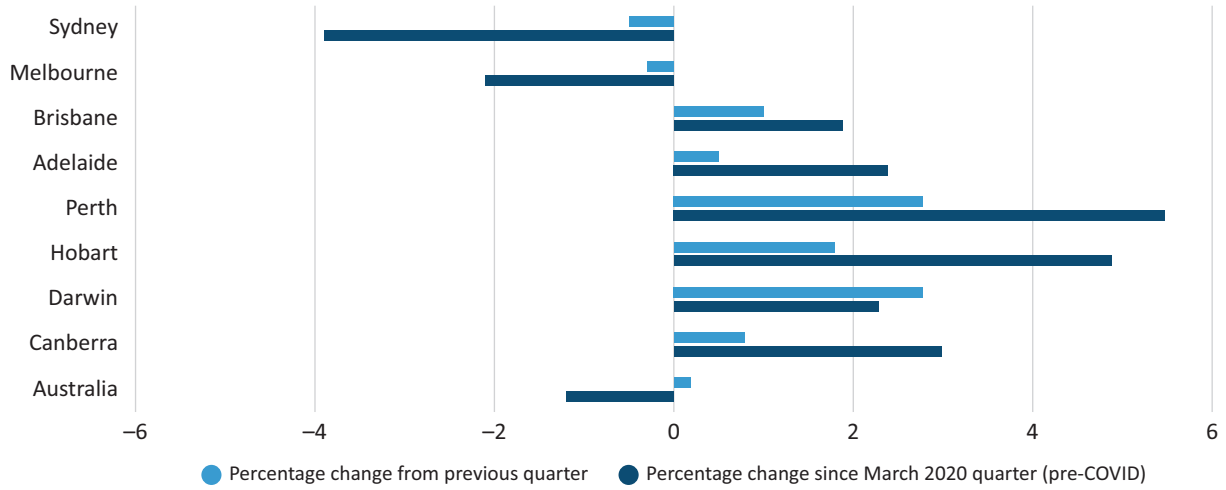


Figure 5. Percentage rental prices changes in Australian capital cities (March 2020 vs. September 2021). Source: Australian Bureau of Statistics (2021).

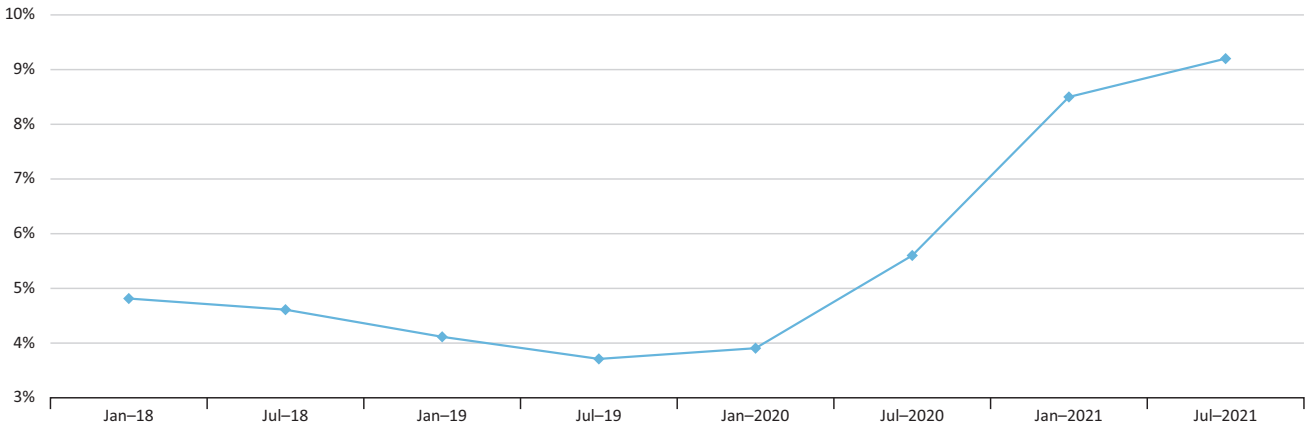


Figure 6. Office vacancy in Sydney from January 2018 to July 2021. Source: Property Council of Australia (2021a).

Australia, 2021, 2022). Residential property prices are higher than before the pandemic.

Publicly available disaggregated data on the Sydney CBD commercial rental markets is limited. Data on the Sydney metropolitan area show a similar inverse distribution between rental prices and vacancy rates related to the impact of Covid in the commercial property market. From 2017 until the start of the pandemic, the commercial property market in Sydney had been strengthening with a decreasing vacancy rate and increasing rental prices. Figure 7 displays that since the introduction of Covid-19-related measures, commercial rental prices dropped from the peak average of A$1,100 per square metre in the first quarter of 2020 to less than A$900 per square metre by the second quarter of 2021.

Accompanied by the rising vacancy rates mentioned in the previous section and yet again highlighted yet again in Figure 8 the low rental prices imply a significant recession in the commercial function of Sydney's CBD that has not shown any indication of rebounding or stabilising into pre-Covid indicators.

Publicly available data on commercial rental markets and disaggregated price data of commercial properties of Australian cities are limited. However, this article refers to Australia-wide commercial real estate prices (albeit not seasonally adjusted). This data provides the broader context of Sydney's commercial property market.

After a slight increase in the already favourable market in the percentage change in commercial property prices, Figure 9 shows a sharp decline in this proportion from the first quarter of 2020, becoming negative between the end of 2020 and the first quarter of 2021. The latter reflects a reduction in prices in the Australian commercial market. This is consistent with the above data about rental prices and vacancy rates, demonstrating a reluctance to invest in this property type.

4. Discussion and Conclusions

Covid-19 is requiring us to rethink city living, CBDs, and cities' forms and functions as we know them. Now is the time to reimagine a livelier, more interesting, and more equitable post-pandemic city as we continue to make cities less vulnerable to pandemics in the future (Martínez & Short, 2021). In asking multi-scalar,

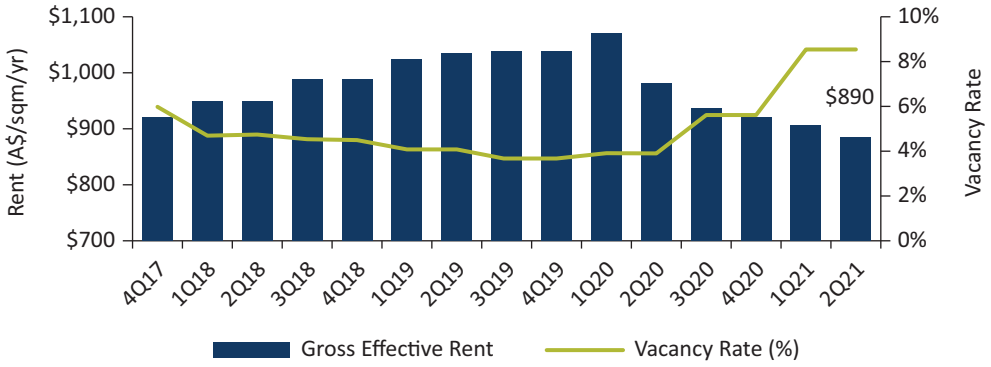


Figure 7. Prime gross effective rent price and overall vacancy (six-monthly) in Sydney from the fourth quarter of 2017 to the second quarter of 2021. Source: Cushman & Wakefield (2021).

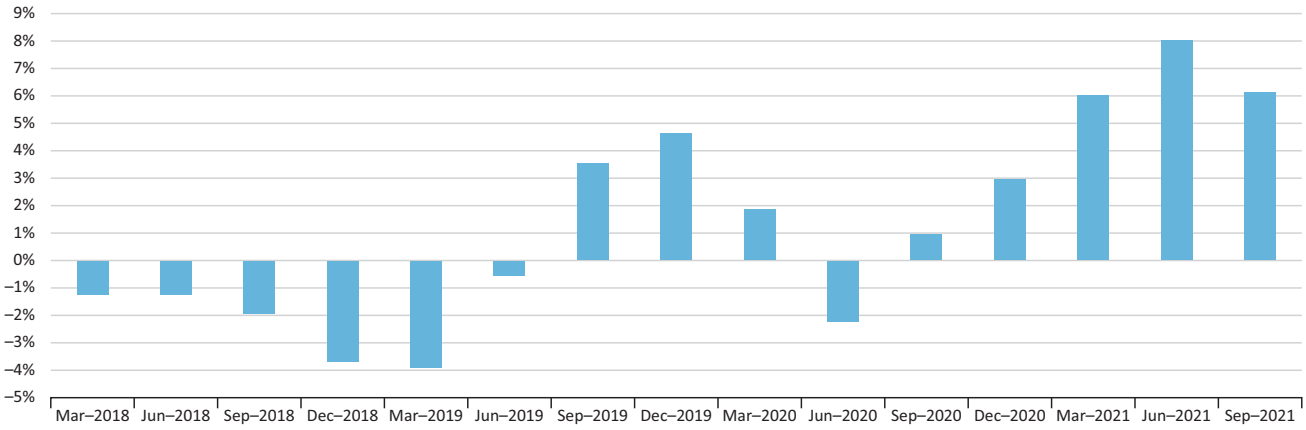


Figure 8. Residential property price index in Sydney from March 2018 to March 2021. Source: Property Council of Australia (2021b).

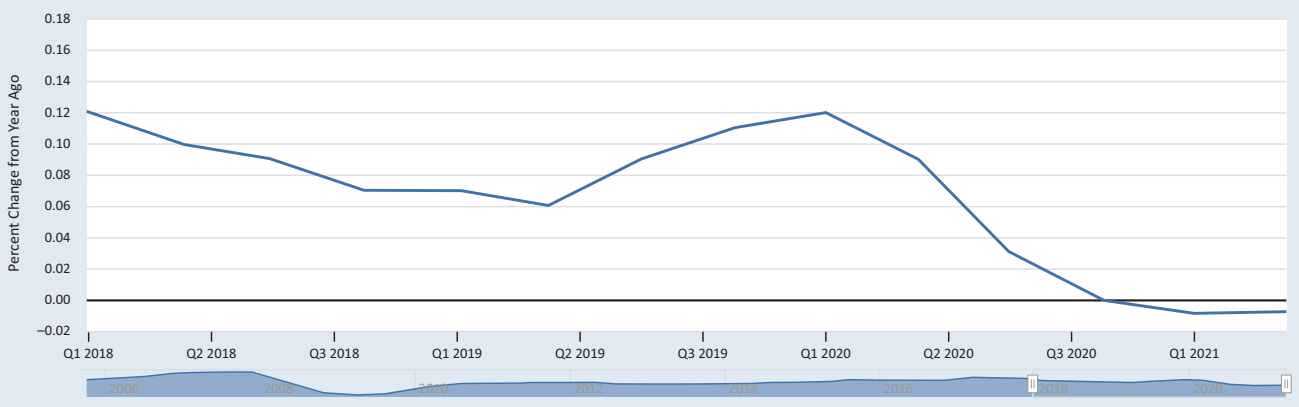


Figure 9. Commercial real estate prices for Australia, Q1 2018–Q1 2021. Source: International Monetary Fund, retrieved from Federal Reserve Bank of St. Louis (2021).

cross-disciplinary questions, we could better understand the complexities of the Covid-19 pandemic in the periphery (Biglieri et al., 2020). Future approaches should most certainly consider the declining urban density and the expansion of smart and connected cities (Voith & Wray, 2021).

The previous sections have discussed the residential and commercial markets in the Sydney CBD. The data shows there has been a change in trend since the normalisation of the Covid-19 pandemic, the acceptance of "learning to live with Covid-19," and adequate response measures put in place, including social distancing measures, flexible working arrangements, and prioritised health considerations (Cilliers et al., 2021). The residential market has started to intensify, reflected in the increase in rental prices and the decrease in vacancy rates. On the opposite side of the spectrum, the commercial market has experienced a negative impact of Covid-19-related measures with decreasing rental prices and increased vacancy rates. The last two years' data show that this may be a trend that will continue this path and eventually stabilise rates that will not reach pre-Covid numbers.

There is a necessary reflection related to the role of city centres and how to understand and strengthen them in a scenario where the trend that we discussed in this article maintains. Similar considerations have been made by research from consulting companies worldwide who have jumped quickly into the analysis and have called for attention to the future of the CBDs in a post covid world. These considerations mainly recognise that cities' economic diversity, particularly in the case of CBDs, is the driver of the global economy (Bloomberg New Economy Forum & McKinsey & Company, 2021) due to their creation of high-intensity economies and business support that spills over the greater metropolitan areas. Moreover, they call for a reflection of what could happen if the economic diversity and high-intensity agglomeration economies were lost.

Similarly, the Urban Land Institute and PwC (2021) call for attention to the growing importance of business organisational change to understand the necessary processes of CBD revitalisation. In this case, we must consider the issues of talent development which can transform into a significant problem for many businesses and industries if the nature of the CBD changes. Shallow talent pools cannot benefit from agglomeration economies and can be detrimental to developing the skills needed for building successful markets.

In general, the importance of rescuing the complex ecosystems of CBDs and their strengths based on attractiveness and centrality for the long-term future of Canada's six major CBD areas is also recognised (PwC, 2021b). The Canadian context is easily transferable to the Australian one due to the characteristics of their economies and urban structures. An alert should be placed on the acceleration of Covid-19 trends that lead to a decline of people heading to the CBD and create a process of urban decay. This decay is a possible prospect in a context where there is an abandonment of central areas. There are currently no clear economic incentives either from businesses or the state to recover these areas in the future.

However, for all the work and, in many cases, speculation around the future of CBDs, there is also an opportunity to harness the appealing living environments that mixed populations can bring to revitalise and change cities' characteristics. By pushing and investing in the revitalisation of the CBD as a "*living space*," cities can ensure that the economic consequences of a transformation of the CBD into a hybrid structure can, in the end, work for the betterment of the city as a whole.

An opposite trend in the residential and commercial uses of the city that this article uncovered insinuates an important evolution of the structures of the CBD urban space. The CBD seems to have the potential to increasingly become more residential with more vacancies for commercial uses that seem to be leaving this business district. As Florida et al. (2021) discussed, the Covid-19 pandemic will have long-term impacts on urban structures and morphologies of the city, though those are difficult to predict. However, the emerging data analysed in

the article hint at processes of re-structuring use, functions, and ultimately the spatiality and built form of the Sydney CBD. Some initial findings from this investigation include recognising the changing landscape, distinguishing between temporary and permanent changes, and considering the new normal for city centres by reimagining the future of the CBD.

4.1. Recognising the Changing Landscape

The research illustrated the shifts and changing trends of Sydney CBD's residential and commercial property market over the last four-year period and the likely impacts of the Covid-19 pandemic on these changes. It is also evident that more changes will occur as the CBD (and city inhabitants) learn to live with Covid-19 and collectively co-design the city's future, the CBD function, and its eventual form. As planners, we must acknowledge change. Property markets are providing clear hints to where we need direct our actions. This changing landscape is a call to generate intended change instead of just reacting to it; it is a call to shape more flexible and resilient cities.

4.2. Distinguishing Between Temporary and Permanent Changes

In considering the future of the CBD, the notion of temporary changes and permanent changes would be an essential concern. As observed from the case study analysis, these changes in trends suggest a "new normal" for CBDs and greater metropolitan areas alike. Still, many authors speculate if CBDs will bounce back to be the economic hubs envisioned in traditional planning theories. Thinking back on polycentric cities, these changing trends seem instead the start of a new transition from CBDs to central community districts, with a greater emphasis on social needs and social support structures. In this vein, planning professionals must pose and reflect on critical questions: Who do these new central community districts need to cater to? What activities do we need to think of and plan for? How do we plan cities that are really resilient, safe, and liveable?

4.3. Considering the New Normal for City Centres: Reimagining the Future of the Central Business District

With corporate tenants downsizing or relocating in the wake of the pandemic and commercial space increasingly vacant in the Sydney CBD, there is adequate evidence to engage in trans-disciplinary conversations and think about the CBD's future and how changing social needs will shape urban reality. The general observation of all the data presented previously calls for further research towards more disaggregated and specific analyses (hedonic characteristics of properties in the market, for example), and the possibility of developing a spatial analysis related to disaggregated property data and trends in the CBD. This research supports the work of Hamidi et al. (2020) in the sense that planners and local governments play a key role in adopting measures tailored to their community for more effective implementation of social distancing measures and to mitigate the adverse impacts on businesses, households, and citizens (Hamidi et al., 2020). Planners are thus requested to understand the impacts, the temporary and permanent changes, the short-term and long-term implications, and how we reimagine the form and function of future cities to reposition the post-pandemic city to be less vulnerable and more resilient.

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Conflict of Interests

The authors declare no conflict of interests.

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Article

Uneven Trajectories and Decentralisation: Lessons From Historical Planning Processes in Saint-Étienne

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Abstract
Once the industrial capital of France, Saint-Étienne has faced the closure of mining pits, steel plants, and textile firms in close succession, leading to population loss and social and economic challenges, and making the city an outlier in France as a large-sized shrinking city. There has generally been a lack of temporal approaches to urban shrinking processes and calls to incorporate historical institutionalism in planning research. This research will use path dependence—a conceptual framework where a critical event causes a process that is marked by reproductive logic—as a central explanatory tool to assess historical planning processes in Saint-Étienne. This article identifies a critical event—the publication of the first spatial plan for the Saint-Étienne region—and then considers temporal self-reinforcing processes, reviewing subsequent local spatial planning strategies through a culturalist theory frame. It shows that spatial strategies have not adapted over time to the reality of shrinkage; local beliefs in growth displayed path-dependent features and resulted in decentralisation and deepening socio-economic inequalities both within the metropolitan area of Saint-Étienne and with its larger neighbour, Lyon. More broadly, for metropolitan areas to be able to adapt to future changes and be resilient, it will be crucial for urban planning policy and research to consider the extent to which planning strategies can self-reinforce and to find ways to adapt these strategies in the face of global urban transformations.

Keywords
historical processes; path dependence; planning policy; Saint-Étienne; self-reinforcing processes; shrinking cities; spatial planning; urban shrinkage

Issue
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1. Introduction

In the global context, a division has emerged between the “places that don’t matter” (Rodríguez-Pose, 2017, p. 190), or “left behind places” (Martin et al., 2021, p. 12), and thriving, large cities and regions. However, the reality is more nuanced. Just like struggling small and medium-sized cities, larger metropolitan areas have been transforming and some have witnessed their population shrinking; it has been argued that shrinking cities may represent the canary in the coal mine of global systemic transformations (Audirac et al., 2010).

Despite the growing body of research on shrinking cities, a recent qualitative meta-analysis revealed that work on its temporal dimensions is underrepresented in studies (Döringer et al., 2020), although some exceptions should be noted, (e.g., Hartt, 2018; Hoekveld, 2012). Taking this into account, this article focuses on the concept of path dependence and its potential to explain the trajectories of (shrinking) cities and regions. The notion of path dependence is inherently temporal and historical, referring to the idea that past decisions can impact outcomes over a long period through self-reinforcing processes. A path dependence theoretical framework was adopted to consider the evolution of planning policies in a shrinking city in France, Saint-Étienne, and its surrounding area over two decades (1963–1978).

The 1919 Loi Cornudet was the first significant French urban planning law; however, only a quarter of the Cornudet plans were implemented by the eve of the

Second World War. A subsequent 1943 law set the basis for centralised planning and stayed in force until the devolution laws of the early 1980s. The 1960s were characterised by the emergence of spatial planning (*aménagement du territoire*), including the Loi d'Orientation Foncière of 1967, which remained in force until 2000. The latter created the Schéma Directeur d'Aménagement et d'Urbanisme (SDAU), a supra-local planning document setting out development guidelines, and the Plan d'Occupation des Sols, which focused on land use at the local level. These were superseded by the Solidarité et Renouvellement Urbain 2000 law that introduced the Schémas de Cohérence Territoriaux (replacing the SDAU with a broader vision encompassing housing and transport) and the Plans Locaux d'Urbanisme (replacing the Plan d'Occupation des Sols).

In terms of governance structure, the French administrative system has increasingly moved away from a centralised, Jacobinist tradition towards a greater role for local urban areas in metropolitan governance (Demazière, 2021). This included the establishment of eight rebalancing metropolises to counter the dominance of Paris in the French economy in 1963, followed by devolution laws (*lois de décentralisation*) in 1982. In terms of inter-communal cooperation, although some forms of collaboration emerged in the late 19th century, it was not until the 1990s that legislation established inter-communal collaborative structures at different geographical levels, granting them their own fiscal revenues along with compulsory administrative jurisdictions, with an acceleration of inter-communal collaboration between the 1990s and today. The devolution laws did not modify the nature of urban planning documents; however, the planning system began to be led by local authorities rather than by the central government.

The first part of the article will define urban shrinkage and the concept of path dependence in more detail, leading to the theoretical framework and aims of this research. The second part of the article will introduce the qualitative research methodology and data collection approach before the third part presents the results of the analysis of local historical planning processes from the 1960s and 1970s through a culturalist theory frame, and the extent to which they have exhibited self-reinforcing processes and driven decentralisation processes in turn.

2. Urban Shrinkage: A Product of Global Systemic Transformations

To Martinez-Fernandez et al. (2012), a shrinking city can be defined as an urban area—a city, part of a city, an entire metropolitan area, or a town—that has experienced population loss, economic downturn, employment decline, and social problems as symptoms of a structural crisis. The term "urban shrinkage" is used to stress the fact that this phenomenon is a multidimensional process with multidimensional effects and has economic, demographic, geographic, social, and physical dimensions.

Urban shrinkage is global, although the causes leading to this phenomenon vary. In Europe, the narrative around shrinkage has had a strong economic dimension; urban shrinkage is predominantly linked to deindustrialisation processes in studies focusing on Western Europe (46%), in contrast to other contexts (e.g., Japan, the Mediterranean region) where demographic change has been the main driver for shrinkage (Döringer et al., 2020). Fol and Cunningham-Sabot (2010) show that urban shrinkage results from inevitable processes of urban evolution, caused by entropy or the preferences of economic agents; processes of suburbanisation, which feed on the development of urban centres; demographic factors; and/or economic innovation cycles.

Due to agglomeration effects, the consequences of shrinkage are greater than the sum of the individual losses, affecting not just basic industries, but also the services these industries formerly supported (Olsen, 2013). Shrinkage has consequences resulting from population loss such as housing vacancies, the underuse of infrastructure or decreasing tax revenues (Haase et al., 2013). These transformations have in turn caused a crisis of mobility, ageing local populations, and social polarisation, and worsened social divisions between growing places and shrinking places (Oswalt & Rieniets, 2006).

3. Path Dependence: A Polysemic Concept?

Events and processes serve as temporal anchors for organising case study research (Mahoney, 2021). These are at the core of the concept of path dependence. It should be noted that path dependence (sometimes "path dependency" is used) has been used somewhat differently depending on disciplinary outlook.

3.1. Emergence of the Concept of Path Dependence and Definitions in Historical Institutionalism

Although the concept of path dependence emerged in the field of economics (David, 1985), its more useful theorisation for social science has been developed by thinkers under the disciplinary umbrella of historical institutionalism. North (1990, pp. 98–99) employs the concept of path dependence in the sphere of governance to mean that "if…the foregoing story sounds like an inevitable, foreordained account, it should not. At every step along the way there were choices—political and economic—that provided real alternatives."

Building on a review of previous works on path dependence, Pierson (2004) argues that to assert that history matters is insufficient unless we are able to explore why, where, and how. Pierson calls for the use of path dependence in a restricted sense in the social sciences, focusing on social processes that exhibit positive feedback and thus generate branching patterns of historical development.

More recently, and building upon earlier work, Mahoney (2000, 2021) has defined path dependence

as a "causal process," where a "critical event" causes a process that is marked by reproductive logic; the explanation of why the case starts down a particular path in the first place is crucial to the analysis. Importantly, "on the front end of that sequence, the requirement that a critical event set things into motion ensures that outcomes cannot be explained adequately on the basis of conditions immediately prior to the critical event" (Mahoney, 2021, p. 295). Ex-ante or initial conditions do not effectively anticipate the outcome, and path-dependent sequences feature theoretically puzzling outcomes that are not well explained by the *conditions prior to the occurrence of the critical event* that launches the sequence. This brings path dependence beyond the idea that the past matters, albeit path dependence is highly sensitive to early events (Mahoney, 2021).

Mahoney (2021) outlines that different types of self-reinforcing sequences can be identified, under the rationalist, structuralist, and culturalist theory frames. In the rationalist theory frame, institutions are reproduced through the rational cost-benefit assessment of the actors, while in the structuralist theory frame, power dynamics explain persistence and continuity, and institutional reproduction creates conflict between collective actors that are advantaged against those that are disadvantaged. Finally, in a culturalist frame, the initial precedent for what is appropriate or normal forms a basis for making future decisions about what is appropriate or normal. In effect:

> Institutionalist reproduction is grounded in actors' subjective orientation and beliefs about what is appropriate. Their own understandings are embedded in larger systems of meaning and overarching norms about the right thing to do rather than cost-benefit analysis or from resource-derived actor power. (Mahoney, 2021, p. 303)

In this research, path dependence processes in Saint-Étienne will be assessed through a culturalist lens.

3.2. Use of the Path Dependence Concept in Urban Studies

In urban studies, path dependence relates to the characteristics of a system that is dependent on the conditions in which it takes place; initial choices by historical actors influence the future forms of the city, and the more the material dimension of a city is established, the less it is likely to disappear; a small initial difference can have lasting consequences (Brun et al., 2020; Pumain, 2018). Bontje et al. (2011) have identified path dependence processes in the development of creative city-regions in several cities in Europe and have observed that some former manufacturing centres have performed well in the post-Fordist era while others are still struggling to recover from deindustrialisation. The authors suggest that city-regions with a long tradition in trade, finance, and/or creativity often have more favourable points of departure for the delivery of effective creative city-regions strategies (Bontje et al., 2011). As Musterd and Murie (2010, p. 37) argue:

> Without denying the importance of breaks and recent changes in political systems and policies, the studies of individual cities highlight the importance of longer development paths. The nature and shape of city economies do not necessarily result from policies and the most recent choices [but from] the importance of long established policies and structures and often a strong inertia.

3.3. Applying a Path Dependence Approach to Historical Planning Processes

In light of historical institutionalist definitions of path dependence above, although urban studies have increasingly considered urban historical trajectories and their consequences for urban development, one could argue that these are different things (although they are both anchored in history and time). For instance, on which hill a settlement is founded can be considered a critical event which sets some spatial self-reinforcing processes into place, creating a form of *settlement* dependence. Longer traditions and political, social and economic, and historical paths are also relevant to the study of urban trajectories, but if we are to use path dependence as a tool to assess more recent urban policy *processes*—which as social processes have the potential to be self-reinforcing—settlements and urban forms defined many decades, if not centuries ago and longer historical paths will be part of the ex-ante conditions, which, following Mahoney (2021), cannot explain adequately a critical event occurring.

In that sense, we believe that two different things are referred to here and agree with Sorensen's (2015) argument that (a) there has been no systematic effort to incorporate historical institutionalism into planning history research and (b) "planning history easily lapses into the telling of interesting stories and fails to further a cumulative project of knowledge building" (Sorensen, 2015, p. 17). Like Pierson (2004), Sorensen calls for a narrower definition of path dependence for application in the field of planning history. Further, he outlines that urban social and political institutions are likely to be contingent and that institutional density and complexity will mean that the range of possible outcomes and a different result will be unknowable until after the critical juncture. This means that the "critical moments of new institution building need to be traced back and identified to be able to determine which institutions have tended to become path dependent, and why, and which actors were influential in institutional choices" (Sorensen, 2015, p. 24). This also encompasses the kind of planning institutions (plans, regulatory processes, infrastructure, urban forms,

and governance arrangements) that tend to change primarily at critical junctures, contribute to creating urban space, and then get stuck in path dependence (Sorensen, 2015). In the same vein, Tasan-Kok (2015) argues that "merely charting the historical sequence of events does not constitute a comprehensive and systematic frame of analysis for understanding the complex transformations observed in cities" (Tasan-Kok, 2015, p. 2185). Through what she calls path analysis in her study of the development trajectory of Istanbul's Levent-Maslak axis, she aims to develop a framework for the use of path dependence concepts in urban development, outlining that organisational and institutional processes produce destructive and creative moments.

4. Methodology and Data

4.1. Aim of the Article

We adopt Mahoney's (2021) view that a path dependence framework must look at a critical event which starts self-reinforcing processes rather than dependence on urban form and historical trajectories (although broad elements of contextualisation will be presented below in Section 4.2). The starting point is that the path dependence concept would be valuable in exploring historical planning strategies and institutions in the case study city: To what extent did they present self-reinforcing processes and path-dependent features? Indeed, whilst Saint-Étienne was facing severe difficulties from the 1960s onwards, leading to urban shrinkage later on, urban policies have not adapted to this new reality. Although we must guard ourselves against teleological interpretations of histories, i.e., interpreting the past with the greater knowledge of the present, hindsight can be gained through looking at historical documentation. The case study is presented next, followed by the data collection approach.

4.2. Saint-Étienne: An Outlier Among French Cities

4.2.1. Historical Development

Saint-Étienne presents a unique profile among French cities, to the extent that it has been called a *ville anglaise* as it experienced mushrooming growth and rapid industrialisation in the first half of the 19th century. Before the industrial revolution, Saint-Étienne was a small town with no administrative, political, and cultural decision centres to boast of. It gained these later as a result of its fast economic growth. It also did not possess a university until 1970.

The city is located in a challenging site, surrounded by seven hills and severely limited in its expansion by topographical constraints. It is part of the mountainous landscape of Massif Central, with harsh weather conditions in the winter, and was disconnected from other axes of circulation for a long time. While one of the first rail tracks in the country was established between Lyon and Saint-Étienne in 1832, the motorway between both cities that also connects Saint-Étienne to the Rhône Valley corridor was only completed in the 1980s.

In light of its geographical situation, this rapid development makes Saint-Étienne an outlier among French cities. The landscape—fertile in iron and coal—explained the boom of the city, building on proto-industrial activities in metal, weapons, and textiles. As a result, the region of Saint-Étienne has long been associated with manufacturing and coal extraction in people's imaginations. Deindustrialisation hit the town in earnest from the 1970s onwards, although the city has experienced several economic shocks during its history, e.g., the European Coal and Steel Community 1951 Treaty that opened a path to the closure of local pits in 1975. Neighbouring valley towns and industrial centres (Saint-Chamond and Rive-de-Gier) were also affected.

4.2.2. Current Socio-Economic Profile

Saint-Étienne is one of the few large shrinking cities in the French context. Since its demographic peak of 223,223 inhabitants in 1968, the city itself has lost over 50,000 inhabitants, falling under the threshold of 200,000 inhabitants in 1990, and standing at 173,089 inhabitants in 2018 (Insee, 2021). The poverty rate was 26% in 2019, compared to a French average of 14.6% (Insee, 2022), and the city is displaying the visual stigmas from urban shrinkage, from degraded and abandoned buildings to empty brownfield sites.

Decentralisation processes locally have been significant, leading Cretin (1995) to assert that Saint-Étienne is not within Saint-Étienne anymore. These are often referred to in the French context as *périurbanisation*, i.e., the extension of built-up areas through greenfield housebuilding in the periphery of urban agglomerations. Within the urban area, the ratio of land artificialisation (artificialised land includes sealed surfaces but also soils of gardens and green spaces in and around buildings and along roads; see INRA & IFSTTAR, 2017) for 1,000 inhabitants went from 24.9 ha in 1999 to 29.6 ha in 2006 (Béal et al., 2020). Inhabitants in the rural or low-density local authorities in the periphery are wealthier (€27,000 average household taxable income) compared to city dwellers in Saint-Étienne (€20,000 average household taxable income; Maury & Bertrand, 2014). Between 2003 and 2008, the city centre lost 4,145 people to the periphery (Bretagnolle et al., 2020).

Miot (2012) has demonstrated that deindustrialisation in the Saint-Étienne region has resulted in the city centre becoming less appealing; the twin processes of deindustrialisation and decentralisation have fostered increasing spatial polarisation in the urban region. In the city centre, low rents have prevented private landlords from maintaining dwellings to an acceptable standard, leading to an increase of derelict housing and vacant dwellings, and local amenities closing as a result.

In many neighbourhoods, housing and industry uses are closely imbricated, as industrialisation has been at the heart of the urbanisation process historically. Decentralisation in the urban region is both residential and economic. Overall, the number of jobs in the urban area of Saint-Étienne decreased by 3.2% between 1968 and 2008, but while it has fallen by 16% in the city of Saint-Étienne, it has doubled in the periphery (Miot, 2012).

4.2.3. The Metropolitan Status of Saint-Étienne

We have defined above what is meant by urban shrinkage and path dependence. Given the focus of this issue, we would like to offer some detail on the meaning of metropolitan areas in the French context. The first designated metropolitan areas were the *métropoles d'équilibre* in 1963 (named as such as they aimed to rebalance growth towards regions outside of Paris). The identification of the metropolitan region of Lyon–Saint-Étienne–Grenoble stemmed from the central government. Among the eight metropolitan areas, Lyon–Saint-Étienne–Grenoble covered the largest geographical area and population. It should be noted that Grenoble, which became later a leader in R&D activities and in the electronic and IT sector (leading to it being nicknamed the French Silicon Valley), has gone its own way, looking towards the Alpine valley in the East (Insee, 2015), while Saint-Étienne and Lyon still collaborate as part of a large *pôle métropolitain* today, including the two cities as well as a region covering 173 local authorities.

In terms of intercommunal collaboration within the Saint-Étienne metropolitan region, the efforts of the state to accompany deindustrialisation faced individualist attitudes from local authorities constituting the Saint-Étienne urban region (corresponding to the perimeter of the local spatial planning process; see Figure 4); indeed, the devolution laws led to a rise of local interests at the expense of supra-local collaboration (Merlin, 2013). It was only in 1995 that the first intercommunal structure of 22 local authorities was created, later than in most French cities. Nonetheless, decentralisation processes have not yet been fully addressed, as politicians from the periphery are keen to pursue economic and demographic growth within the boundaries of their local authority (Béal et al., 2020).

The term *métropole* was abandoned for years and re-emerged recently with the MAPTAM law of 2014 (Loi de Modernisation de l'Action Publique Territoriale et d'Affirmation des Métropoles) aiming to offer more powers to several French metropolitan areas as part of devolution policies in France (*décentralisation*), to allow metropolitan areas to compete not only nationally, but globally this time. From the inception of the *métropoles d'équilibre*, Saint-Étienne's urban region was part of the *métropole tricéphale* (three-headed metropolitan area) Lyon–Saint-Étienne–Grenoble and was only defined again as a MAPTAM *métropole* in 2018 by law (see Figure 1), although the name "Saint-Étienne Métropole" was adopted before that date to designate intercommunal collaboration.

4.3. Data Collection Approach

The data presented in this article originates from archival research at the Municipal Archives of Saint-Étienne (AMSE) between March and July 2021. In order to

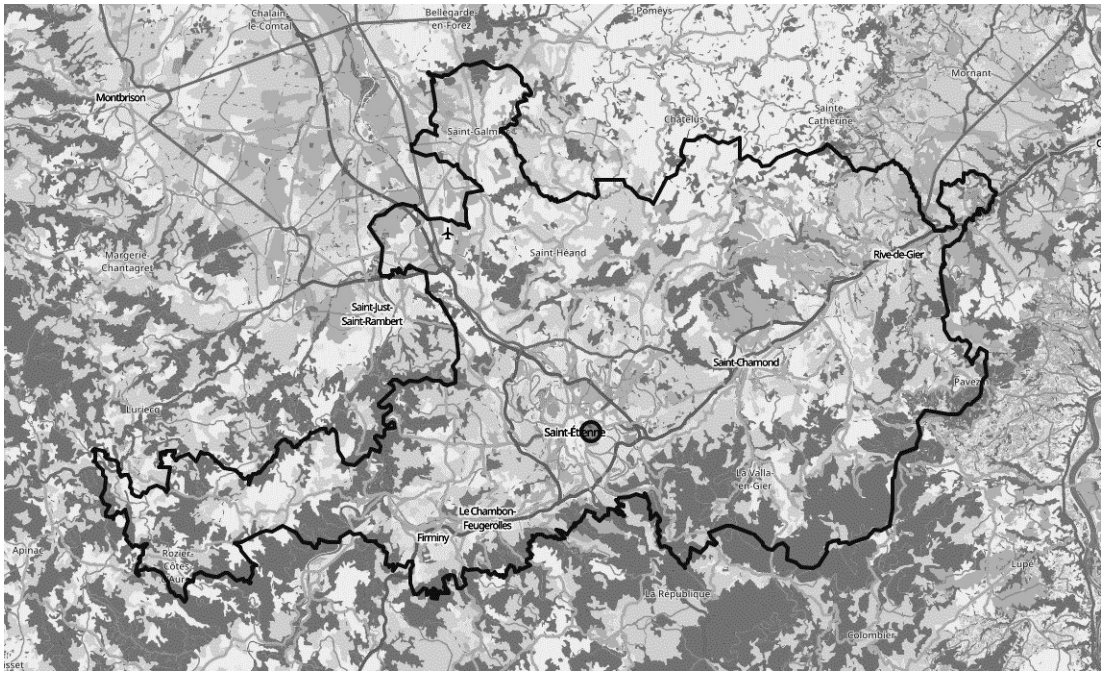

Figure 1. The current delimitation of Saint-Étienne Métropole. Source: OpenStreetMap.

examine Saint-Étienne's trajectory through a path dependence lens, and to assess the extent to which local historical planning strategies and institutions present self-reinforcing processes and path-dependent features, documents gathered include draft and adopted planning strategies, local promotional brochures, internal communications and notes that were previously restricted access, and newspaper cuttings. This data was gathered over the course of several visits to the AMSE. We carefully examined records in archival catalogues relating to urban planning, spatial planning (*aménagement du territoire*), and economic development. All documents gathered are post-1960s, reflecting the rise of spatial planning in 1963 with the creation of the Délégation à l'Aménagement du Territoire et à l'Action Régionale (DATAR), a French government department working for the Ministry of Territorial Development that created the eight *métropoles d'équilibre*. The limitations are that archival records are by definition incomplete, depending on which documents have been transferred to the AMSE. Documents were then coded using qualitative analysis software. For the scope of this article, data was extracted relating to key planning strategies, decentralisation, metropolitan areas, promotion of the town centre, spatial constraints, and growth discourses. A content analysis was then undertaken to assess path dependence, by identifying critical events and considering self-reinforcing processes through a culturalist theory frame. Excerpts from documents which were particularly informative in terms of actors' subjective orientation and beliefs were translated from French by the author and included as quotations.

5. Analysis of Historical Planning Documents for the Urban Region of Saint-Étienne

We have identified the regional planning process that started with the DATAR inception as the critical event which started a self-reinforcing process in local urban policies, which this section will present.

5.1. The Organisation d'Étude et d'Aménagement de l'Aire Métropolitaine Lyon–Saint-Étienne–Grenoble's Schéma Directeur d'Aménagement et d'Urbanisme (1966–1970)

As part of the *métropoles d'équilibre* creation, a spatial planning strategy (SDAU de la Métropole Lyon–Saint-Étienne–Grenoble) was prepared by the Organisation d'Étude et d'Aménagement de l'Aire Métropolitaine Lyon–Saint-Étienne–Grenoble (OREAM), an organisation acting under the umbrella of the national Planning Ministry (see Figure 2). The SDAU Lyon–Saint-Étienne–Grenoble was adopted on 26 May 1970 (OREAM, 1970) after several years of preparation as part of the French fifth National Plan (1966–1970). The OREAM was set up in 1966 for the Lyon and Saint-Étienne plan (both joined by Grenoble in 1968), but collaboration on a spatial planning strategy between Lyon and Saint-Étienne began in 1964.

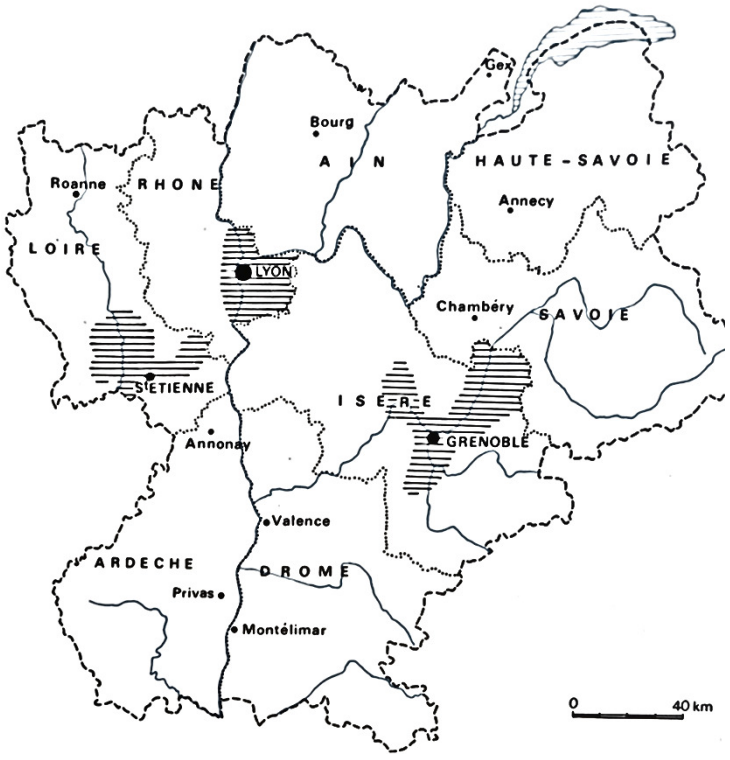

Figure 2. Map of the regional context, including the hatched areas covered by the SDAU Lyon–Saint-Étienne–Grenoble. Source: OREAM (1970).

The objectives of the OREAM plan were to build a strong Lyon–Saint-Étienne–Grenoble metropolitan area through concentration and polarisation, a term which did not have the pejorative connotation it has today (see, for instance, Lang & Görmar, 2019). The rationale was to manage future growth and the threat to rural space if development was not concentrated and polarised. The idea was also that the three metropolitan areas should be distinct and that Lyon, the larger city, should not overshadow its smaller neighbours. As opposed to the thriving administrative, business, industrial, and cultural centre of Lyon and the potential for tertiary employment growth in Grenoble, the plan considers the difficulties of the Saint-Étienne's urban region, highlighting that "its situation away from the great Rhône corridor constituted for this urban region a disadvantage that was overcome successively by a canal, a rail connection and now a motorway" (OREAM, 1970, p. 12) and calling for efforts to improve access to the city further. Population projections were also prepared on the basis of path growth and are presented in Table 1 (OREAM, 1970).

On the basis of these projections, the plan promoted the "decongestion" of Saint-Étienne towards a Northern extension (*extension Nord*), the only zone allowing for industrial expansion in light of spatial constraints (which corresponds to the east of the Plaine du Forez [Forez Plain; see Figure 3]) and therefore described as an "unavoidable" option (OREAM, 1970, p. 98). This would drive economic expansion with 60,000 jobs forecast. The city centre of Saint-Étienne would focus on

Table 1. Annual percentage of past population growth and future perspectives in the 1970 OREAM plan.

	Past growth		Future growth perspectives	
	1954–1962	1962–1968	1968–1985	1985–2000
Urban region of Lyon	1.90%	2.00%	2.05%	2.10%
Urban region of Saint-Étienne	1.15%	0.85%	1.15% to 1.45%	1.60% to 2.10%
Urban region of Grenoble (except Pontcharra-Montmélian)	3.75%	3.40%	2.10% to 3.40%	1.25% to 2.00%
The three metropolitan urban regions combined	1.85%	2.00%	1.90% to 2.10%	1.80% to 2.10%

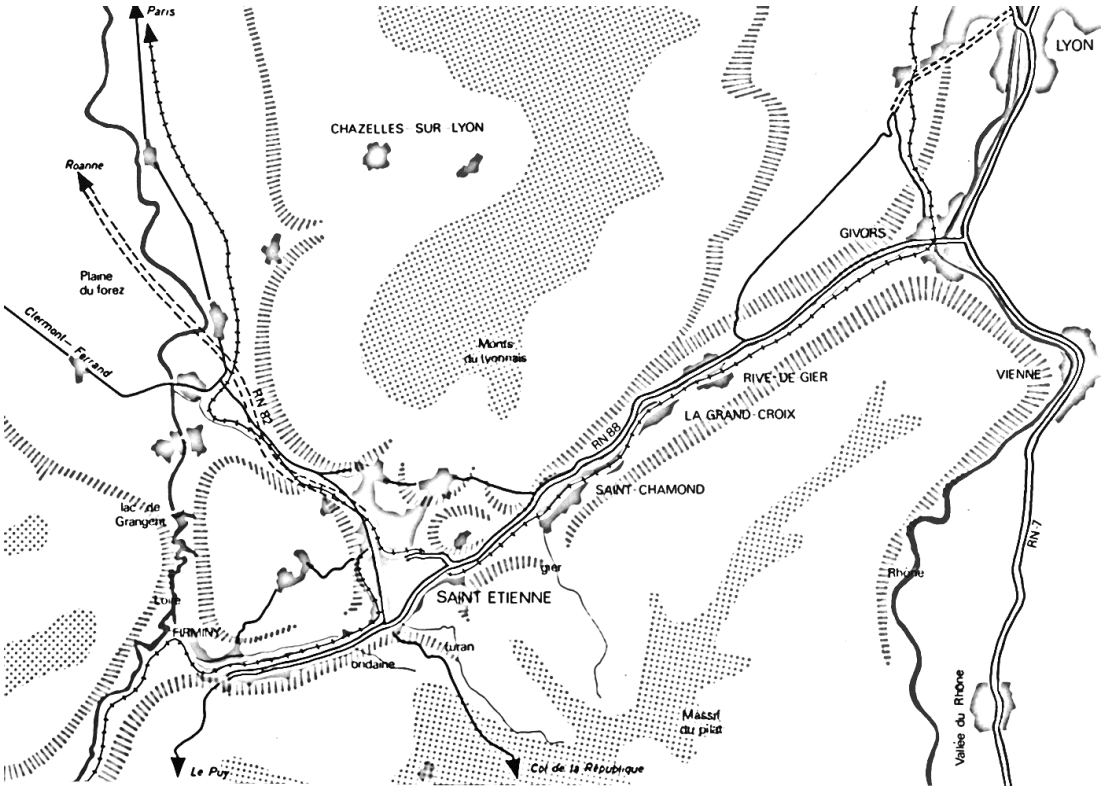

Figure 3. The Saint-Étienne urban region. Source: OREAM (1970).

service-based employment and would be linked with the Forez Plain by public transport.

The plan considered several spatial strategies. Strategy A focused on the restructuration of the city centre of Saint-Étienne, but it was seen as a "long-term endeavour" with too high a cost. It is interesting to note the contradiction here, as although the population "hypotheses" were in the long-term (up until 2000), the plan was rather short-termist. Strategy B—which was deemed unsuitable—was the creation of a parallel Saint-Étienne and the abandonment of the city centre. Instead, a middle-ground, Strategy C, was chosen, with, on the one hand, the northern extension in the Forez Plain for industrial expansion and a new residential zone at Andrézieux-Bouthéon, and, on the other hand, a restructuration of the city centre, i.e., industrial conversion and development of higher education and research activities in the city centre. The attraction of the city centre is qualified as being more of necessity than of genuine appeal in the document, with a size and quality far away than what would be expected in an agglomeration of 400,000 inhabitants. Hence the city centre would need to be "restructured" to support the growth of the tertiary sector, through the renovation of key central sites and the improvement and development of public transport (OREAM, 1970).

5.2. Saint-Étienne's SDAU 2000 Preparation Process

In parallel to the preparation of the OREAM plan, the Loi d'Orientation Foncière of 1967 established the SDAU for agglomerations of more than 10,000 inhabitants, which needed to align with the aims of the OREAM plan by decree. These strategies were led by the central government (through the Direction Départementale de l'Equipement) but in closer collaboration with local authorities. For the Saint-Étienne urban region, Epures (formerly Association Pour l'Étude des Plans d'Urbanisme de la Région Stéphanoise) took up this role (see Figure 4 for the perimeter covered in darker grey).

5.2.1. The 1970 White Paper

As part of the SDAU 2000 preparation process, a white paper was prepared in July 1970. We were able to consult an annotated, internal copy from October 1970 (Epures, 1970b). As expected, the population projections, aims, and terminology align with the OREAM plan: for instance, through the stated need for the "primacy" and "restructuration" of the city centre. The fact that Saint-Étienne did not have a *banlieue* (suburb) was seen as an asset for a region of this importance, as the paper argues that Saint-Étienne's secondary centres already ensure a hierarchy in the level of services offered to the inhabitants. The white paper outlined that demographic growth had two effects on spatial planning: improving living conditions and bringing an innovative spirit, hence the need for voluntarist action, with a "chicken and egg" situation (Epures, 1970b, p. 31) where economic growth and urban growth are tightly intertwined.

However, the tension between local aims and the OREAM plan can be read between the lines. The white

Figure 4. Spatial perimeter covered by the local SDAU process. Source: Epures (1970b).

paper outlines that "the necessity of demographic growth" is just "hypotheses that are justified by events and actions from previous years" (Epures, 1970b, p. 27). As part of the white paper preparation process, a working group focusing on development and industrialisation as well as the position of the Saint-Étienne region within the Lyon–Saint-Étienne–Grenoble metropolitan area qualifies the Forez Plain of "genuine outlet" that could form a new centre for population to settle in the long-term (Epures, 1970a, p. 1). This option is presented as being "virtually inescapable," and requiring "voluntary urbanisation" to accompany the growth of the Saint-Étienne region by occupying "attractive sites" (Epures, 1970a, p. 4). However, the white paper itself outlines that it would not be a desirable option due to the increase in car reliance and impact on the city centre (Epures, 1970b).

5.2.2. City Centre Study (1973)

Likewise, a subsequent study conducted by Epures (1973) on the city centre and published in 1973 critiques decentralisation, arguing for town centre promotion rather than a *laissez-faire* approach; to let the centre degrade "is all the more dangerous that the economic growth of an agglomeration and the quality of life to which the town centre contributes are increasingly linked" (Epures, 1973, p. 10). The study identifies an important reduction of 1,000 inhabitants per year in the city centre, i.e., over 1% of the population—more than 1,500 dwellings each year, especially amongst inhabitants with high incomes. At the same time, the document states that decentralisation stems from the cost of urban land linked to the "current demographic growth," in a puzzling lack of clarity given the figures presented (Epures, 1973, p. 4).

5.2.3. Preparatory Notes on the SDAU 2000 and Local Discourse (1974–1977)

Following the white paper of 1970, further preparatory work was conducted on the Saint-Étienne spatial strategy (named SDAU 2000) over several years. Archival records provided valuable behind-the-scenes preparatory notes for the plan, outlining actors' views. For instance, meeting minutes at Epures dated from May 1975 record participants saying that the figure of 800,000 inhabitants in 2000 is a "political choice," a "postulate" (Epures, 1975, p. 2). In a similar vein, while the city was facing increasing difficulties, in a meeting on the SDAU in September 1976, as the question of maintaining the above hypothesis occurs, one actor replies that we have to stay optimist and say so ("SDAU de la Région Stéphanoise," 1976).

5.2.4. Epures' *SDAU 2000—Saint-Étienne: 7 Questions, Une Volonté* (1978)

The process outlined above led to the preparation of a document by Epures entitled *SDAU 2000—Saint-Étienne: 7 Questions, Une Volonté* (SDAU 2000—Saint-Étienne: 7 Questions, One Vision). We were able to consult a draft version which, whilst we do not have an exact date, is from after June 1975 (Epures, n.d.). The demographic hypothesis of 800,000 inhabitants is still proposed to "convey the economic weight of the Saint-Étienne's urban region within the *métropole d'équilibre*" (Epures, n.d., p. 24). It is stated that this figure only has a "relative value," is a "convenient bias" and an "act of faith" in the economic future of the urban region (Epures, n.d., p. 24), to re-establish its industrial importance in the larger Rhône-Alpes region. Among other things, the document looks to orientate the general development of urbanisation and prevent the fragmentation of urban activities (i.e., work locations away from residential locations and quality of life by avoiding long commuting times; Epures, n.d.).

In the end, although a final version of *Saint-Étienne: 7 Questions, Une Volonté* was released in 1978, the SDAU 2000 was never adopted, and Saint-Étienne spent many years in a planning strategy limbo (Cretin, 1998).

6. Discussion

Through the case of historical planning processes in Saint-Étienne, starting with a critical event that was the creation of *métropoles d'équilibre* and ensuing spatial strategies, some self-reinforcing processes can be observed.

The content analysis has shown that the 800,000 inhabitants projection figure from the OREAM plan endures in subsequent discourse and beliefs, corresponding to the high importance of early events in path dependence. This figure was on the horizon of the years 1985 to 2000, and the northern extension was based on a growing population, a "chicken and egg" situation (Epures, 1970a, p. 31) to quote again the expression of one of the documents examined. However, despite a loss of population from 1968 onwards—the city has not regained its historical peak since—and clear signs of economic vulnerability, it was never questioned. It could be the legal requirement to align with the OREAM plan, the desire to stay in the race with Lyon and Grenoble, and to obtain the state credits corresponding to a growing population; nevertheless, the use of epithets such as "optimist" suggest that actors also were convinced of the future growth of the city. Archival records showed that local authorities in the Forez Plain actively opposed the northern extension ("Les villes du Forez vers un avenir possible," n.d.), which was of course a case of retaining local powers over strategy, but also scepticism about population projections. The local press was also very critical of the aims of the SDAU at the time (Tibi, 1975).

It is hard to say what would have happened in terms of decentralisation if more apt population projections had been carried out, as it may not have prevented decentralisation. This is where we have to be careful about the risk of teleology. Nonetheless, even though

the strategies wanted to maintain the primacy of the centre, and argued that the development of single dwellings must be managed, in the absence of an adequate SDAU for the urban area, the Forez Plain grew as a residential area and a source of industrial employment, at the expense of the city centre (Miot, 2012) as it was easier for industrial employment to settle than to "restructure" the city centre, where tertiary jobs did not replace lost industrial employment.

The expectation of growth set out in the OREAM plan (Table 1) with the idea of bringing Saint-Étienne into the rank of a regional metropolis and rebalancing growth led to the opposite result; as policies were not fit for purpose, Saint-Étienne remained on the periphery of the Rhône-Alpes region (Epures, 1997). This subjective orientation towards growth is surprising, as many of the actors were aware of the challenges faced by the city. For example, a promotional brochure entitled *Une Ville Face à Son Avenir* (*A City Facing Its Future*) from around 1970 affirms:

> It may seem like a paradox to talk about accelerating transformations at a time when our region is facing grave difficulties. One could wish for a slow evolution towards renewal. But our era doesn't care for slowness and acceleration is one of the essential laws of modern industrial economies. (Syndicat d'Initiative de Saint-Étienne et de la Région Stéphanoise, n.d., p. 20)

The same brochure defends the idea that the SDAU 2000 assigned itself "reasonable objectives, that may not even sound ambitious" (Syndicat d'Initiative de Saint-Étienne et de la Région Stéphanoise, n.d., p. 55). Though shrinkage was not a well-identified phenomenon at the time, for a city that had already lost population and faced crises, this belief in future growth lasted for years despite signs of change, displaying path-dependent features.

7. Conclusion

In a column in response to a *Le Monde* article critical of Saint-Étienne's image (Zappi, 2014), several academics defended the city's image but argued that the impetus for city policies in Saint-Étienne had come from the French central government rather than from local actors for a long time ("A Saint-Étienne, pauvreté n'est pas une fatalité," 2014). Although it is beyond the scope of this article to look at path dependence processes over a period of more than 50 years, examining the 15 years following the start of the *métropoles d'équilibre* process suggests that the aims of planning strategies can be particularly sticky and path-dependent. The lack of place-based national policies has had the opposite effect (decentralisation) than the one desired (polarisation) and has entrenched inequalities. Although the Saint-Étienne region presented many topographical constraints and expansion could only take place towards the north, if economic stagnation had been considered, greater emphasis may have been put on Strategy A of the OREAM plan of maintaining the city centre; instead, depopulation has led to persistent difficulties for the city centre and these have yet to be fully overcome. Indeed, the dominant orientation towards growth can intensify the already negative consequences of shrinkage, as Wiechmann and Pallagst (2012) show in their study of Schwedt and Dresden in Eastern Germany and Youngstown and Pittsburgh in the US.

A limitation of this research is the absence of comparison. As cities are affected by exogenous factors of change that in many cases contribute to critical junctures of institutional change in planning systems, Sorensen (2015) argues that the impacts, responses, and capacities to respond vary between different places, which is a significant opportunity for the planning history research agenda. Further, beyond plans, the extent to which governance arrangements, i.e., the lack of intercommunal collaboration, have been characterised by path-dependent features could be considered further, as well as other critical events in the trajectory of Saint-Étienne and its urban region.

Finally, Mahoney (2021) has outlined that as opposed to self-reinforcing processes that follow reproductive logics, reactive sequences follow transformative logics. For metropolitan areas to be able to adapt to future changes and be resilient, it will be crucial for urban planning policy and research to consider the extent to which planning policy and strategies tend to self-reinforce and to find ways to adapt strategies in the face of global urban transformations.

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Conflict of Interests

The author declares no conflict of interests.

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Article

"The System Is the System, Isn't It?": The Case for a Just Devolution

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Abstract
How do actors involved in decision-making around urban planning relate to devolution? How do they perceive external forces influencing their cities, and how can the interventions they make be better oriented towards tackling inequalities? We reflect on these questions with data from interviews conducted with urban leaders and housing and development policy stakeholders in the second cities of Birmingham, UK, and Lyon, France. We compare narratives and assess how they relate to the concept of spatial justice in differing contexts of devolution. Drawing from findings in two cities with distinct governance structures, we uncover common issues with neoliberal, growth-oriented mindsets among key actors, despite contrasting rhetoric around social justice. We contend that there is thus a need to define mechanisms for making devolution more attentive to inequalities. This could be achieved through incorporating the concept of spatial justice into devolution strategies. We further argue that, while autonomy to make decisions is an important aspect of devolution, this autonomy needs to be operationalised within an appropriate constellation, including a progressive political-economic culture, sufficient bureaucratic authority and resources, and an active and informed citizenry. As such, devolution is a two-way process of having powers devolved from above and building capacity from below to make use of these powers effectively. We conclude by reflecting critically on the potential of existing strategies in the two contexts to overcome social inequalities and realise the aspirations of "just devolution."

Keywords
decision-making; devolution; investment; spatial justice

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1. Introduction

Devolution, or the reallocation of fiscal resources and decision-making powers from higher to lower tiers of government, is an important theme in research on regional inequalities and economic disparities within countries. Empowering sub-national governments to make use of their "informational advantage" or their alleged greater understanding of local needs and strengths (Davoodi & Zou, 1998) is frequently written about as an inherent good or framed as a practical step towards achieving more just societies (Ascani et al., 2012; McInroy & Lloyd-Goodwin, 2020). There is lively scholarly debate on the extent to which this is true. Our central aim in this article, however, is to introduce an often-neglected concept into the devolution debate: spatial justice, or the "fair and equitable distribution in space of socially valued resources and opportunities to use them" (Soja, 2009, p. 2). The physical contours of spatial injustice can be mapped over time across a defined geographical area and monitored with data to show change. It is therefore a valuable framework that can be used to identify challenges and assess whether interventions have the effect of mitigating or intensifying pre-existing levels of inequality. As we will discuss in this article, much of the discussion of devolution is focused primarily on economic

outcomes, with normative issues frequently absent. We contend that incorporating the concept of spatial justice into devolution strategies would strengthen the normative dimension of the devolution debate, helping to centre inequalities and thus deliver what we term "just devolution," whereby the aim of devolution is not primarily economic growth but rather tackling socioeconomic inequalities and empowering citizens to participate in decision-making.

We draw conclusions from a recently completed international research project, "The Democratic Foundations of the Just City," which sought to understand the role of politics in urban planning policies and outcomes in European cities, particularly with regards to gentrification, the ghettoisation of marginalised groups, and access to affordable housing of a decent quality. The two case studies in this article, Birmingham in the UK and Lyon in France, are comparable in some important regards: they are second cities in developed states otherwise dominated by powerful capital cities, both have relatively large migrant populations, and both continue to have important industrial sectors in their economies. Nevertheless, Birmingham and Lyon are distinguished by substantial differences in their governance models and the extent of devolution from the centre. On the project, we conducted interviews with urban leaders and housing and development policy stakeholders to understand how they relate to devolution, perceive structural forces such as pressure from central government and the market, and articulate their capacity to adapt to these forces for local advantage. As such, our research considered the interaction of ideas, institutions, and interests in shaping urban development outcomes. Among other findings, we uncovered common issues with neoliberal, growth-oriented mindsets among the participants, despite varying rhetoric around social justice. In the British case study, we observed a combination of devolution and austerity measures. This leads us to conclude that devolution in its current form is not sufficient to tackle inequalities. Instead, mechanisms for achieving social and economic inclusion need to be articulated, and the impacts of future investments and interventions upon areas must be more holistically understood.

This article opens with a review of the literature, further exploring the notions of spatial justice and devolution that we integrate into the concept of just devolution. Following this, the case studies are introduced. We then present our research methodology before introducing the analysis of material taken from interviews conducted with key stakeholders. We close by arguing for the need to move beyond encouraging devolution for its own sake, or framing devolution as it is currently constituted as a silver bullet for socioeconomic challenges. Instead, effort needs to be made to define strategies for achieving a more just devolution. This in turn necessitates building local ecosystems that are better equipped to creatively use the autonomy and resources that devolution can bring towards the goal of overcoming social injustices that are physically expressed across urban space.

2. Literature Review

The first body of literature this article draws from is that of spatial justice. Particularly important in this field is the work of Soja (2010), who argues that social injustice can be considered inherently spatial, relating to the unfair distribution of resources, opportunities, and public services (such as transport, education, and healthcare) in the places we live. Moreover, the decisions and values underpinning the production and consumption of space are crucial in determining the degree of social (in)justice expressed across a space. Soja's work calls for disrupting processes that generate unequal spaces and consideration of how historical patterns of neglect determine the path dependency of places in which marginalised groups are more likely to live. The concept of spatial justice builds upon Harvey's (1973) notion of "territorial justice," which refers to the allocation of public resources according to need across an area. Lefebvre's (1968) "right to the city," in opposition to the production and consumption of space as a commodity, is also an important facet in the notion of spatial justice, given its opposition to the emergence of enclaves of wealth and ghettoes of poverty being accepted as a natural fact of urban life. Instead, scholars working with the concept of spatial justice argue that areas of deprivation are spatial manifestations of injustice that ought to be addressed (Drozdz, 2014). On this point, it should be noted that, as much as injustices emerge from the local historical, cultural, and political milieu, so too is spatial injustice differentiated by local ideological and institutional constellations (Cox, 2019). This must be considered when reflecting on the challenges posed by spatial injustice. There is no universal mechanism for achieving spatial justice across space and time.

A further important contribution comes from Fainstein (2010), who outlines a series of principles for planning the "just city." The first of these, equity, describes "a distribution of both material and nonmaterial benefits derived from public policy that does not favour those who are already better off at the beginning" (Fainstein, 2010, p. 36). The second is diversity, where Fainstein (2010, p. 43) disregards the need for assimilation and is relaxed about the emergence of homogenous districts in cities, provided institutions "promote reproduction of and respect for group differences without oppression." On this point, we break with Fainstein, given that data shows a significant correlation between social and ethnic segregation, lower educational attainment, and higher unemployment rates (Zwicky, 2021). Furthermore, the emergence of neighbourhoods comprising almost exclusively of marginalised residents may be the result of structural forces and, in part, the path dependency of historic discriminatory policies. The hypothetical benefits that emerge from the

geographic concentration of marginalised groups, such as the potential for greater political representation, do not, in our view, outweigh the negatives. Indeed, the concentration of marginalised groups can lead to ghettoisation, which is a major driver of intergenerational social injustice (Dlabac et al., 2019). Such spatial concentrations of minority groups might be used as evidence for the emergence of "parallel societies" by those opposed to multiculturalism, with dangerous political implications (Lentin & Titley, 2012; Meer & Modood, 2014). Scholars also argue that this spatially expressed inequality contributes to the reproduction of unbalanced power relations, perpetuating the relative (dis)advantages of groups (Madanipour et al., 2021).

The second body of literature crucial to this article is that of devolution. On this subject, researchers analyse the impacts of moving financial resources and decision-making powers away from central government towards regional, city, or other forms of local government. There is mixed evidence on the effectiveness of doing so, particularly with regard to the optimum degree of fiscal devolution (Rodríguez-Pose & Ezcurra, 2010, 2011; Thießen, 2005). Some statistical analyses show that the devolution of financial resources can result in reduced economic efficiency (Rodríguez-Pose & Bwire, 2004), whereas others find that fiscal devolution can correlate with higher GDP growth (Iimi, 2005) and reduced regional and interpersonal inequality (Ezcurra & Pascual, 2008; Tselios et al., 2012). The turn towards enhancing local autonomy is generally framed across countries as a means of stimulating local and hence national economic growth rates (Cox, 2019). An important overarching factor is the context in which resources are devolved, as well as the composition of the institutional arrangements tasked with making use of these resources. In the British context, the recent devolution of limited spending powers must be considered against a backdrop of intense austerity measures since 2010. For example, the 2016 devolution of £30 million to the newly-formed combined authority covering the Bristol city region does not offset the £156 million cut to the budget of Bristol City Council alone over the period 2010–2020 (Hambleton, 2016). The UK is widely described in the literature as one of the most highly centralised nations in the world, especially with regard to the allocation of financial resources (Carrascal-Incera et al., 2020; Fothergill & Gore, 2021). A study of local autonomy based on 11 factors, including policy scope, financial autonomy, oversight, and institutional depth found that the UK has among the worst performances in terms of local autonomy of any country in Europe. The UK achieved a score of 17.38 out of 37, comparable to the likes of Hungary, Ukraine, and Turkey; in contrast, the top performer, Switzerland achieved 29.76, with countries such as Sweden, Germany, and Poland also performing strongly (Ladner et al., 2016). The study additionally found that local autonomy in the UK decreased slightly over the period 1990–2016.

Critical scholars argue that the focus on economic growth that characterises much of the literature on devolution arises from the neoliberal character of contemporary devolution strategies. Since the 1980s, the fixation on reducing public debt and shrinking the state in many countries has led to an abandonment of the post-war consensus in which national governments took on a redistributive role to address inequalities. Instead, there have been successive waves of devolution and bureaucratic reorganisation as cities and regions have been encouraged to compete, a key aim of which is to sustain national growth rates (Blondel & Evrard, 2019). Devolution is thus operationalised as a tool of neoliberal governance, which prioritises market openness, competition, deregulation, privatisation, and minimal government intervention rather than normative issues such as justice and empowerment. The notion of a welfare state that seeks to improve the life chances of less privileged groups has been replaced by a series of devolved structures with insufficient resources to address inequalities (Cox, 2019). Moving from the national to the urban scale, gentrification has been described as both a product of neoliberal urban policy and a policy in its own right, which has the effect of restoring the class power of elites while being indifferent to the impacts this has upon marginalised groups (Recoquillon, 2014). For instance, urban leaders may justify regeneration projects that displace poorer residents with reference to the need to compete for international investment into cities. Ideas such as class and justice are essentially absent in much of the literature on devolution. The topic is instead framed by depoliticised, technocratic discussions of efficiency and growth figures.

However, devolution does not solely concern finance, but also the granting of decision-making powers and autonomy, as well as towards what ends these interact with local ideas, institutions, and interests. Autonomy in this context is taken to mean the capacity for initiative at the local government level, along with the power of immunity from oversight by higher levels of government over decisions that are made (Blondel & Evrard, 2019). A review noted a range of potential benefits and risks to decision-making arising from devolution (Ascani et al., 2012). In the former category is the "informational advantage" noted above, meaning that services and decisions can be more closely tailored to needs through applying local knowledge in decision-making (Davoodi & Zou, 1998). The authors also highlight the potential for poorer areas to compete with wealthier ones, as well as the opportunity to enhance stakeholder participation and civic engagement in policy and service design. Nevertheless, the review also claims that devolution can bring significant risks. These include a lack of staffing capacity, technical expertise, and robust data collection at the local level to effectively make use of autonomy; the potential for service duplication between overlapping tiers of government, resulting in waste; a perceived greater risk of corruption at the

local level; and the potential for harmful competition between areas, for instance through a "race to the bottom" when competing to attract investment. The threat of wealthier regions using devolved powers and funding to out-compete poorer ones means that devolution can exacerbate regional disparities (Rodríguez-Pose & Gill, 2004). Local contextual factors are vitally important to the outcomes of devolved governance, making it important to uncover the ideas and values held by local decision-makers, the institutions empowered to participate in and enact these decisions, and the networks of interests that these decisions are taken within. In addition, the orientation of the national government may also be a crucial factor, and this can stand in opposition to the interests of local actors (Enright, 2016).

The issue of multilevel governance including devolution is one of the largely neglected issues in the governance literature, meaning that gaps remain in our knowledge of the practice of devolution (da Cruz et al., 2018, p. 2). The perennial question of which powers are best devolved, and which are better reserved at the national level, also remains a matter of debate. Central governments have greater economies of scale in procurement, and, as such, it has been argued that certain public services, such as healthcare and safety, may be best delivered on the national level (Rodríguez-Pose & Ezcurra, 2010). It has also been claimed that large-scale projects, particularly those relating to transport, energy, and digital infrastructure that transcend local or regional boundaries, are also likely better delivered by central government (Floerkemeier et al., 2021). Again, this focus on technical outcomes highlights the extent to which normative issues tend to be secondary concerns in the literature on devolution. This is curious, given that devolution has also been politically deployed as a means of granting autonomy (or at least the impression of autonomy) to sub-national regions that seek independence without substantially challenging the prevailing political-economic character of the state (Blondel & Evrard, 2019).

The notion of spatial justice has only very rarely been directly applied to research regarding devolution, although some studies of regional disparities have made use of the concept. Varró (2012) reflected on uneven regional development and the potential for spatial justice within the confines of post-1997 devolution in England, reiterating the risk that regional competition within a devolved framework could exacerbate pre-existing inequalities. A study of regions in Sweden, Norway, and Finland applied Soja's (2010) principles on spatial justice to education systems and outcomes between countries across urban and rural areas (Beach et al., 2018). Where this current article differs from earlier applications of the concept is in its comparative approach to understanding the impacts of devolution in two international contexts, focusing on how stakeholders articulate their capacity to achieve outcomes that contribute to greater spatial justice in the case studies introduced below. We also seek to integrate the concepts of spatial justice and devolution to argue for strategies that can achieve just devolution, whereby local institutions have sufficient authority and resources to make decisions that aim to tackle social injustice in their areas. This in turn necessitates changes to the composition of currently dominant constellations of ideas, institutions, and interests that support the neoliberal, pro-growth outcomes we observed in Birmingham and Lyon.

3. Case Studies

Birmingham is a large city situated within a polycentric urban area, the English West Midlands. The city was once a powerhouse of the British economy and the heart of the wealthiest region outside London up until the early 1970s (O'Farrell, 2020a). However, in the late 20th century, the city's economy and population entered a sustained period of decline, with the collapse of its industrial base transforming the West Midlands into one of the poorest regions in the UK. Today, the city is home to one of the most diverse populations in Europe alongside deep-rooted socioeconomic problems, including significantly lower employment rates than the national average (O'Farrell, 2020b). Forty-three per cent of the city's wards belong to the 10% most deprived in England (Birmingham City Council, 2019b). The cityscape has become notorious in the UK for its modernist design that had until recently featured many examples of brutalist architecture. Since the early 2010s, much of the city core has been redeveloped, with large-scale investment predicated on the High Speed Two railway that will connect Birmingham with central London in under one hour. In our interviews, many participants expressed a belief that this new railway could bring economic growth to the city as an overspill of London, for example through commuters buying properties in Birmingham and companies based in the capital opening regional offices to take advantage of lower costs in the city. This was used by several to justify the need for large-scale regeneration of the urban core; however, we noted that no participant was able to identify mechanisms to manage the risk that this strategy could eventually make housing unaffordable for local people. As such, we found that the fixation with creating a city centre enclave of prosperity, identified in Birmingham more than a decade prior, remains alive and well (Barber & Hall, 2008).

Birmingham is governed within a political framework characterised by intense centralisation at the national level. Reforms to local government in the 1970s produced a super-centralised model of decision-making which, when coupled with neoliberal economic policies from the Thatcher era onwards, have successively eroded the role of local authorities in the UK (Hambleton, 2016). Austerity measures since 2010 have cut the city council's budget in half over the course of a decade (Birmingham City Council, 2019a). A new regional government structure covering Birmingham is the West

Midlands Combined Authority, formed in 2016 to coordinate the actions of seven municipalities in the conurbation. The authority has competencies over transport, economic development, and regeneration, but does not have powers over urban planning or housing development. Moreover, as Hambleton (2016) details, the budgets of these new combined authorities are many orders of magnitude smaller than the sum of money that has been cut from their constituent councils since 2010. The bodies are also heavily monitored by central government and thus lack meaningful autonomy. In a clear demonstration of the neoliberal values of the institution, the role of the West Midlands Mayor is principally to promote the area and attract investment. This is illustrated by a £10 billion prospectus of development opportunities prepared by the combined authority for international investors that lists housing, regeneration, commercial, and infrastructure projects open to the private sector (West Midlands Combined Authority, 2019). An emerging development impacting Birmingham since we carried out our interviews is the government's "levelling up" agenda, an ambiguously defined ambition to overcome regional disparities in the UK that is characterised by relatively small funding commitments, competitive bidding processes, and evidence that funding allocations are being made according to electoral calculations rather than local needs (Newman, 2021).

Lyon is France's second city and a historically important industrial centre. Table 1 shows a comparison of the two cities across several key indicators. The municipality of Lyon is smaller than Birmingham, being home to around half a million people. There are some 1.4 million in the agglomeration and 2.1 million in the wider urban area. Eighteen per cent of the city's population was born abroad, a plurality of whom come from the Maghreb (International Centre for Migration Policy Development, 2017). Modern Lyon contains both highly deprived districts and major flagship development projects funded by international investors. There is noteworthy spatial injustice in the disparities between districts of the city (Galimberti et al., 2017). Much like Birmingham, we found that participants in our interviews understood a common interest to promote economic growth and enhance the perceived competitiveness and attractiveness of the city to investors. However, in contrast to the super-centralisation experienced by Birmingham, Lyon is regarded as a forerunner of metropolitan governance in France, having over the past four decades developed far-reaching governance structures for the city and municipalities in the agglomeration (Institut National de la Statistique et des Études Économiques, 2011). Lyon has a long tradition of cooperation between government and civil society actors, particularly with regard to the provision of housing for low-income families (Ball, 2012). At the same time, citizen engagement in decision-making remains underdeveloped, whereas there is a growing interest in Birmingham in participation and co-production (Zwicky, 2021).

Local government in France is organised from communes to metropolitan governments covering multiple municipalities, above which are departments and larger regions, up to the national government on the highest level (Marcou, 2014). The metropolitan government for the city of Lyon was established in 1966. There are now 59 communes covered by this governance structure and competencies have been successively shifted from the municipal to metropolitan level (Grand Lyon, 2017). Urban planning powers were transferred in 1983, followed by many housing-related competencies in 1995 (Grand Lyon, 2015, p. 7). In 2006, the metropolitan government gained powers to manage capital investment, including the financing of social housing construction. The metropolitan government is therefore the main organising authority in the realm of housing for the city and its suburbs. Further powers around economic development were granted in 2008 (Maurice, 2014, p. 229). In 2015, the metropolitan government was renamed from Grand Lyon to Métropole de Lyon and, from a comparative perspective, a unique body of special status was established, combining the competencies of the

Table 1. Overview of the two case studies.

	Birmingham	Lyon
Population (local authority area)	1,137,100 (O'Farrell, 2020b)	513,300 (Zwicky, 2021)
Population (metropolitan area)	2,897,000 (O'Farrell, 2020b)	2,323,000 (Institut National de la Statistique et des Études Économiques, 2022)
Population born abroad	22.2% (Birmingham City Council, 2013)	17.6% (International Centre for Migration Policy Development, 2017)
Regional government unit	West Midlands Combined Authority (7 local authorities)	Métropole de Lyon (59 communes)
Local autonomy score (Ladner et al., 2016)	17.38/37 (47%)	25.65/37 (69%)
Social housing stock (as share of total)	24.2% in 2011, stock decreasing (O'Farrell, 2020a)	26% in 2018, stock increasing (Zwicky, 2021)

former Grand Lyon metropolitan government and the Rhône department on a hierarchically higher level. At the same time, competencies in social policy and urban planning were transferred from departmental to metropolitan level. The evolution of governance structures covering the city and its suburbs demonstrates how devolution is an evolving process, with greater powers successively transferred to Lyon over the course of several decades.

4. Methodology

The analysis below considers material from a series of interviews conducted with local leaders, policymakers, and representatives of organisations relevant to urban planning policy (such as housing associations and property developers) in 2019. These interviews were informed by an earlier phase of gathering quantitative data, including ward-level demographic data (ethnicity, income, and education level) to map trends of population change across the cities over several decades, as well as figures on housing stock and type (social housing, private rented, and owner-occupied).

We conducted 21 qualitative semi-structured, hour-long interviews in both cities using an interview guideline, the English version of which is included in the Supplementary File of this article. The interviews focused on key housing and urban planning policies over the past two decades in each city, as well as relevant actors, policy objectives, and attitudes towards processes such as segregation and gentrification. Given the academic nature of literature on spatial justice, we did not directly introduce this term in the interviews. Instead, we spoke in everyday language; for example, we asked participants whether they perceived any advantages or disadvantages for people from ethnic minorities when living in the same neighbourhoods and whether this might create challenges or opportunities for the city. We showed participants maps created for the project that depicted the spatial distribution of population groups across the city and highlighted where there was an overlap, with some districts having large populations of ethnic minority groups and high unemployment rates, for example. This enabled us to have conversations about spatial injustice in ways that were accessible, in turn allowing us to delve deeper with questions about what the city might do to address problems in these areas—and indeed, if the city should do anything, or whether such issues should be considered "problems" at all. Likewise, when talking about devolution we asked in broad terms how participants perceived the relationship between the city and national government, what decisions they were able to make in their own jobs, and whether they felt that the city needed to be able to take its own decisions on different topics. We thus sought to frame the interviews as conversations between individuals who are interested in the city and the issues it faces.

According to the concept of governance, urban planning processes are shaped by a variety of different actors from the public, private, and community sectors (Pierre, 2014). To take this diversity into account, actors from diverse fields were interviewed. Participants in Lyon included managers of civil society organisations, policymakers in government, an elected official, social housing providers, and an academic. In Birmingham, we interviewed city planners, current and former council officers, a property developer, a housing association officer, and an elected city councillor. The sample size is on the low end of the ideal for qualitative work (Baker & Edwards, 2012, p. 49), in part due to the comparative nature of the project. The project's data collection was carried out in three languages in these cities, which in turn had an impact on the resource allocation for the research. Nevertheless, we found that the samples in each city were sufficient to consistently return key themes in relation to the state of devolution and spatial justice in the cities, thoughts about structural forces such as the market and central government, and insight into how participants understood the interaction of ideas, interests, and institutions in their city.

5. Analysis

Our analysis here focuses on how participants related to the process of devolution, the extent to which participants felt constrained by external forces, and what tools they felt they had to develop policies for the city. Overall, we found that participants in Lyon were more empowered and felt less constrained by external forces. On a superficial level, there was a greater commitment to achieving spatial justice across the city. In contrast, participants in Birmingham were frustrated with the lack of autonomy and resources at their disposal. They also had a much weaker focus on inclusive development, often struggling to describe how, or if, issues such as inequality or ghettoisation could be tackled. Those we interviewed in Birmingham frequently lapsed into demoralised narratives regarding their capacity to affect change. However, we did not find that these differences in the rhetoric around devolution correlate with significantly greater spatial justice outcomes. For instance, while there has been a small increase in social housing stock in Lyon since the millennium and a commensurate decrease in Birmingham, both cities continue to prioritise flagship regeneration projects, follow strategies of courting international investors, and hold major events (Zwicky, 2021). However, given that we did not conduct interviews with those working on the national level, it is not possible to definitively conclude that there are internalised senses of inferiority and superiority among the Birmingham and Lyon stakeholders respectively; for example, the contrasting tones of the interviews may be a reflection of local cultural or political factors.

The mood of our interviews in Birmingham is best summarised by one senior council officer working in the urban planning department. When asked about steps that might be taken to maintain housing affordability

in the city, this participant responded: "You can't solve that locally because the system is the system, isn't it?" Another participant—this time a former senior officer in Birmingham City Council—described the relationship between the local authority and central government: "The government tells local authorities what to do, and says, if you don't do it, we'll take away the money." This sentiment was repeated by a senior officer working in the council, who described how "when we get funding from the government, it's centralised. We've got very little power [to decide] what we can do." Participants were highly sceptical about the potential of the new metropolitan government unit, the West Midlands Combined Authority, to affect meaningful change with regard to inequality and deprivation, noting it lacked formal powers or a budget with sufficient resources to tackle these challenges. In comments that echo Hambleton's (2016) research on the "super-centralisation" of the English state, the devolution agenda was instead viewed by one participant as a mechanism for the central government to intensify its control:

> You localise services, which sounds good—giving people more local control—but by doing so, you put responsibility at a level where it can no longer compete seriously with Whitehall, it can't take them on. You've reduced the opposition to your centralising power to small, isolated, powerless units, and you win of course. That's a great strategy.

In short, the results of our interviews accorded with the criticisms of devolution presented in the literature review, with devolution strategies ultimately resulting in more intense monitoring by central government, reduced budgets, and weaker local autonomy (Blondel & Evrard, 2019; Cox, 2019). We perceived a sense of paranoia or a feeling of being under siege in our interviews in Birmingham. One participant described the tools available to the local authority to tackle the shortage of affordable housing as "trivial," commenting that housing unaffordability is a "deliberate, top-down action by government." Another council officer working in a highly deprived ward of the city voiced how they felt that the government is hostile to the council, commenting: "I don't think it's a secret that the current administration has a perspective that local councils are inefficient, they're expensive, everything's better done by the market and private sector." This idea of central government seeking to undermine local government was mentioned unprompted in multiple interviews. Given the intense centralisation of the English state and the unbalanced nature of the UK's politics and economics, we do not think this is simply a matter of Birmingham's Labour-run council coming into conflict with the Conservative government; instead, we believe it reflects structural issues with how power and resources are distributed, which is to the detriment of cities outside the capital. Indeed, one participant suggested that their perception of the challenges facing the country is that the central government only thinks about what is good for London's growth and simply does not care about the other regions. Another participant with a leadership role in the city council spoke of the futility of trying to engage with central government on issues such as inclusive growth:

> Being diplomatic about it, given that we're being recorded, I think we've probably given up on national government having the foresight and strategic coherence to do what you've just described. And certainly, we've given up on them investing in it. It wouldn't work if we waited, is probably a more delicate way of putting it.

We suspect that what this participant euphemistically described as a lack of foresight and strategic coherence may simply be a lack of interest in achieving inclusive economic growth, given that discussions around this topic would require critically reflecting on the British state's dominant ideology of free-market capitalism, deregulation, and competition.

Alongside feeling constrained by central government, participants in Birmingham felt that market forces were major determinants of the future of the city. Multiple participants talked about the importance of the city's growth agenda. When asked an open-ended question about the current situation in Birmingham, an urban planner replied that "it's all about growth, isn't it?" Likewise, a senior leader in the council spoke excitedly of Birmingham being a viable commuting distance from London upon the completion of High Speed Two. When asked whether this might gentrify the urban core around the high-speed rail station, this participant replied that "people often say gentrification in a bad way…but subtle elements of gentrification are good," adding that "if you own your own property, or own property that you rent out, everyone wants to invest and have capital growth in their property." Another senior leader compared Birmingham's future to "like being in Zone 6 on the London Underground." When asked whether this might price local people out of the property market, this participant responded: "Is that necessarily a bad thing if that's bringing in…[pause] there will still be large suburban parts of the city for Birmingham residents." Trickle-down economics was thus deeply embedded in the narratives of many of those we interviewed in Birmingham, with very little consideration of the mechanisms by which inclusive growth or spatial justice could be achieved, or how the envisioned benefits of this growth would reach marginalised people.

A more critical view came from a project manager working in the city council, who commented: "We seem to be losing the battle with private developers, who dictate the conditions they're building on." This participant added that "there is a strong lobby of businesses that seem to be holding power…they shape the city. They are the ones that are influential and can make decisions

happen." This highlights the role of businesses and property developers in a wider constellation of institutions perpetuating neoliberal, growth-oriented outcomes in the city. Combined with data showing increasing segregation and growing inequality in the city (Zwicky, 2021) this leads us to characterise the current state of devolution in Birmingham as unjust. Participants in Birmingham seriously doubted their ability to affect change and took a dim view of the autonomy and resources at their disposal, instead seeing central government and market forces as deciding the fate of the city. There appeared to be no mechanisms for achieving spatial justice. Indeed, when asked questions about how the city might intervene to maintain housing affordability, several participants appeared to struggle with the idea, demonstrating the strength of neoliberal ideas among key stakeholders relating to Birmingham's development.

In contrast to Birmingham, participants in Lyon appeared comfortable with what they described as an advanced state of devolution in the city and related much more positively to the devolution process. Participants in Lyon made fewer references to central government as a constraining force and instead perceived that the metropolitan government covering the city-region could solve problems for itself. Compare, for instance, the rather demotivated comments around housing unaffordability in Birmingham to the optimistic summary of Lyon's housing strategy by an urban planning officer: "Less social housing where there's too much, more social housing where there's not enough. That's it!" On a similar note, rather than feeling pressure from the central government, an elected politician in Lyon summarised that "the state is gradually disengaging," leaving the metropolitan government to make decisions for itself. These narratives are consistent with the data from the local autonomy index, where France far outperforms the UK (Ladner et al., 2016). And yet, somewhat unexpectedly considering this rhetoric, our data found that Lyon does not demonstrate dramatically different outcomes to Birmingham when it comes to spatial segregation and injustice. Indeed, we identified the same fixation with investment and market forces in Lyon that we found in Birmingham. Another common theme we uncovered was that participants in both cities tended not to think about citizens as active participants in making decisions about the future, although this was more pronounced in Lyon than in Birmingham, where there appeared to be greater interest in civic engagement.

The leader of a major social housing organisation in Lyon talked about a general mission to improve the attractiveness of Lyon to investors, increase economic growth, and "make sure that Lyon remains known on a European scale." A senior leader in the metropolitan government told us that "Lyon must be in the top 15 European cities in terms of attractiveness, competitiveness, and economic growth." While this superficially seems to be a more positive attitude than those encountered in Birmingham, this narrative highlights an underlying belief that international investors are vital to the future of the city, which is again a repetition of the tropes of neoliberal trickle-down economics encountered in the British case study. However, there were also critical attitudes towards market forces expressed in Lyon. An elected representative spoke about the intensifying gentrification that is transforming Lyon and having a ripple effect on housing affordability throughout the wider urban area. Moreover, participants in Lyon were more candid in their criticisms than the Birmingham participants who often used euphemisms or chose their words very carefully. For instance, the strategic direction of politics in Lyon was repeatedly described as incoherent. In a context of major development projects happening across the city, a senior manager in a civil society organisation rather bleakly forecast the future of housing in Lyon, saying: "We know that people will be evicted." The former head of a homelessness organisation had critical words about current urban leaders in Lyon, commenting that an influential politician in the city is "fascinated by money….He loves it, being in the middle of all those who have power in the city, predominantly real estate developers.''

We can therefore conclude that, despite different degrees of autonomy, relationships towards the process of devolution, and contrasting views on the constraining power of national government, the urban leaders and housing and development policy stakeholders we interviewed in Birmingham and Lyon ultimately converge with regard to the role of investment and market actors, as well as when it comes to a shared difficulty in defining mechanisms to make economic growth more inclusive or strategies to achieve spatial justice across the city. While those in Lyon had greater tools and resources at their disposal, they appear to be using this capacity to enact a market-led vision of the same future that is being implemented in Birmingham. Both cities seek to attract investment, enhance their economic standing relative to "competitor" cities, and encourage urban regeneration. We should note, however, that participants in Lyon were more engaged around issues such as housing affordability, ghettoisation, and gentrification than their counterparts in Birmingham. They were also able to articulate potential strategies to address these challenges, compared to the urban planner in Birmingham who simply responded: "That's market dynamics." For example, alongside seeking to attract international investment, Lyon has invested in social housing, seeing a small increase to 26% of total housing stock by 2018 (Direction Régionale de l'Environnement, de l'Aménagement et du Logement Auvergne-Rhône-Alpes, 2019). By contrast, the 24% share of social housing stock in Birmingham continues to slowly decrease (O'Farrell, 2020a). We thus observe that devolution has given tools and resources that enable local policymakers in Lyon to partially soften the effect of gentrification upon housing affordability, but that devolution as it is currently constructed has not fundamentally disrupted the pro-growth orientation of key decision-makers in the city.

6. Conclusions

This article has considered how policymakers in two large second cities relate to devolution and the implications of this devolution for spatial justice. Birmingham and Lyon are differentiated by a more limited extent of devolution in the former than in the latter. Nevertheless, the perceived role of the market in shaping the future of the city was consistent in both, with addressing inequalities being a lower priority than attracting international investment. Within the confines of existing devolution settlements, the ability to construct new social housing was the key tool that participants in Lyon saw as enabling a more inclusive form of development that would not totally displace poorer residents from the city as it gentrifies. In contrast, many of those in Birmingham were similarly committed to flagship projects and regeneration of the urban core, but there was far less concern articulated about the risk of pricing local people out of the city, or definition of strategies to mitigate the impacts of gentrification upon poorer and more marginalised communities.

To close, while we are positive about the potential of devolution to create more just cities, we note the dominance of neoliberal ideas in both case studies as a complicating factor in achieving this end. Our interviews provide substance to the claims made in the literature that devolution is deployed as a tool of neoliberal governance. We found that devolution has not reduced the fixation on growth in either city, but the Lyon case suggests that an important side-effect of devolution is that it can create more empowered local decision-makers who are more optimistic about their capacity to create change. However, we suggest that devolution needs to move beyond its current conceptualisation as simply being a tool for boosting growth or achieving more efficient resource allocation. Devolution strategies need to be balanced with a normative dimension that can come through consideration of spatial justice, and how investments can be made to serve local populations rather than the assumed needs of international investors. The process of devolution also needs to be matched with efforts to build local capacity to make use of devolved autonomy and resources to overcome spatial injustice. As a next step, further research should consider how public participation in decision-making can be integrated into devolution; our interviews in both cities saw citizens generally framed as a group to be acted upon in urban development, rather than a stakeholder actively involved in determining the contours of this process. This could in turn create a cultural and ideological change in the local constellations of institutions tasked with making use of devolved powers. We therefore encourage steps towards achieving a just devolution, as a process that can benefit local people and dislodge the dominant ideas about urban development that have proven themselves unable to deliver more equal cities for all citizens.

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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).

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Article

Different Forms of Welfare Provision for Diverse Suburban Fabrics: Three Examples From Italy

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Abstract
Over the last 20 years, suburbanization has gradually turned into a key topic of analysis, whereas welfare policies have faced a significant public reconfiguration towards the local scale of provision and the development of local welfare systems. Combined in such a way, these two statements tell us little, and they appear to be separate and without any relation. This article aims at building the analytical and research interplays between these two topics. In so doing, the article addresses the governance and planning of local welfare services in suburbs, entwined with the post-suburban theoretical frame. By identifying the issues at stake—that is, the governance of welfare and services—the analysis investigates the uneven socio-spatial polarizations that are currently emerging in metropolitan areas. The research bridges a research gap between the unevenness of the suburban expansion and the changing provision of welfare services. The article discusses these insights with three Italian cases from the edges of the three main metropolitan areas: Milan, Rome, and Naples. The empirical discussion, which relies on the outcomes of qualitative fieldwork activities, discusses and compares the differentiation of welfare provision and the relevant diverse "suburban societies" amongst the three contexts. Through this focus, the article points out that a heterogeneous and unequal spatial distribution of basic services and social infrastructures is to be found amongst the constellation of towns located on the outskirts of an urban core.

Keywords
extended urbanization; governance; Italy; post-suburbia; suburbs; welfare

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1. Introduction

After entering a "different welfare" (de Leonardis, 1998) shaped by considerable changes in service provision, several studies have addressed the new European paradigm of local welfare (Andreotti et al., 2012), which, since the early 1980s, has steadily involved issues related to the urban regeneration and revitalization of shrinking and marginalized neighbourhoods. This focus has unveiled a territorial dimension of social policies to contrast social inequalities and economic unbalances (Bifulco et al., 2008; Kazepov & Barberis, 2017). Against this backdrop, many territorial transformations have arisen in Europe by primarily focusing on cities (Crouch & Le Galès, 2012; Kazepov, 2005). Nonetheless, the contemporary "suburban century" (Clapson, 2003; Keil, 2018) calls for further understanding of how the provision of welfare services—broadly intended—is proceeding in settlements located on the outskirts of large cities. At a time of planetary urbanization (Brenner, 2014) and sub-urbanization (Keil, 2017a), where metropolitan governance comes as a result of a complex network of actors, investments, land use planning, and infrastructural developments (Cox, 2010; Dente, 1990; Lefèvre, 1998), the configuration of local welfare systems entails continuous updates from both the research and policy fields. However, the urban edges—largely identified as suburbs—have been partially left out of this debate, and a knowledge gap about how welfare provision is changing in the diverse suburbs of European countries has

to be bridged. In this view, the article examines the complexities related to the governance of local welfare at the urban edges by focusing primarily on social services, although local welfare also involves other policy fields (healthcare, education, and public utilities, such as energy and water, facilities, and public transport). Over the past 20 years, the research attention that has been devoted to suburbanisms—that is, suburban ways of living (Keil, 2017b; Walks, 2013)—and to suburbanization—that is, the combination of non-centric populations and economic growth with urban and spatial expansion (Ekers et al., 2012)—has resulted in the threefold subdivision of state-led, private-led, or self-led suburbanization. Although the article will not delve deeply into this subdivision, it aims at connecting the territorial dimension of welfare policies with studies in suburban governance. In so doing, the article aims at responding to the following research questions which benefit from three Italian cases: How is the governance of welfare services characterized in the suburbs located at the edges of large cities? What are the main governance challenges faced by the decision-makers? Considering the three largest Italian metropolitan areas, what are the main differences that run between these three contexts? The article discusses a number of aspects related to welfare provision in three towns located on the outskirts of the largest Italian cities: Rome, Milan, and Naples. In particular, the article relies on the outcomes of fieldwork activities conducted between 2018 and 2019. A qualitative research method has been adopted, with extensive use of semi-structured interviews with decision-makers and personnel of the municipal administrations. Yet, due to space limitations, no extended reference to this study will be provided. Rather, to unfold the complexities related to welfare provision, the article is organized as follows: First, it presents the theoretical framework by discussing the territorial dimension of European welfare on the one hand and, on the other hand, the debate about governance of global suburbanisms. Second, a note on research methods is provided. Third, to discuss forms of governance and emerging issues related to welfare and social services provision in the urban in-between, the article briefly discusses the governance of social services in the three target areas (see Sieverts, 2003). Fourth, a concluding discussion comments on the three cases as significant examples of the diversities that run between the suburban constellations (Keil, 2013), and which can be framed within the theoretical debate on post-suburban Italy (De Vidovich, 2020). Through a reflection on welfare, this article suggests that decision-makers still perceive Italian suburban areas as secondary places (De Vidovich, 2021b); as such, they are splintered into fragmented forms of provision that affect the "habitus," intended as the body of subjective cultural settings and schemes of perception, conception, and actions common to a specific group (Bourdieu, 1977) of numerous inhabitants.

2. The Interplay Between Welfare and Suburban Governance

2.1. The Territorial Dimension of Welfare: A Brief Discussion

The development of social policies is intended to address new social risks, including contrasting (or "combatting") social exclusion (Oosterlynck et al., 2019; Ranci et al., 2014), tackling citizens' activation (van Berkel & Borghi, 2008), and triggering social cohesion (Cassiers & Kesteloot, 2012; Cook & Swyngedouw, 2012; Novy et al., 2012). These are but a few of the key themes raised by contemporary welfare changes in Europe. Amongst these studies, increasing attention has been devoted to territory as a pivotal aspect of welfare recasting, and a new "territorial dimension" of European social policies has been debated (Faludi, 2013; Kazepov & Barberis, 2017). This territorial reorganization is a key component of governance (Gualini, 2006), as it calls for a new way to look at the reconstruction of the state's scalar structures (Bifulco, 2016). Inasmuch as the welfare state no longer has autonomy in welfare planning (Esping-Andersen, 2005), it also has a limited capacity to accommodate territorial minorities within existing political and institutional structures (Moreno & McEwen, 2005). Within the affirmation of local welfare that has arisen since the early 1980s, sub-state governments and local authorities have enacted area-based and local experimentations to foster local development, limiting the intervention of central bureaucracies, and leaning on new urban governances (Le Galès, 2002). The spatial dimension of welfare lies at the intersection between different disciplines and diverse administrative and regulative sectors. In Italy, many studies in the sociological field have identified territory as leverage for welfare policies and interventions on the one hand, and as a medium for the relationship between citizenship and governance on the other (Bifulco, 2016; Bifulco & de Leonardis, 2003).

Since the 1990s, public policies in Europe have experienced a process of "territorialization" concerning two intertwined phenomena: the territorial reorganization of public powers and the tendency to take the territory as the reference point for policies and interventions (Bifulco, 2016). The concept of territorialization refers to an integrated approach among diverse policy fields of welfare (social policies, housing, health) to address manifold issues (in the social, physical, or economic spheres), with a focus on specific target areas, and it attributes an active role to space (Governa & Salone, 2004), perceiving places and spaces as resources, objectives, trajectories, and settings of public action (Bifulco et al., 2008). In Italy, some national programmes fostered territorialization, such as the Local Area Plans (*Piani di Zona*; Previtali & Salvati, 2021) and Neighbourhood Contracts (Bifulco & Centemeri, 2008). However, territorialization is "an intricate phenomenon, and there is a need to gain a better understanding of the effects arising from

the combination of problems and opportunities" (Bifulco, 2016, p. 642). As argued by Bricocoli (2018), urban planning is focused predominantly on the physical dimension of spaces and the "material" aspects of welfare. Conversely, the territorial implications of welfare have found limited attention amongst social researchers and decision-makers. This attention has focused primarily on the quantification, localization, and enumeration of beneficiaries, services, and functions, with few investigations addressing governance arrangements. Such ambiguity increases the risk of intensifying territorial inequalities through localized and territorialized policies (Hadjimichalis & Hudson, 2007). After many years of virtuous local welfare experimentation, "the local" seems steered by a misleading rhetoric (Bricocoli & Cucca, 2016), resulting in episodic forms of territorialization entrapped in the local scale, with limited multi-scalar implications (de Leonardis, 2008).

2.2. Governance of Global Suburbanisms (or Territorialization at Stake)

On such a basis, one could argue that the territorial configuration of welfare provision is at stake, as it seems predominantly targeted towards a local scale of action identified with the city-scale. In this article, territorialization represents a keyword to observe how local welfare has proceeded outside of the urban cores. In this regard, a viable perspective to question the territorial implications of welfare may be fostered by repositioning peripheral and marginal conditions "from the outside in" (Keil, 2017b). Global suburbanisms—that is, suburban ways of living (Keil, 2017a; Walks, 2013)—play a remarkable role in the study of contemporary urban society with a focus on peripheralization and marginalization, as they unfold uneven and diverse ways of living in suburbs. The notion of suburbanisms grasps the diversity of suburban lifestyles and social interactions across suburbs (Drummond & Labbé, 2013), involving issues of redistribution, inclusiveness, sustainability, and segregation amongst unequal geographies (Ekers et al., 2012). Although the second decade of the 2000s witnessed a proliferation of suburban studies (De Vidovich, 2019; Hamel & Keil, 2016; Hanlon & Vicino, 2018; Keil, 2017b), the analytical relationship between welfare and suburbanisms remains unexplored, particularly in Italy, insofar as research efforts focused on welfare provision in the smaller, suburban municipalities of metropolitan areas are rarely undertaken. Suburbanisms may entwine studies of welfare by investigating the mechanisms of territorial and governmental integration at a metropolitan, city region, or mega-city region scale (Hamel, 2013), and also by facing the misalignment between political institutions and the rapid growth of both suburban expansion and decentralization development that continuously transformed urban regions (Phelps & Wood, 2011). In this respect, suburban governance refers to the differentiation between the diverse forms of suburbanization and suburbanisms from country to country, involving a variety of agents, historical precedents, and institutional settings. On such a basis, suburbanization is the process behind suburban governance, and—as indicated in the introduction—it occurs with state-led, self-led, or private-led modalities (Ekers et al., 2012). According to this framework, studies in global suburbanisms meet welfare studies to question urban-oriented local welfare governance. Although close relationships and interdependencies run between city and suburbs, this theoretical framework perceives suburbs as entities of suburbanization, rather than pieces of an urban region that fuel the urban core. In so doing, challenges in local welfare provision and territorial organization of social services are investigated with the goal of stressing suburbs as territories that are worth further analyses in the field of welfare governance and in overall inquiries on metropolitan space.

3. Notes on Methods

This article relies on the outcomes of qualitative-led fieldwork activities carried out between June 2018 and May 2019 in three different suburban areas: the town of Fiano Romano, located on the northern urban edges of Rome; the town of Pioltello, in the eastern hinterlands of Milan; and the town of Villaricca, on the northern urban outskirts of Naples. On the whole, 36 interviews were conducted amongst the three target areas, subdivided as follows: Thirteen interviews were dedicated to obtaining knowledge of the local actors in the Roman context (with a sub-division into nine interviews with local administrators, and six interviews with inhabitants organized into local committees), 11 interviews were dedicated to the case of Pioltello (with four interviews with local administrators, including the mayor, and seven interviews with experts involved in the town's ongoing regeneration programmes), and 12 interviews focused on Villaricca, made possible by meeting with eight current and former local administrators in Villaricca and a neighbouring town (Marano di Napoli, due to difficulty contacting the current administrators of Villaricca), and four local experts (identified as a journalist, two professors, and a local inhabitant working in the transit network of the area). As it can be noticed, the collection of the interviews was not systematic and well-framed according to fixed criteria. Many differences regarding the typology of the people interviewed run between the three contexts. Furthermore, these interviews are not reportedly extensively in the following sections. The decision to focus on a threefold observation to compare three meaningful national contexts, rather than to deeply investigate a single case study, precludes a detailed use of the qualitative findings. Nevertheless, the choice of a qualitative-deductive approach fits with the research aims and questions as elucidated in the introduction. Because suburbs are transitional in time and space (McManus & Ethington, 2007), a qualitative case

study enables the researcher to read through this transition by observing past and present changes and by identifying the most important policy issues. In this respect, the article employs a "dialectical reading" of social welfare in a suburban area (see Peck, 2015) through a threefold focus that stretches between theoretical implications from the research field of suburban studies to the policy field of local welfare.

4. Three Different Forms of Welfare Provision

4.1. About the Target Areas

On this methodological basis, the article considers three examples that well describe the constellations of towns located at the edges of large Italian cities, amongst the networks of mid-sized cities that shape the "diffused urbanization" (Indovina, 2006) and other forms of "in-betweenness'' (Sieverts, 2003) that characterize numerous Italian settlements. A key principle lies behind the choice of these three target areas: They belong to the largest metropolitan regions of Italy—Rome, Milan, and Naples—and processes of suburbanization have ensued in the three areas at different times (Figure 1). Based on existing literature, three towns were selected within the three metropolitan areas: Pioltello (Milan), Villaricca (Naples), and Fiano Romano (Rome).

In Pioltello, suburbanization occurred during the peak of the industrialization phase (especially since the 1960s) that represented a pivotal period in the expansion of the metropolitan area of Milan, welcoming many new households from Southern Italy in a migration process that contributed to the demographic increase of many of the hinterland's municipalities. In Villaricca, the history is quite similar, as expansion at the northern peripheries of Naples was fuelled by the conversion of farmland into industrial and productive sites, together with a massive, and even unruly, residential growth. Furthermore, the 1980 Irpinia earthquake led to rapid building expansion across the Neapolitan peripheries. Conversely, suburbanization in Rome is more recent and resulted from extended urbanization (Cellamare, 2017) driven by the developments of single- or double-family dwellings in a context of scattered small-to-medium local enterprises, unlike the landscape of the industrialized hinterlands of Milan and Naples. Although this focus does not entail welfare challenges but is instead grounded in the field of urban planning, it is important to account for a diversity that is reproduced in trajectories of service provision.

In this respect, the article addresses the ways in which welfare services are organized in three areas that present the common feature of being located on the outskirts of a large city, but which have expanded at different times and with different developmental trajectories. This topic entails many aspects of the contemporary governance of public services: decentralization and localization of services to develop sustainable local welfare systems (see Andreotti et al., 2012), inter-municipal organization of services towards a more pluralistic decision-making, rescaling, and territorial reorganization of power (Brenner, 2004; Kazepov, 2010) and the territorialization of social policies. Following the sequence of suburbanization phases, the next sub-sections illustrate the ways in which welfare services are governed and ensured to the inhabitants of the three target areas, and the "local insights," which is to say the most significant contextual tensions and emerging issues enhanced by the interviewees. Before this, a general scheme of the multilevel welfare services' scheme of provision is provided (Figure 2). In Italy, the legislative framework behind the governance of social services is sustained by National Law 328/2000, which entails a regional act of enforcement. On such a basis, each regional entity develops sub-regional units, which usually unite a number of municipalities for demographic reasons. This multilevel framework can then be integrated eventually by municipal efforts and investments. Such a scheme sustains the welfare issues that are discussed and explored in the following sections.

4.2. Local Welfare in the Hinterlands of Milan: The Example of Pioltello

4.2.1. Organization of Welfare Services

In the case of the Lombardy region (in which are located Pioltello and the metropolitan area of Milan), two specific Acts of Enforcement (Regional Law 3/2008, which regulates the network of interventions and services to citizens in social-health fields, and the subsequent Regional Law 23/2015, which updated the integrated social-health regional system) transpose the national legislation, whereas Distretto Sociale Est Milano 3 ("District 3") is the governmental actor for social services involving

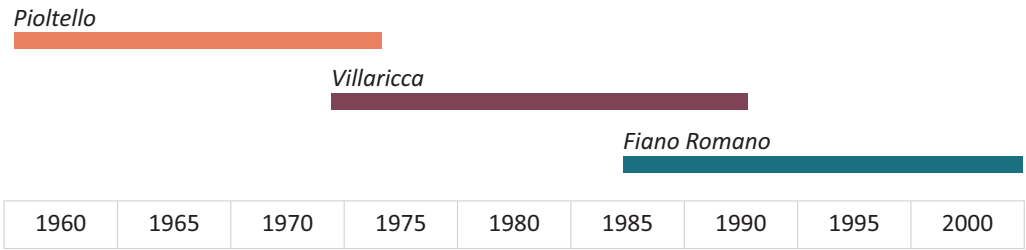

Figure 1. Sequence of suburbanization phases in the three target areas.

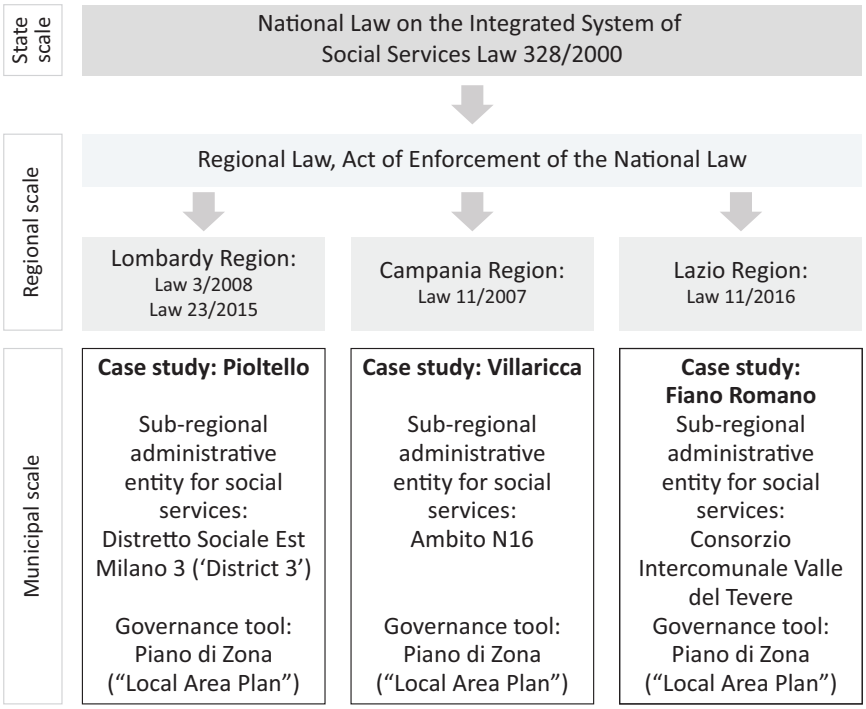

Figure 2. The scheme of welfare governance in Italy, with relevant details referring to the three case studies.

the municipalities of Segrate, Rodano, Vimodrone, and Pioltello. Pioltello hosts the Plan Office (Ufficio di Piano), the technical-operational structure for the implementation of the triennial Local Area Plan (Piano di Zona), aimed at achieving three policy goals: improving the coordination of services amongst the municipal-based "social secretariats" of each municipality, reinforcing the collaborations between District 3 and the relevant municipalities, and addressing the four strategic pillars (non-self-sufficiency; mental health; support to households, childhood and youth; social inclusion and combatting poverty). These areas of intervention are integrated by the "zonal" health planning developed by the regional health authority. As illustrated by the interview with the head of the social policy office, social services in Pioltello are organized using an omni-comprehensive rationale, through a territorialization that especially addresses multiculturality with two main interventions: a helpdesk service for foreigners (*sportello stranieri*) and the intercultural council (*consulta interculturale*) to gather the philanthropic actors involved in pathways for the inclusion of migrants in the local fabric. As a result of the high and heterogeneous concentration of migrant populations from North Africa, Eastern Europe, and Asia, particularly in the Satellite neighbourhood (see De Vidovich & Bovo, 2021; Di Giovanni & Leveratto, 2018; Granata, 2004), multiculturalism is a key feature of Pioltello. In this multicultural area (but not only there), governmental attention is devoted to housing distress, new social risks, and poverty. Evictions, late payments of mortgages, and the consequent non-authorized occupations of dwellings with squatting practices are key issues that reveal the main urgencies for the local welfare agenda of the municipality, as stressed both by the mayor and the head of the social services office. Solutions related to social housing have been enacted by the administrators.

Inter-institutional relationships are sought by the social policies offices of Pioltello, but beyond agreements between the municipality and the third sector, the funding system is fragmented, especially since the metropolitan configuration of new strategic geographical areas of intervention (named *zone omogenee*) led to a rearranging of the governance of welfare services amongst the suburban municipalities of Milan.

4.2.2. Local Insights From Pioltello

The neighbourhood of Satellite can be seen as a "suburban arrival space" (De Vidovich & Bovo, 2021). A revitalization phase is ongoing as part of a wider programme promoted by the Metropolitan City of Milan, Welfare Metropolitano e Rigenerazione Urbana. This neighbourhood presents very peculiar socio-economic and socio-demographic conditions, and has a population of about 5,600 inhabitants, reaching almost 9,000 when non-registered citizens are included (Di Giovanni & Leveratto, 2018). As a consequence, and as highlighted by the mayor in an interview conducted in October 2018, housing in the area is identified as a highly critical issue. The ongoing planning phase in Pioltello and Satellite succeeded the vibrant period of area-based urban regeneration programmes launched in the urban peripheries of Milan from the early 1990s onwards. Yet, the metropolitan peripheries on the outskirts of the urban core have been left out of these processes. According to this misalignment, Pioltello seems affected by a sort of "welfare

offloading," a notion that describes a situation where "the city 'offloads' the persistent fragilities on its urban edges and then proposes the instruments, frameworks and possible solutions to cope with such vulnerabilities" (De Vidovich & Bovo, 2021, p. 15).

This process results from complex welfare transformations observed at a metropolitan scale involving both the city and its outskirts. The ongoing regeneration of the Satellite neighbourhood epitomizes the offloading process, by demonstrating how projects involving the most deprived neighbourhoods of Milan in previous years were, until recently, absent in suburbs. Nonetheless, this condition is not reproduced in the other two examples considered for this article, which present other problematic issues.

4.3. Local Welfare in the Hinterlands of Naples: The Example of Villaricca

4.3.1. Organization of Welfare Services

The massive sub-urban expansion of Naples that occurred during the 20th century was led largely by the decentralization of industrial plants and the modernization of road infrastructures (di Gennaro, 2014). The northern peripheries of Naples can be seen as a "conurbation" (Geddes, 1915) that encompasses the stigmatized urban peripheries of Scampia, Secondigliano, and Piscinola due to the presence of Camorrah and the sum of numerous hinterlands municipalities, of which many give shape to a non-administrative territorial unit known as *Comprensorio Giuglianese* (or *Agro Giuglianese*), composed of the main city of Giugliano in Campania (123,839 inhabitants, one of the most populated cities of the whole region) and the smaller towns of Qualiano, Villaricca, Marano di Napoli, Mugnano di Napoli, and Calvizzano. This context is characterized by diffused poverty and fragility. As argued by the municipal coordinator of social policies in Villaricca, the large majority of economic resources dedicated to service provision and social policies have a regional origin. The regional Law for Dignity and Social Citizenship (No. 11/2007) is the act of enforcement of National Law 328/2000, aimed at providing the normative framework for the development of a local system of social services, enacted through the Local Area Plans. According to the regional law, the organization of social services entails the supra-municipal governmental units, i.e., the *ambiti*, including different municipalities for demographic reasons. Villaricca belongs to the Ambito N16, together with Melito di Napoli (a town pressed between the *Comprensorio* and the northern periphery of Naples), Mugnano di Napoli, Calvizzano, and Qualiano. The Ambito responds to the social demands of 141,786 inhabitants and is run by the Ufficio di Piano (Planning Office). This governance actor carries out a number of tasks: social secretariat, care system for custody and adoption of children, implementation of measures to combat poverty, home-care assistance to elders and people with disabilities, education support to children with disabilities, and children exposed to school dropout. Nonetheless, the planning office of Ambito N16 faces many obstacles from both the organizational and economic sides which have, since the late 2000s, hampered adequate service delivery. As a consequence, service delivery has been delegated, especially to the third sector. Based upon this scenario, the municipality of Villaricca experiences two particular hardships: The first issue concerns financial constraints. In 2018, a town council resolution accounted for public insolvency by notifying residents of the absence of an appropriate public accounting of municipal expenditures. In sum, despite the development of the Local Area Plan designed on a tri-annual basis (2019–2021), in recent years Villaricca faced, and is still facing, a significant shortage of economic resources to be allocated for the organization and delivery of basic services. Furthermore, the third sector is unable to fully satisfy the social demands of many households. The second pivotal issue of local welfare involves the policy field of education. Unlike the rest of Italy, the metropolitan area of Naples is not stagnating demographically, but it is facing high percentages of youth unemployment and NEETs (young people not in education, employment, or training), 23% in Villaricca for the year 2011, according to census data. In this respect, childcare and school infrastructure improvement—funded through operative national programmes by the Ministry for Education—are key projects for the governance of welfare in Villaricca.

4.3.2. Local Insights From Villaricca

According to many former governors of Villaricca, welfare planning relies mainly on regional and national funds, especially for schooling and education. The numerous weaknesses faced by the local administrators hamper the development of territorialization processes. The weak proximity, on the municipal scale, of a reasonable number of welfare services, the lack of public spaces to be used as leverage for new commercial activities, and persistent poverty amongst numerous households, are some of the main pre-existing features affecting the poor welfare provision. Moreover, the main commercial services are concentrated in the historical city centre and are unfairly distributed across the municipal perimeter. In this respect, the key transit road Circumvallazione Esterna di Napoli serves as a "market road" (*strada mercato*; Indovina, 2006), which represents a typical pattern of the model of the Italian "diffused city." In the context of Villaricca, it is a hotspot for commercial and food supply. Another insight invokes the local problem of waste mismanagement, with harmful consequences for the population's health (Mastellone et al., 2009; Pasotti, 2010). Looking at Villaricca, it is reasonable to wonder how a local welfare system is ensured in a context of fragilities, where the public

expenditure has no sufficient resources to foster an adequate provision. A former alderman for social policies argues that the organization by *ambiti* seems incongruent with the spatial features of the Comprensorio, where many municipalities are contiguous to each other, as is the case for Villaricca and Giugliano in Campania. Yet the *ambiti* simply merge a number of municipalities according to the municipal's population density, without an area-based localization of services into units that could better meet the social demands of a conurbation. The Ambito N16 encompasses four municipalities, with an incongruent rationale according to the spatial features of the area. Overall, the combination of municipal and supra-municipal organization of services, supported by the third sector, navigates the economic shortages and diffused poverties. However, the local community and its institutions reacted resiliently to such a downtrodden situation. Basic services (such as water, sewage, and energy) are fairly provided to households, although the large presence of unauthorized buildings complicates their delivery. The example of Villaricca illustrates how local welfare is ensured between numerous societal fragilities.

4.4. Local Welfare in the Hinterlands of Rome: The Example of Fiano Romano

4.4.1. Organization of Welfare Services

In the Region of Lazio, wherein are located Rome and Fiano Romano, the act of enforcement of National Law 328/2000 is Law 11/2016, which provides the main guidelines for local service provision within the implementation of the Local Area Plans. The suburb of Fiano Romano, located 30 km north of Rome, is under the umbrella of the Consorzio Intercomunale Valle del Tevere (Inter-Municipal Consortium of Tiber Valley for Social Services and Interventions), which was launched in 2016 and ties together 17 municipalities, for a total of 111,675 inhabitants within the administrative boundary of the Città Metropolitana di Roma Capitale. To launch its planning activities, the Consortium maintained 2003's Local Area Plan as a guideline for the provision of social services during the economic crisis. Today, the Consortium organizes its policy-making through six "actions": (a) action on basic services, including home-based healthcare for elderly people, educational services, and daily care to the infirm; (b) actions tailor-made for small municipalities with a population below 2,000 inhabitants; (c) action on non-self-sufficiency; (d) actions on family, youth, and child protection; (e) action to tackle addictions; and (f) actions for social inclusion, to combat poverty, housing difficulties, and even mental health distress. These actions are sustained by a form of governance in which the regional authority defines the funding of the trajectories undertaken by the Consortium. According to the actions and the governance of the Consortium, the interview with the director revealed the main issues addressed by the local administrators in terms of welfare: the development of social-health policy integration, the territorialization of social policies, and the difficulty of identifying inhabitants' needs beyond traditional welfare demands. Furthermore, because a landscape of single- or double-family dwellings reminiscent of the Anglo-American model denotes a "private-oriented" suburbanism and habitus, the unruled and disarticulated (sub)urban expansion of the area affects welfare planning and possible pathways to social cohesion. In addition, the city of Rome plays a cumbersome role: Due to manifold problems in public affairs, Rome absorbs most of the efforts and resources targeted to a metropolitan governmental rationale. In other words, some ambiguities characterize the metropolitan area of Rome, and these result in a sum of inequalities in terms of service allocation, infrastructures, political engagement, and environmental changes. In this respect, two aspects are worth noting (D'Albergo, 2015): (a) an economic gap between Rome and its outskirts, which are not identified by the decision-makers as part of the large "metropolitan fabric" of Rome, and (b) a weak political leadership that accounts for the governmental issues affecting the institutional and scalar changes in the suburbs of Rome. The sum of the material factors (economic and policy actions with physical impacts on the urban spaces) and non-material factors (representation, discourses, and scalar or transcalar relations) explains the ambiguity of and contradictions in the problematic metropolitan dimension of Rome (D'Albergo et al., 2019). Furthermore, a new suburban fabric has emerged over the past three decades as a result of ways of living that differ from those of Rome's urban core (Cellamare, 2016). These ways are more influenced by an Anglo-American car dependence, but also by the search for urban-rural liveability. Yet, as suggested by the case of Fiano Romano, this suburban fabric experiences a lack of adequate welfare provision.

4.4.2. Local Insights From Fiano Romano

The suburb of Fiano Romano "epitomizes the turbulence of the extended urbanization of Rome, resulting in a constellation of towns that strongly modified the countryside" (De Vidovich, 2021a, p. 244). According to Istat census data, the town saw a 64.84% population increase between 2001 and 2011, and this trend continues unabated, also as a result of a migration flow from Rome (Vazzoler, 2016). Due to the incessant process of urban sprawl and the inability of public policies to manage the increasingly difficult coexistence of urban and rural land uses, such a demographic increase retrofitted the rurality surrounding Rome into a changing territory (Lelo, 2017). As for the case of Villaricca, a little-ruled process of residential expansion affected the area, especially the recently developed neighbourhood of Palombaro-Felciare. However, the private-led

expansion of the area that began in the 1990s neglected the infrastructural provision of basic urban standards, with negative consequences even in the supply of basic services, such as water. In this case, the purification plants for water treatment and the pipelines for channelling the water supply to private houses were not outfitted with a system that could cope with such a massive expansion (De Vidovich, 2021a). Some investigations revealed that the residential development in Palombaro Felciare was made possible by the absence of governmental monitoring, resulting in an unlawful territorial transformation through unauthorized constructions. Between 2005 and 2011, this case received the attention of the Court of Rieti, which undertook a judicial review (De Vidovich, 2021a; Vazzoler, 2016). This process convicted members of the public planning authority, local administrators, and construction constructors. As a consequence, the local administrations of Fiano Romano launched a retrofitting phase for the neighbourhood's public facilities, designing a local masterplan, entitled Piano Urbanistico Attuativo (PUA), aimed at equipping the public roads system with adequate urban standards (such as sidewalks) by indicating the location of foreseen public facilities (such as education infrastructures) in specific, tailored land plots. Nonetheless, such developments foreseen by PUA have not yet been started, whereas new residential constructions (in specific plots according to the PUA) have been built, confirming the combination of private-led and self-led suburbanization. This brief focus on the recent history of the Fiano Romano and Palombaro Felciare neighbourhoods (for further inquiry, see De Vidovich, 2021a) reveals how a "new suburbia" is emerging at the edges of Rome, where suburbanisms represent leverage for recasting local agendas facing emerging demands.

5. Discussion: Diverse Forms of Welfare Provision for Diverse Post-Suburban Areas

These three examples suggest a tangible diversification in welfare provision amongst Italian metropolitan areas, although the rationale of multilevel governance represents a common groundwork. Welfare governance is not homogeneous, and the "area-based" organization comprising a certain number of municipalities (District 3 and the subsequent *zona omogenea* Adda-Martesana in Pioltello, Ambito N16 in Villaricca, and Consorzio Intercomunale Valle del Tevere in Fiano Romano) faces several local issues that affect the governance itself. Furthermore, as also introduced in the methodological section, processes of suburbanization have occurred in the three target areas at different times and speeds, thus raising different histories of suburbanisms and suburban expansions. Therefore, governance frameworks are consistently different—for instance, from the recently expanded town of Fiano Romano to the local community of Pioltello, which has evolved through a longer process of residential expansion initiated during the period of migration flow that occurred during the 1960s and which brought many populations from Southern Italy to industrialized Northern Italy. In this view, (post)suburbanization in Milan and Naples presents the common feature of an expansion process that engulfed, through long-lasting processes, former rural towns into an increasingly densified and urbanized context.

With these three examples in mind, it is possible to provide replies to the research questions posited in the introduction in such a way that they relate to the ways in which governance of welfare services is organized at the edges of large cities, especially in Italy's three largest metropolitan areas. The aim of these answers is to identify the main governance challenges in each case, as well as ascertain the main differences between the three contexts that, as illustrated, present significantly different patterns of (post)suburban expansion. First, a focus on local tensions and contextual features is to be addressed. Metropolitan Milan, with the case of Pioltello, presents a situation that involves the "offloading" of its main social vulnerabilities and fragilities from the city to its outskirts (De Vidovich & Bovo, 2021), with the consequence of a heavy burden on local municipalities of issues that concern social services. Despite the presence of encouraging planning activities in the field of urban regeneration, the new sub-metropolitan rationale devised with the new *zone omogenee* entail a need to revise the development of local welfare systems that involve several municipalities. Metropolitan Naples epitomizes the difficulties of a highly fragile area, where poverty, diversified difficulties for both households and young people, and a lack of economic resources jeopardize any attempt to develop a local area plan. In this respect, the case at the edges of Naples reveals a situation faced by local administrators that is the most difficult of the three selected examples. The case of Fiano Romano, in metropolitan Rome, where processes of "metropolization" have occurred at a later stage compared to the areas of Milan and Naples, discloses the grey areas of an unruled and uneven residential expansion, where social demands related to welfare are firstly related to access to a basic service (such as water), and secondly to the traditional policy interventions in the field of social services, which—although fair—lack innovation. Overall, the three cases reveal a secondary role played by suburbs in the governance of welfare in metropolitan areas, despite the presence of well-established national and regional governing frameworks (see Figure 2). Whilst general difficulty in innovating welfare provision is common in the three cases, diversities cana be found in the social demands on the local scale of the municipality, in the capacity of decision-makers at regional and sub-regional levels to implement local area plans, and in forms of (post)suburbanization that make any comparison between the areas difficult. In this respect, the main governance challenge for welfare at the urban edges is, literally, related to the capacity to cope with

overlapping diversities in the societies that inhabit each suburb, the economic capacity of local administrators, and the different local vulnerabilities, which, as discussed, are not homogeneous amongst suburban constellations (Keil, 2013).

6. Concluding Remarks

To sum up, from a theoretical standpoint, the diversity of suburban typologies in the forms of governance, suburbanization and social fabric, have been framed in the theoretical debate on post-suburbia (Teaford, 1997)—a notion that over the two past decades has assumed a particular significance in navigating the political and conceptual nodes of suburban expansions (Keil & Young, 2011)—by distinguishing a new era of urbanization (Phelps & Wu, 2011) that corresponds to post-Fordism and to the diffusion of diverse forms of suburbs (Phelps & Wood, 2011). Furthermore, the term "post-suburbia" captures the profusion of terms relating to diverse urban forms concerning which there is only a partial consensus (Phelps et al., 2006; Tzaninis, 2020). With the threefold example, this article aimed at entering the recent theoretical debate on post-suburban Italy (De Vidovich, 2020), which focuses on the centrality gained by hinterlands and periurban areas as they relate to an understanding of the contemporary features and complexities of typically Italian diffused urbanization (Indovina et al., 1990), where many dynamics related to the urbanization of rural areas (Lanzani, 2012) are combined with the expansion of the few metropolitan nodes (Ardigò, 1967). The attempt to provide a post-suburban perspective for Italy includes commentary as to how this notion is useful to move from global debates on how suburban areas have evolved in diverse forms to local specificities that are influenced by overarching contextual features embedded in each national context (see De Vidovich, 2021a). The focus on these local specificities has been addressed with a reflection on welfare provision in (post)suburban areas, which has revealed the fragmentation of such provision.

In this respect, the three cases demonstrate how hinterlands and urban edges face a lack of comprehensive governance and governmental agendas to govern the uneven (post)suburban expansions (De Vidovich, 2021b). Although several studies have advocated the centrality of metropolitan agendas (see Gross et al., 2019), this article, with reference to welfare governance, has briefly introduced the weaknesses of this centrality. Hinterlands seem affected not only by a splintered provision but also by heterogeneous local problems (from water supply in the case of Rome to historic waste mismanagement in the case of Villaricca) that hamper the identification of a common rationale to develop adequate governance agendas. Because this article has only briefly presented three examples, without a well-structured discussion of case studies, further inquiries are necessary to determine how metropolises can develop resilient local welfare governance systems that can be sustained in the face of a diversity of local tensions.

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Conflict of Interests

The author declares no conflict of interests.

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Article

Between Decentralization and Recentralization: Conflicts in Intramunicipal and Intermunicipal Governance in Tokyo's Shrinking Suburbs

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Abstract
The suburban territory of Tokyo Metropolis, officially called the Tama Area, is experiencing path-dependent, multifaceted shrinkage in the sociodemographic, economic, and political and administrative (including fiscal) dimensions. The following two processes taking place in the opposite direction are at work: the political and administrative decentralization of authority and responsibility and the sociodemographic, economic, and fiscal recentralization (or reurbanization) of workplaces, residences, and municipal finance. Amid decentralization and recentralization, intramunicipal and intermunicipal conflicts, which are interrelated, are emerging in the lowest tier of government. We first explore intramunicipal disarrays of ideas and practices within a municipal government and subsequently investigate intermunicipal contradictions that are generating oscillations between unification and fragmentation among municipal governments. These two conflicts result in the failure to promote inclusive and geographically extensive intermunicipal cooperation only through the efforts of municipal governments. This failure partly stems from the path-dependency of Tokyo Metropolis incorporating past political and administrative separations at intrametropolitan and intrasuburban levels. Consequently, municipal governments face difficulty in building healthy relationships with upper-tier governments, civil society, and the market. In conclusion, we emphasize the importance of creating new forms of governance systems for promoting spatially wider and functionally integrated intermunicipal cooperation by combining physical and virtual environments, which respectively have geographically greater and lesser limitations, and by involving private and community actors. This creation requires both politically bottom-up and top-down approaches by exploiting the emerging sense of the increasingly intertwined future under suburban shrinkage and by consolidating intermunicipal cooperation activities that are fragmentally dispersed.

Keywords
decentralization; intermunicipal cooperation; local governance; metropolitan planning; recentralization; suburban shrinkage; Tama Area; Tokyo Metropolis

Issue
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1. Introduction

Uneven transformations of suburbs (Phelps & Wu, 2011) are embedded in and shaped by (post-)suburban politics and governance (Ekers et al., 2015). However, to date, there are few studies on these issues at the local level (Young, 2015), particularly in the context of suburban shrinkage. Given the importance of the local scale in the promotion of social and civic values and effective metropolitan governance, there is a need to address this gap. Thus, from the perspective of local public administration, this article explores the shrinking processes of

the suburban territory of Tokyo Metropolis—the Tama Area (hereinafter, Tokyo's suburban territory)—which contrasts with its urban territory named the Special Ward Area (see Figure 1).

Under the Local Autonomy Act of 1947, Tokyo's suburban territory comprises 30 municipalities classified into 26 cities (*shi*), three towns (*machi*), and one village (*mura*), and the urban territory comprises 23 special wards. In 2020, the suburban and urban territories had a population of approximately 4.2 million and 9.6 million, respectively, and an area of approximately 1,160 km^2 and 630 km^2, respectively. Tokyo's suburban territory is experiencing the path-dependent, multifaceted trajectory of "post-suburb → shrinking suburb" in the sociodemographic, economic, and political and administrative (including fiscal) dimensions (Ohashi & Phelps, 2021a). As illustrated in Figure 1, this suburban territory is facing the concurrent processes of the political and administrative decentralization of authority and responsibility without considerable fiscal decentralization (hereinafter, decentralization) and the sociodemographic, economic, and fiscal recentralization (or reurbanization) of workplaces, residences, and municipal finance (hereinafter, recentralization); in this article, recentralization indicates a combination of suburban shrinkage and urban regrowth. Decentralization and recentralization are at work in opposite directions—a suburban-to-urban direction and an urban-to-suburban direction, respectively (see Figure 1).

Thus, this article examines the changes in local public administration amid decentralization and recentralization, including the impacts of the Covid-19 pandemic and the 2020 Tokyo Olympics and Paralympics held in 2021. We interpret information obtained through interviews with academics, current and former government officials, private practitioners, and representatives of non-profit organizations and community groups. The details of informants (interviews 1–45) are described in Ohashi (2018), and the details of five new informants (interviews 46–50) are noted in this article. We highlight the emerging conflicts in intramunicipal and intermunicipal governance amid decentralization and recentralization, which hinder the consistent and timely policy making and implementation of municipal governments in close cooperation with upper-tier governments, civil society, and the market. In conclusion, we emphasize the importance of creating new forms of governance systems to mitigate these conflicts and to materialize spatially wider and functionally integrated intermunicipal cooperation (IMC).

2. Contextualizing Local Government Affairs Amid Decentralization and Recentralization

With globalization and the formation of polycentric spatial structures (Muller, 1997), suburbs have, through spatial enlargement and functional expansion, transformed into post-suburbs with population and industrial diversity, which are different from traditional, residential communities. Despite the absence of a consistent definition of post-suburbs, it is important to explore "the distinctive mix of interests and politics that may be apparent in post-suburban settlements [with diverse actors]" (Phelps, 2015, p. 16). Post-suburbs come "to embody new political sensibilities" (Phelps, 2015, p. 170) with "different types of urban regime transforming from a 'pure' suburban form of Molotch's (1976) 'growth machine' " (Phelps, 2012, p. 671). The non-local, relational politics of (post-)suburbs (Phelps, 2015) reveal converging and diverging patterns of interest by different tiers of government at different phases of (sub)urbanization (Ekers et al., 2015). Particularly, globalization compels (post-)suburbs to "internalize a contradictory regional politics—one held between the bounded territoriality of institutional structures and the unbounded nature of globalizing urbanity" (Keil & Addie, 2015, p. 909), especially in Asian metropolises (Aveline-Dubach, 2014). Thus, much attention has been paid to the increasing complexity of suburban politics and governance (Ekers et al., 2015) that create "the chain of causality that produces outcomes" (Young, 2015, p. 3). Yet, "there is often a serious lacuna at the local level….We need to study the local state and what drives the key actors" (Young, 2015, p. 52).

Concurrently, there is a growing body of research on shrinking cities (Martinez-Fernandez et al., 2012), albeit rarely with a focus on suburbs specifically. Research on shrinking cities in Japan has focused on rapidly declining provincial areas rather than metropolitan areas (Martinez-Fernandez et al., 2016). Changing local politics and governance in Tokyo's shrinking post-suburban territory remain underexamined. The understanding of shrinking cities has shifted "from the 'traditional' explanations of localized urban decline to recognition of 'glocalization' " (Cunningham-Sabot et al., 2014, p. 14), capturing these cities as "the combination of global processes and local configurations" (Martinez-Fernandez et al., 2016, p. 1). Therefore, this article contributes both to research on shrinking cities and on (post-)suburbanization.

Decentralization in political, administrative, and/or fiscal terms has been promoted across various countries for better responses to diversified needs at the local level. In Japan, political and administrative decentralization has been implemented in a phased and relatively gradual manner since the 1990s (Hein & Pelletier, 2006), albeit without considerable fiscal decentralization. However, "the central government has traditionally set the policy framework in areas ranging from city planning to industrial, welfare, education, and environmental policies…[with] little opportunity for policy innovation at the local level" (Martinez-Fernandez et al., 2016, p. 13) in the context of the Japanese developmental state. Nevertheless, municipal governments in Tokyo's suburban territory are, when compared with the national average, likely to be well resourced enough to take advantage of decentralized powers. The problem is that the

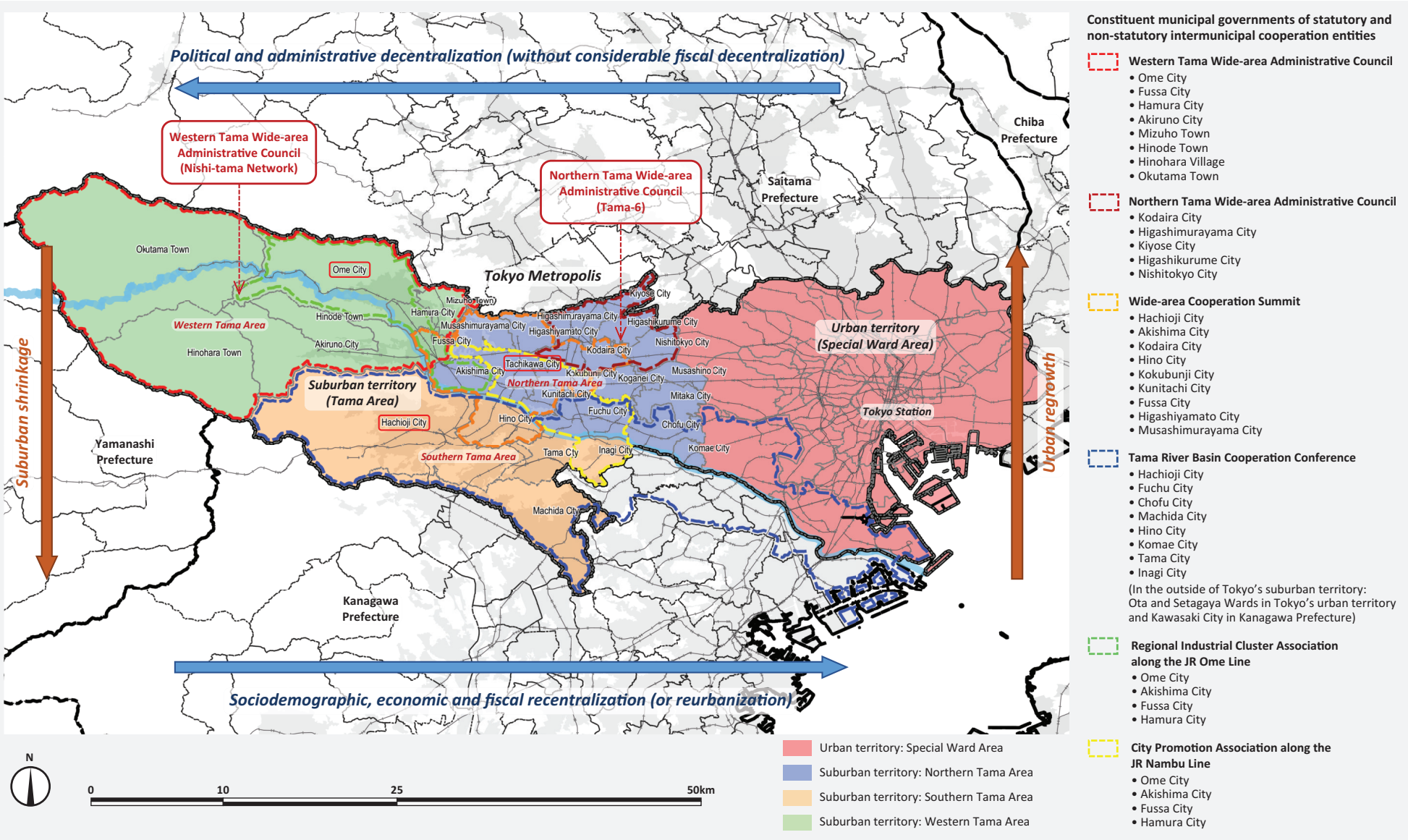


Figure 1. Tokyo's suburban territory amid decentralization and recentralization and with statutory and non-statutory IMC activities. Note: The Tama Council for the Promotion of Tourism comprises the chambers of commerce and industry of all municipalities, Tokyo Association of Mayors, Tokyo Town & Village Association, etc.

consequences of recentralization—suburban shrinkage and urban regrowth—place limits on their actions.

It becomes essential to explore (post-)suburbs as "processes" rather than "things" (Keil, 2017). (Post-)suburbs are "heavily path-dependent, reflecting different political, economic, cultural, and environmental histories" (Ekers et al., 2015, p. 20), involving both rapid and gradual changes (Lefebvre, 2003). Despite the growing importance of research on suburban shrinkage (Hanlon et al., 2009), changes in the local public administration of shrinking post-suburbs have been less examined from the perspective of processes, including political and administrative path-dependency. To examine the different modalities of suburban governance internationally, Ekers et al. (2015) created a framework consisting of the three modalities: the state, capital accumulation, and emergent forms of authoritarian governance (or authoritarian private governance). This article focuses specifically on the modality of the state in light of the lowest tier of government, with some attention to the other two modalities. Considering the likely prevalence of decentralization and recentralization in other countries, the case of Tokyo highlights significant implications for new forms of governance systems attuned to more complex processes of suburban shrinkage than suburban growth (Ohashi & Phelps, 2020) and aimed to ensure the better adaption and resilience of metropolitan and local areas (Pike et al., 2010). This article also contributes to the theorization of (post-)suburbanization by offering a deeper conceptual understanding of the trajectory of "post-suburb → shrinking suburb" (Ohashi & Phelps, 2021a) from the viewpoint of local governance and politics.

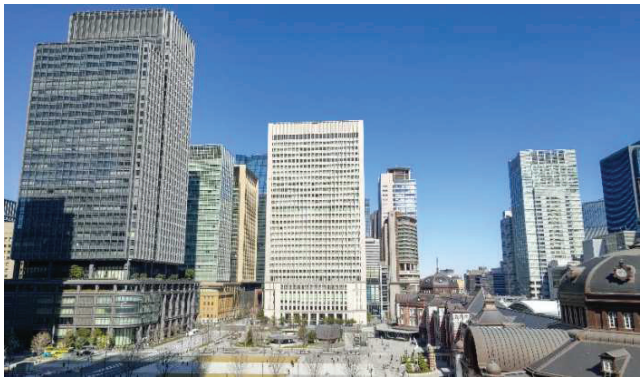
3. Tokyo's Suburban Territory Amid Decentralization and Recentralization

Given that Japan has a three-tier government system consisting of national, prefectural, and municipal levels, Tokyo Metropolis has a specific public administration system. The Local Autonomy Act of 1947 designates special ward governments in Tokyo's urban territory as special local governments and municipal governments in Tokyo's suburban territory as ordinary local governments. Special ward governments have a narrower scope of local public services than ordinary local governments. The Tokyo Metropolitan Government (TMG) conducts a part of these services, such as firefighting, water supply, and sewage treatment, in the urban territory (see Cybriwsky, 2011). The TMG levies the municipal inhabitant tax on corporations, fixed assets tax, and special land ownership tax (suspended since 2003). Half of the revenue obtained from these three taxes is spent to conduct the part of the services, and the remainder is distributed to special ward governments to reduce their fiscal disparities (called the fiscal equalization system). Given that municipal governments conduct the part of the services, the TMG provides municipal governments with disbursements such as subsidies. The subsidies include comprehensive grants for cities, towns, and villages (*shichōson-sōgō-kōfukin*) aimed to reduce urban-suburban disparities and to help municipal governments implement their own policies with few usage conditions. Within TMG's comprehensive grants, the policy cooperation quota (e.g., for purchases of electric vehicles and equipment for fire brigade teams) was newly established in 2018 to ensure policy consistencies between the TMG and municipal governments; the usage of this quota was expanded in 2021 to the promotion of digital transformation (DX).

This public administrative system is rooted in history. Tokyo Metropolis was formed in 1943 by the merger of Tokyo Prefecture (*Tōkyō-fu*) and Tokyo City (*Tōkyō-shi*) through the implementation of the metropolitan governance system. Tokyo Prefecture was introduced in 1868 with a decision on capital relocation and reformed in 1871 by the abolition of feudal domains and establishment of prefectures. Tokyo City was created in 1889 in the form of being separated from Tokyo Prefecture through the implementation of the system of cities, towns, and villages. The then administrative jurisdiction of Tokyo City almost corresponded to Tokyo's urban territory. Tokyo's suburban territory was transferred from Kanagawa Prefecture to Tokyo Prefecture in 1893. The reasons for this transfer included the intention of the government of Tokyo City, which suffered from a cholera epidemic, to ensure better watershed management by merging Tokyo's suburban territory with water sources to Tokyo City. The then suburban territory consisted of the following three administrative jurisdictions: the Northern Tama (*Kita-tama*), Southern Tama (*Minami-tama*), and Western Tama (*Nishi-tama*) Counties (see Figure 1). Tachikawa, Hachioji, and Ome Cities—main outer suburban cities designated as Business Core Cities (BCCs) and directly connected to Tokyo Station by the railway lines of East Japan Railway Company (JR East)—respectively belonged to these three counties (see Figures 1 and 2). These three cities are experiencing divergent trajectories in the sociodemographic, economic, and political and administrative (including fiscal) dimensions because of local, or intrasuburban, differentiations of specific dynamics, which are considered the underlying mechanisms of their trajectories (for details, see Ohashi & Phelps, 2021b). Despite few relationships among the Tachikawa City Government (TCG), Hachioji City Government (HCG), and Ome City Government (OCG) due to the past administrative separation, this divergence is making their IMC more challenging (Ohashi & Phelps, 2021b). Two other BCCs, Tama and Machida Cities, belonged to the same county (the Southern Tama County) as Hachioji City. At present, there remains only the Western Tama County, which has markedly shrunken in size and now accommodates Mizuho, Hinode, and Okutama Towns and Hinohara Village.

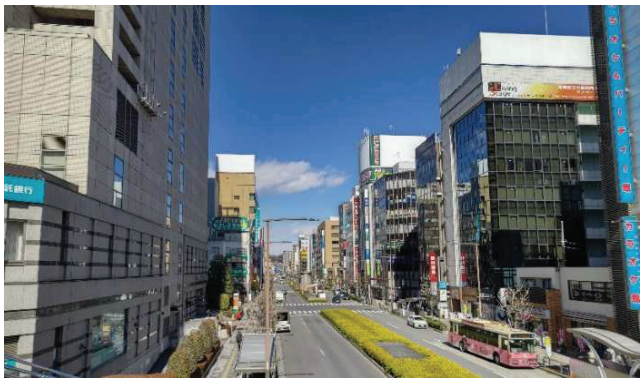
In addition, there were the following three waves of municipal amalgamations and splits led by the Government of Japan (GOJ): the Great Mergers of Meiji

Tokyo Station



Tachikawa City

Hachioji City



Ome City

Figure 2. Tokyo Station and Tachikawa, Hachioji, and Ome Cities as BCCs facing political and administrative fragmentation.

(that peaked in around 1888–1889), Shōwa (around 1953–1956), and Heisei (around 2005–2006). During the suburban growth period (from the late 1950s to the middle 1970s), municipal amalgamations and splits occurred concurrently in Tokyo's suburban territory. Because large municipalities such as Tachikawa, Hachioji, and Ome Cities upgraded from towns to cities earlier than small municipalities, the amalgamations were related to large municipalities that absorbed towns and villages and the splits to small municipalities that upgraded to cities separated from the umbrella of counties, each of which comprises towns and villages. The upgrades for Tachikawa, Hachioji, and Ome Cities occurred in 1940, 1917, and 1951, respectively, and the numbers of towns and villages which were absorbed until the mid-1970s (after their upgrades) was one, 10, and six, respectively.

The processes of decentralization in Japan, which were closely related to the Great Merger of Heisei, are broadly divided into two phases: (a) from 1993 (almost coincident with the collapse of the bubble economy) to 2001 and (b) from 2006 and beyond. In the first phase, the Decentralization Promotion Law of 1995 and the Comprehensive Decentralization Law of 1999 were enacted to establish more equal relationships between central and local governments; however, this phase is recognized as incomplete with few accomplishments. In the second phase, some achievements, including both central-to-municipal and prefectural-to-municipal transfers of authority and responsibility, were achieved by the Act on Promotion of Decentralization Reform temporarily enforced from 2006 to 2010. However, local governments have continued to be dependent on the GOJ and have less autonomy in a situation where fiscal decentralization is insufficient to maintain the influential powers of the GOJ.

The urban and suburban territories of Tokyo Metropolis have experienced a rapid reversal of fortunes in the sociodemographic, economic, and fiscal dimensions (for details, see Ohashi & Phelps, 2021a). In Figure 3, red and blue lines, which respectively correspond to Tokyo's urban and suburban territories, show the annual growth rates of population (x-axis) and those of employment (y-axis) at five-year intervals from 1955 to 2015. The radius of the circle at each point denotes the annual growth rate of local tax revenue during the corresponding five-year period. In contrast to municipal governments facing the continuing slowdown of fiscal growth, special ward governments, which experienced fiscal decline in the 1990s partly because of the doughnut phenomenon, recovered fiscal growth with a reversal of positive and negative values in the annual growth rates of local tax revenue in the early 2000s. Although the TMG collects the above-mentioned taxes in the urban territory under the fiscal equalization system, changes in these annual growth rates indicate changes in fiscal capacity in the lowest tier of government to some extent.

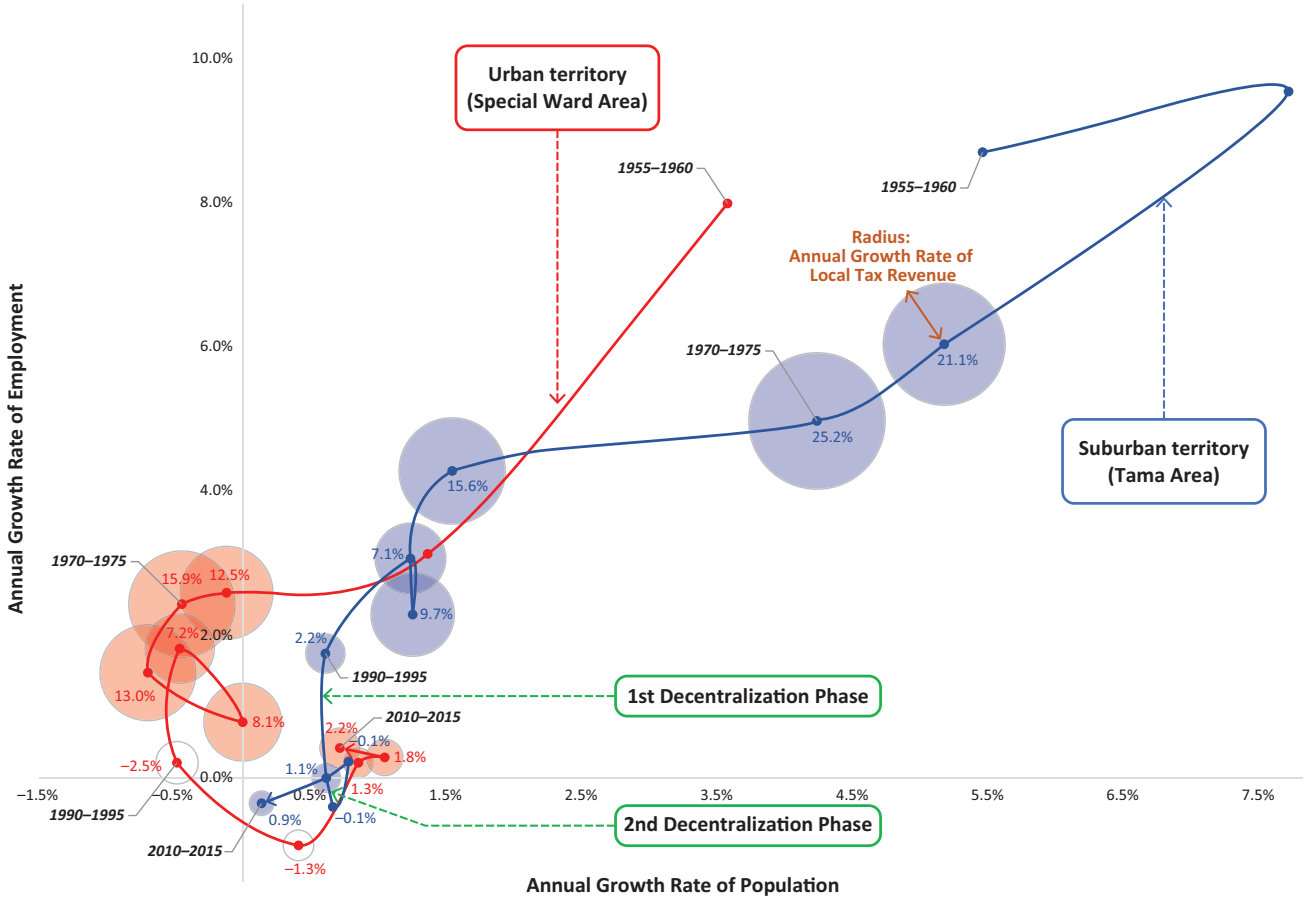


Figure 3. Tokyo's suburban territory facing delayed decentralization and a rapid shift to recentralization. Notes: 1) Given that the Establishment and Enterprise Censuses and Economic Censuses are unavailable in the same years as the Population Censuses, the annual growth rates of employment are calculated as those for 1951–1954, 1954–1960, 1960–1966, 1969–1975, 1975–1981, 1981–1986, 1986–1991, 1991–1996, 1996–2001, 2001–2006, 2006–2009, and 2009–2014; 2) for the annual growth rates of employment, there is a discontinuity during 2006 to 2009 due to a change in the survey methodology from the 2006 Establishment and Enterprise Census to the 2009 Economic Census. This discontinuity is adjusted with the use of weighted averages. Source: Authors' own, prepared with the use of the Population Censuses, Establishment and Enterprise Censuses, and Economic Censuses (by the Statistics Bureau, Ministry of Internal Affairs and Communications) as well as the statements of accounts for special wards, cities, towns, and villages (by the Bureau of General Affairs, TMG).

Tokyo Metropolis has made a rapid shift from post-suburbanization to recentralization (or reurbanization) from the viewpoint of the urban life cycle theory of Van den Berg et al. (1982) which consists of the following four phases: urbanization, suburbanization, disuburbanization, and reurbanization (or recentralization). As shown in Figure 3, the first and second phases of decentralization were almost coincident with recentralization. Thus, delays in decentralization and the rapid shift to recentralization have been creating the conflicts in intramunicipal and intermunicipal governance in Tokyo's shrinking post-suburban territory, as explained below.

4. Emerging Conflicts Underlying Intramunicipal Government Affairs

Amid decentralization and recentralization, each municipal government is experiencing intramunicipal, or internal, disarrays mainly due to a weakening of administrative capability and capacity, especially in fiscal and personnel resources (see Figure 4). Overall, delays in decentralization partly disabled municipal governments' efforts to improve their capability and capacity during the (post-)suburban growth period when they had leeway. Simultaneously, the rapid shift to recentralization deprived municipal governments of the time needed to optimize ideas and practices. Local politics and governance in Tokyo's suburban territory—especially in long-established municipalities such as Hachioji and Ome Cities—have continued to be heavily influenced by elderly people such as politicians, government officials, and local worthies who remain attached to past successes during the (post-)suburban growth period (Interview 41, Community Group). (Sub)urban shrinkage takes time to appear on government agendas (Wiechmann & Pallagst, 2012), and political and administrative arrangements change more slowly than

sociodemographic and economic transformations (Soja, 2011). Consequently, municipal governments have been unable to alter the systems of local public administration even with the use of decentralized powers. Municipal government officials also feel that decentralized powers are almost useless against forces of recentralization (Interview 5, HCG). Continuing suburban shrinkage weakens the administrative capability and capacity of municipal governments and makes it more difficult for them to work in a consistent and timely manner with upper-tier governments, civil society, and the market, as depicted in Figure 4.

First, amid the spatiotemporal divergence of political and policy agendas among different tiers of government (Ohashi & Phelps, 2021a), there are inconsistent overtures to upper-tier governments. In this respect, a former public official of the TMG commented:

> Owing to the recent shift of the GOJ toward the revitalization of the provinces, municipal governments in the Tama Area have found it increasingly difficult to clearly express opinions [toward upper-tier governments]. Because municipal governments see no prospect of survival without reliance on the Special Ward Area [prioritized by the TMG], they cannot suggest that they are part of the provinces that should be prioritized by the GOJ. Consequently, municipal governments have been forced to differentiate ideas and practices like chameleons, depending on the content of political and policy agendas. (Interview 21)

Moreover, insufficient fiscal decentralization undermines local public administration, as noted by a former public official of the TMG:

> In the past, municipal governments in the Tama Area did not receive many subsidies from upper-tier governments to ensure autonomy in expressing opinions. However, they get used to receiving subsidies. Despite decentralization, municipal governments have still been inclined to follow the intentions of upper-tier governments to gain subsidies. (Interview 39)

The continuing subsidy system has hindered autonomous actions of municipal governments. Municipal governments (as part of Tokyo Metropolis) sometimes seek TMG's support, but, at other times, they (as part of the provinces) favor GOJ's help. Likewise, municipal governments confront an intergovernmental dilemma about whether to engage with the GOJ or the TMG. This dilemma partly stems from the political and geographical proximity to the metropolitan center.

Next, municipal governments are beset by growing demands from local communities under advocacy planning and community participation, which are emphasized under decentralization. However, a municipal government, especially a large municipality that experienced amalgamations, struggles with the diverse opinions of locally differentiated communities, each with a specific history and identity. In other words, the past administrative separation makes key municipal governments, such as the TCG, HCG, and OCG, internalize more political and administrative fragmentation, making it difficult to promote civic engagement (see Figure 4). In this regard, a public official of the HCG commented:

> We need to close and consolidate elementary and junior high schools, especially in fringe areas [with falling student enrollments]. A consolidation between one (or two) elementary school(s) and one junior high school is a likely option. However, this optimization is not an easy task owing to the difficulty of consensus building with local communities, especially in the areas dominated by traditional communities. Past amalgamations created a mixture of traditional and new settlements within our administrative jurisdiction. Traditional communities tend to firmly disagree about this optimization while regarding schools [where they grew up] as important to local identity; they oppose even changes in school names. By contrast, this optimization is easier in new settlements, such as the Tama New Town, because newcomer communities tend not to express strong disagreement. (Interview 20)

Moreover, although the GOJ is promoting the densification and contraction of built-up areas under a compact city strategy, it is difficult for a large municipal government to uniformly apply this strategy to the entire administrative jurisdiction that is an aggregation of locally differentiated communities (Interview 5, HCG). Although larger municipal governments are likely to be more capable of exploiting decentralized powers, they tend to encounter more difficulties in consensus building with local communities.

Furthermore, recentralization compels a municipal government to prioritize more locality-oriented social welfare provisions (e.g., elderly care, childcare, education) and to narrow its vision, including the mindset of government officials (Ohashi & Phelps, 2021a). Decentralization magnifies this compulsion.

Lastly, a municipal government fails to exploit public benefits from private entities even with decentralized powers. This aspect is more relevant to smaller municipal governments. In this regard, a former public official of the TMG commented:

> Not all municipal governments in the Tama Area welcome decentralization. While large municipal governments [such as the TCG, HCG, and OCG] that are autonomy-minded welcome it, small municipal governments are challenged by it. One reason is a lack of human resources. Municipal governments, especially small ones, do not have experienced professionals who can negotiate with private developers. In the past, there was a clear division of roles

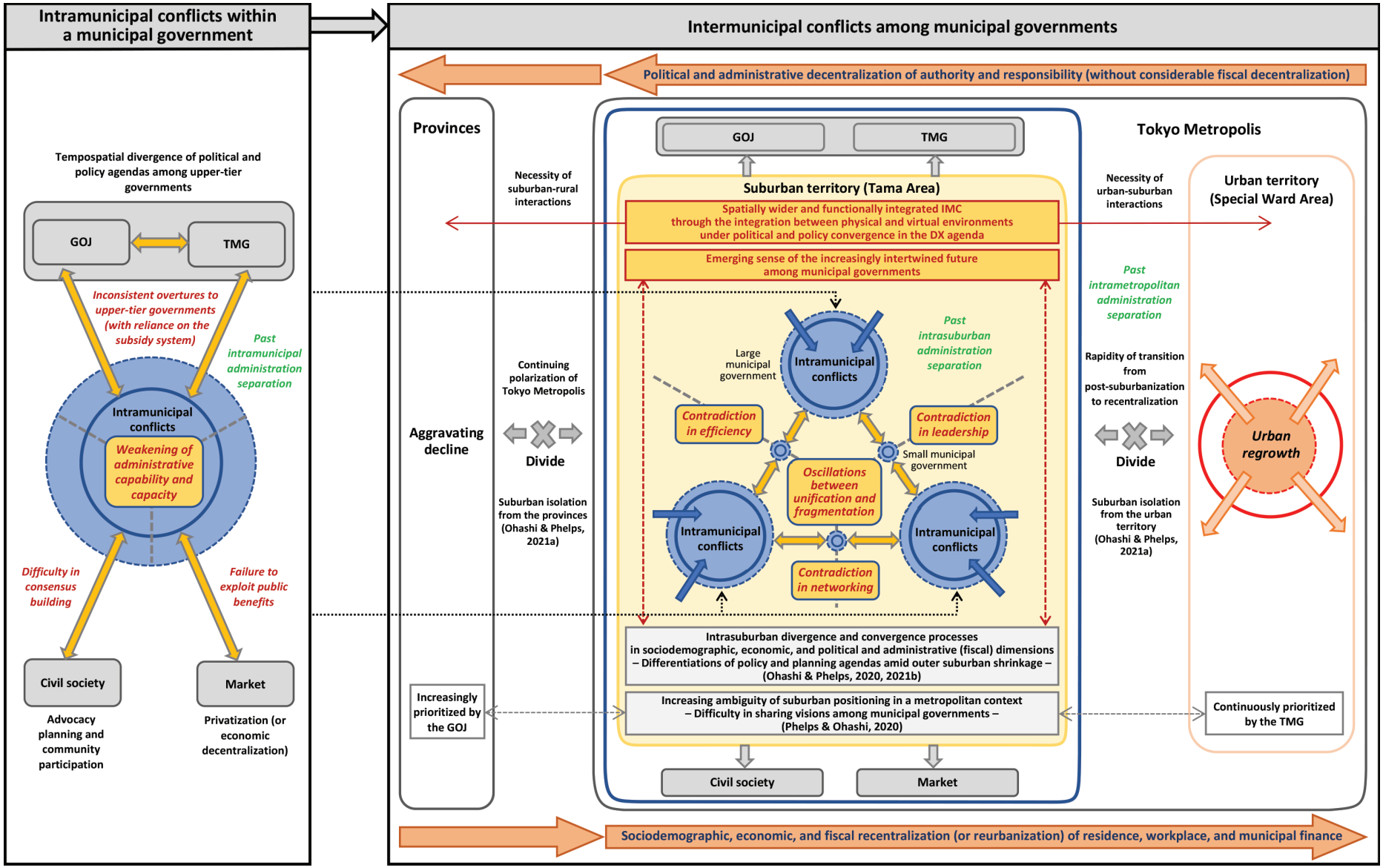


Figure 4. Interrelated conflicts in intramunicipal and intermunicipal governance in Tokyo's shrinking post-suburban territory.

> [between the TMG and municipal governments], namely city planning-related matters for the TMG and district [or local] planning-related matters for municipal governments. Municipal governments could benefit from this division. They could ask private developers to negotiate with the TMG about a part of their development proposals [related to city planning]. Through negotiation processes at both metropolitan and municipal levels, the proposals came to be finally aligned with the intentions of the public sector. However, municipal governments, which now have authority over matters related to both city and district [or local] planning, cannot sufficiently exploit public benefits from private developers, who often employ retired public officials of the TMG with more experience. (Interview 21)

Moreover, a municipal government fails to attract private investors in the trend of privatization (or economic decentralization) being promoted since the early 2000s. In this respect, a public official of the HCG commented:

> We have attempted to increase the number of elderly care management centers, each of which is planned to serve a radius of approximately 500 m [in alignment with GOJ's policy about the Integrated Community Care System]. We have issued public invitations to private enterprises for the construction and operation of these facilities. However, we have struggled to attract them because this business is less profitable in the Tama Area than in the Special Ward Area. They also have difficulty in finding labor since young generations wish to work in white-collar service industries in the Special Ward Area and are reluctant to work at blue-color elderly care facilities in the Tama Area. (Interview 17)

As such, municipal governments have—amid decentralization and recentralization—come to internalize the intramunicipal conflicts that hamper the building of healthy relationships with upper-tier governments, local communities, and private enterprises (see Figure 4). These conflicts make it more challenging for a municipal authority to govern its administrative jurisdiction, further leading to difficulty in promoting IMC, as discussed below.

5. Emerging Conflicts Underlying Intermunicipal Government Affairs

5.1. Contradictions in Promoting Intermunicipal Cooperation

In Tokyo's shrinking post-suburban territory, where municipal governments face positional ambiguity in a metropolitan context and difficulty in intermunicipal vision sharing (Phelps & Ohashi, 2020), these governments are confronting intermunicipal conflicts that are created by emerging contradictions amid decentralization and recentralization. The intermunicipal conflicts are aggravated by the above-described intramunicipal conflicts. As illustrated in Figure 4, these intermunicipal and intramunicipal conflicts, which are interrelated, are causing oscillations between unification and fragmentation among municipal governments, resulting in the failure to cultivate spatially wider and functionally integrated IMC across the entirety of Tokyo's suburban territory.

Overall, the suburban territory has incorporated political and administrative fragmentation—at both intrametropolitan and intrasuburban levels—which has hindered inclusive and geographically extensive IMC. In this regard, a Special Counselor of the Tokyo Urban Planning and Development Corporation (TUPDC), who is a former public official of the TMG, commented:

> The TMG originates from the government of Tokyo City [which existed from 1889 to 1943]. This origination has created a tendency in which the public administration of the TMG has been skewed toward the Special Ward Area. The TMG has a low number of government officials who engage in and have a thorough knowledge of the Tama Area when compared to the Special Ward Area. The TMG suggests the importance of respecting the autonomy of municipal governments. This suggestion can be said to be an excuse for TMG's reluctance to be involved in the Tama Area. Through the process of upgrading to cities [with splits from counties, each of which comprises towns and villages], politics in the Tama Area has become fragmented. In my view, the current situation [related to IMC] would have been a little different if there had been the proactive involvement of the TMG before these splits. This political fragmentation makes it more difficult for the TMG to promote IMC in the Tama Area. It would be unrealistic that municipal governments in the Tama Area will merge in the near future because reductions in the number of mayors and politicians [at prefectural and municipal levels] will cause fierce opposition. Because sudden, radical changes in political and administrative systems are impossible, gradual processes are needed. One of the important actions for promoting IMC in the future is to reduce the number of municipal-level politicians. (Interview 49, February 18, 2022)

In addition, the past administrative jurisdictions of the Northern, Southern, and Western Tama Counties have hampered IMC beyond their then jurisdictional boundaries, including the cooperation among the TCG, HCG, and OCG (Interview 46, Deputy Mayor, OCG, February 10, 2022). These past intrametropolitan and intrasuburban administrative separations have caused difficulty in creating solidarity among municipal governments, further weakening their influence on upper-tier governments (see Figure 4).

Given the political and administrative fragmentation above, contradictions are emerging in one of the following three issues: (a) efficiency, (b) leadership, and (c) networking, all of which are important for coping with suburban shrinkage.

First, there is a contradiction between increasingly required efficiency through some rationalization of local public services and the reluctance of municipal governments to cooperate. In this regard, a public official of the OCG commented:

> The Ome Municipal General Hospital, the main hospital in the Western Tama Area, receives many patients [who are not taxpayers for our city] from outside the city, although being operated mainly by our tax revenues. This facet is relevant to the problem of beneficiaries. The sharing of medical functions with other hospitals in neighboring municipalities would be necessary. However, it is difficult to do so because each municipality wishes to maintain a relatively full set of medical services. (Interview 35)

Municipal governments have shared facilities that generate externalities, such as an industrial waste disposal facility. However, they are facing a challenge of IMC concerning the sharing of facilities with net benefits to local communities. Each municipal government comes to increasingly cling to the existing capital (Interview 35, OCG) owing to fewer opportunities for new capital formation by investments from outside the municipality, which were numerous during the (post-)suburban growth period. The municipal government thus becomes keen to re-evaluate existing capital, including one that received less attention under (post-)suburban growth, for maximum utilization and accentuates the distinctiveness of its municipality to appeal to the outside. Decentralization intensifies this eagerness as each municipal government is forced to become more self-reliant.

Second, there is a contradiction between a weakening of the influential powers of large municipal governments and the continuing necessity of their leadership for coordinating municipal governments with different intentions. In Tokyo's suburban territory, there are statutory and non-statutory IMC activities at narrow or modest spatial scales. These activities have been occurring within geographically proximate areas and/or along natural and artificial capital (e.g., a river and railway lines, respectively) spanning across different municipalities, where municipal governments have similar policy and planning agendas. Statutory IMC activities under the Local Autonomy Act of 1947 take the form of wide-area cooperatives or partial cooperatives. As shown in Figure 1, Tokyo's suburban territory has the following two wide-area administrative councils (WACs) as wide-area cooperatives: (a) the Western Tama WAC, or Nishi-tama Network, established in 1983, and (b) the Northern Tama WAC, or Tama-6, established in 1987. Currently, the former comprises Ome City and seven neighboring municipal governments and the latter comprises five municipal governments after the amalgamation of Tanashi and Hoya Cities into Nishitokyo City in 2001 (see Figures 1 and 5). The Western Tama WAC has been led by the OCG, which is the most affluent among constituent municipal governments (Interview 42, Western Tama WAC) and previously benefitted from revenues from the Boat Race Tamagawa located in Fuchu City (Interview 28, OCG). Nevertheless, the OCG is concerned only for the future of its city and has limited concern for its neighbors, as public officials in charge of the Western Tama WAC noted:

> After GOJ's insistence on amalgamations slackened, the OCG and neighboring municipal governments, which have historically had strong local ties, have spontaneously continued IMC by establishing the Western Tama WAC. Neighboring municipal governments, which are smaller than us, benefitted from the spillover effects of administrative skills and know-how from the OCG, which has superior capability and capacity. In reality, the problem with IMC is cost-sharing. As the OCG has been weakening the fiscal base, we cannot provide strong incentives for this IMC anymore. (Interview 42)

As shown in Figure 5, the fiscal capacities of the outer suburban Western Tama WAC (with a large contribution from the OCG) and the inner suburban Northern Tama WAC (with relatively equal contributions from constituent municipal governments) have been declining. The former shows a faster pace of decline than the latter amid outer suburban shrinkage.

This contradiction in the issue of leadership is also associated with the desire of large municipal governments to maintain autonomy, which is strengthened by decentralization. In this respect, a former public official of the TMG stated:

> IMC necessitates win-win relationships. One difficulty for IMC is that large municipal governments, which are comparatively autonomy-minded, traditional, and/or prosperous, are reluctant to collaborate, although small ones wish to do so. For instance, Hachioji City, with a long history and traditional elites, would regard Tachikawa City as the nouveau riche. [Differences in history and identity between these two cities have hindered the cooperation between the HCG and the TCG]. (Interview 21)

In this situation, emerging discrepancies in policy agendas and priorities among the TCG, HCG, and OCG amid outer suburban shrinkage (Ohashi & Phelps, 2021a) are making IMC more challenging.

Third, there is a contradiction between a growing number of non-statutory IMC entities and minimal mutual networking with needless dispersions of municipal governments' resources that are increasingly limited

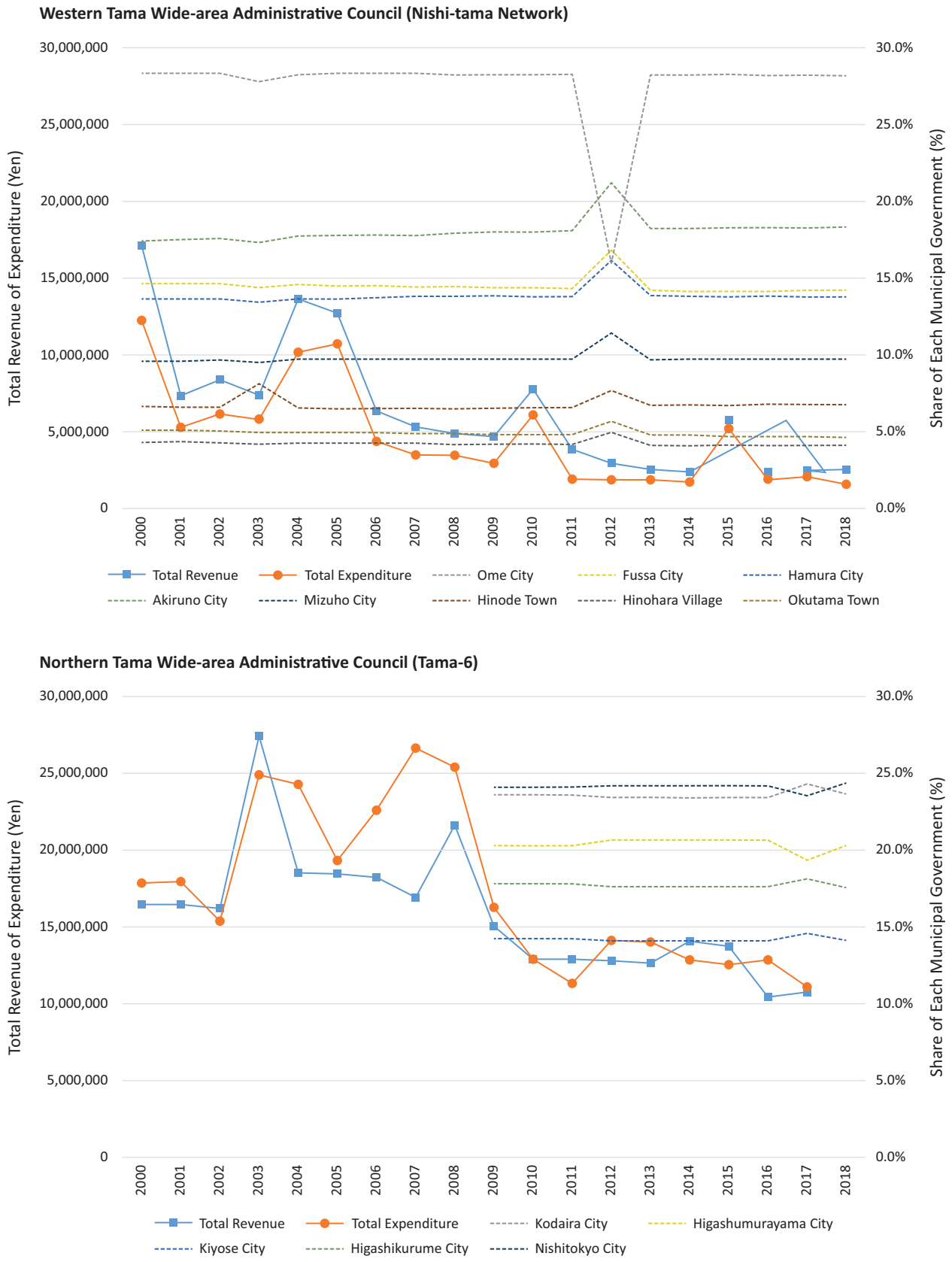


Figure 5. Changes in revenues and expenditures ofthe Western and Northern Tama WACs. Note: The shares of each municipal government for the Northern Tama WAC from 2000 to 2008 are unavailable. Sources: Authors' own, prepared with the use of data obtained directly from these two WACs.

under suburban shrinkage. The number of these entities increased to 118 in 2006 (Tokyo Association of Mayors, 2006), in a situation where municipal governments have felt the necessity of promoting IMC amid decentralization and recentralization. However, most entities are small in size and scope. At present, as shown in Figure 1, representative entities are the Regional Industrial Cluster Association along the JR Ome Line (established in 2006), the Tama River Basin Cooperation Conference (in 2013), the City Promotion Association along the JR Nambu Line (in 2016), the Tama Council for the Promotion of Tourism (in 2017), and the Wide-Area Cooperation Summit (restarted in 2017 after a 10-year break). The Tama River Basin Cooperation Conference is working on wide-area issues along the Tama River, the largest river passing through Tokyo's suburban territory, which originates from Okutama Town and beyond. This conference comprises the following 11 municipal governments: Hachioji, Tama, and Machida Cities (as the BCCs in the Southern Tama Area) and five municipal governments in Tokyo's suburban territory; Ota and Setagaya Wards in Tokyo's urban territory; and Kawasaki City in Kanagawa Prefecture (see Figure 1). This conference has the potential to create trans-prefectural, intrametropolitan, and intrasuburban interactions but operates with limited scope and at a modest spatial scale.

Since Tokyo Metropolis was chosen in 2013 to host the Olympics, inbound tourism promotion has become one of the prioritized agendas. The Tama Council for the Promotion of Tourism (involving all municipalities) was established through the lobbying activity of the Tokyo Federation of Societies of Commerce and Industry (headquartered in outer suburban Akishima City) to the TMG (Interview 48, Secretary-General, The Ome Chamber of Commerce and Industry [OCCI], February 15, 2022). This council aims to revitalize Tokyo's suburban territory by accelerating the flow of tourists, especially from urban through suburban to urban territories. The TMG is supportive because this acceleration does not damage the metropolitan center. However, it is very uncertain whether this acceleration would avert suburban shrinkage.

A symposium of the Wide-Area Cooperation Summit, which comprises the TCG and eight neighboring municipal governments, was held in Tachikawa City in January 2017 after a 10-year break. Their mayors discussed IMC which utilizes big data in partnership with the Institute of Statistical Mathematics under the Ministry of Education, Culture, Sports, Science and Technology; this institute was relocated to Tachikawa City through redevelopment (for details, see Ohashi & Phelps, 2021b). In this regard, a public official of the TCG commented:

> About 10 years ago, the TCG and neighboring municipal governments sought IMC. For instance, we attempted to carry out the cross-jurisdictional operation of community buses. However, the final problem is "who will pay for which parts [of bus routes]." There are public guidelines for cost-sharing for some projects, such as an intercity railway elevation project. However, there are no guidelines for IMC. Therefore, concrete outcomes almost came to naught at that time. For the restart of the summit, the current mayor of Tachikawa City called the mayors of the neighboring municipal governments. In my view, he becomes more confident because he is now one of the old-timers among the mayors. Although it would be difficult to realize fruitful outcomes in the short run, the intermunicipal sharing of information [separately possessed by each municipal government] can be relatively easy to carry out. (Interview 29)

Although the leadership of the TCG is re-emerging, the HCG and OCG are not members of this summit. Moreover, smaller municipal governments, which are interspersed between key municipal governments, find it difficult to act. For instance, the OCG wonders about the intention of the Fussa City Government (located between Tachikawa and Ome Cities) that joins both the Western Tama WAC and the Wide-Area Cooperation Summit (Interview 42, Western Tama WAC).

The increase in the number of non-statutory IMC entities does not necessarily strengthen the economic and social cohesion in Tokyo's suburban territory. With suburban shrinkage undermining the administrative capability and capacity of each municipal government, this increase is likely to cause excessive dispersions of its resources. Because there are no persons (or organizations) that can oversee the entirety of Tokyo's suburban territory (Interview 48, OCCI), IMC activities have become increasingly disconnected from one another, with different extents of engagement of the GOJ and/or TMG. Despite the importance of geographically overlapping parts of IMC activities (Interview 49, TUPDC/formerly TMG), institutional reforms—such as the establishment of a bureau specializing in IMC within the TMG and/or an organization where all municipal governments collaboratively work for the promotion of IMC—would be needed to cultivate spatially wider and functionally integrated IMC with consolidating processes of existing non-statutory and statutory IMC activities.

In addition, private enterprises such as railway corporations are making cross-jurisdictional activities. JR East, which has reduced the frequency of train operation on the JR Ome Line, is working for area revitalization and tourism promotion by conceptualizing the areas along this railway line as one integrated hotel partly because the pandemic is compelling the company to work for more business multilateralization (Interview 48, OCCI). However, it is difficult for municipal governments to make a large influence on business activities of railway corporations partly due to the non-existence of the subsidy system between them (Interview 42, Western Tama WAC). Most IMC activities are limited to the government sector without few relationships with private and community sectors (Tokyo Association of Mayors, 2006).

Consequently, these contradictions are generating the intermunicipal conflicts that are causing oscillations between unification and fragmentation among municipal governments, each with intramunicipal conflicts. Amid decentralization and recentralization, efforts made only by municipal governments, without upper-tier governments' involvement, would result in a continual rise and decline of fragmented IMC activities. This rise and decline would not only cause the waste of municipal governments' resources but also hinder the involvement of private and community actors. Moreover, the impacts of these IMC activities would be limited without access to urban resources, including global enterprises, which are vital to connecting Tokyo's suburban territory to global economic circuits (for details, see Ohashi & Phelps, 2021a).

Nevertheless, the TMG, with stronger ownership of Tokyo's suburban territory than the GOJ, has been inactive in promoting IMC in the suburban territory, although the term "cooperation" is used frequently (Interview 42, Western Tama WAC). Although this inactivity is partly caused by TMG's respect for local autonomy (Interview 49, TUPDC/formerly TMG), the TMG could act to actualize inclusive and geographically extensive IMC but chooses not to.

Regarding the importance of the involvement of upper-tier governments, a public officer of the TCG commented:

> The BCC policies were somewhat imposed on designated suburban cities by the GOJ in a top-down manner. We could not explicitly explain the benefits of these policies to our residents and closely cooperate with them in materializing a BCC. Voices of local communities within each administrative jurisdiction are important to motivate each mayor. While municipalities are rivals from the viewpoint of the Tama Area, they are comrades from that of the whole nation because they need to enhance the value of the Tama Area to compete with other parts of Japan. As for the intercity railway elevation project on the JR Chuo Line, which was implemented between inner suburban Mitaka City and outer suburban Tachikawa City [and completed in the early 2010s], all municipal governments became unified for a nationwide competition. This project, which required substantial funding, needed to compete with similar projects proposed in other parts of Japan to be approved by and obtain financial support from the GOJ. Therefore, all mayors in the Tama Area collaboratively participated in the establishment of the committee to realize this project and lobbied the GOJ, with vigorous support from the TMG and the involvement of national-level politicians elected from the Tama Area. From a local viewpoint, this project could eliminate the waiting times of pedestrians and car drivers for openings of railway crossings, which were very long previously. This elimination matched the needs of local communities in each administrative jurisdiction. Moreover, suburban municipalities across which this project spanned received direct benefits, and other suburban municipalities also received indirect benefits through spillover effects across the entire Tama Area. (Interview 47, February 10, 2022)

Likewise, the unification of municipal governments—based on geographically extensive spillover effects that ensure win-win relationships and the motivation of each mayor with support from local communities—may lead to the commitment of the GOJ, the TMG, and private entities. This aspect is increasingly important amid decentralization and recentralization.

5.2. The Increasingly Intertwined Future Among Suburban Municipalities

Municipal governments are becoming aware of their increasingly intertwined future under suburban shrinkage despite the emerging contradictions explained above; the prevalence of this awareness across the entirety of Tokyo's suburban territory would likely mitigate the above-mentioned oscillations. Even growing Tachikawa City anticipates future threats as suburban decay intensifies, as noted by a public official of the TCG:

> Tachikawa City has enjoyed prosperity as the city of commerce. Many people from outside the city visit our city for shopping. However, we worry about our future because the overall decline of surrounding suburban municipalities will result in the diminution of commercial consumption in our city. Therefore, the future prosperity of surrounding municipalities is essential. (Interview 24)

Declining Ome City also recognizes the importance of Tachikawa City, as a public official of the OCG commented:

> We recognize that Tachikawa City is the most important city in the future Tama Area. The future of Tachikawa City is important to Ome City because its prosperity will benefit us. Our proximity to Tachikawa City enables our residents to commute there. However, we do not currently have much cooperation with Tachikawa City. (Interview 28)

Suburban shrinkage has led to the spatial expansion of motivations for IMC based on the increasing awareness of reciprocity. Despite the continuity of little cooperation between growing Tachikawa City and stagnating Hachioji City (Interview 47, TCG), further suburban shrinkage would likely galvanize IMC. This shared sense of the increasingly intertwined future should be exploited in politically bottom-up and top-down approaches to make the above-mentioned institutional reforms for the promotion of IMC, even with the engagement of

private and community actors who want to tackle suburban shrinkage.

Nevertheless, IMC activities have been limited mainly to social welfare improvements (Tokyo Association of Mayors, 2006) and have continued to be deficient in industrial and commercial promotion (Interview 37, Tama Shinkin Bank), except for tourism promotion described above. This is a context-dependent specificity (Pike et al., 2016b) of local public administration that has accelerated the contraction processes in the suburban economy of Tokyo Metropolis (Ohashi & Phelps, 2021a). Tokyo's suburban territory needs to promote economic development and rebuild its role as a place of production rather than consumption (Ohashi & Phelps, 2021a). As the first step, intermunicipal sharing of information for economic development (including that of small- and medium-sized enterprises, which municipal governments can obtain in more detail than upper-tier governments) can be achieved (Interview 29, TCG).

Since 2021, eight municipal governments in the above-mentioned Tama River Basin Cooperation Conference have begun to collaboratively disseminate basic data, including information about supportive measures for the attraction of private enterprises. However, this action does not cover the entirety of Tokyo's suburban territory. Moreover, acting faster than government entities, the Tama Shinkin Bank, one of the three main local banks in Tokyo's suburban territory (together with the Ome and Seibu Shinkin Banks), is analyzing the economic and business potential from the overall viewpoint of Tokyo's suburban territory. This bank seeks to accelerate business-to-business transactions in addition to business-to-consumer transactions (Interview 37, Tama Shinkin Bank). Yet, as seen in the comment that the OCCI would need to consult with the Ome Shikin Bank when taking action (Interview 48, OCCI), this action of the Tama Shinkin Bank for suburban economic development possibly faces territorial limitations and also remains disconnected from government activities.

In this situation, the pandemic is creating a possibility of establishing more inclusive and geographically extensive IMC and intensifying urban–suburban interactions through the integration of physical and virtual environments, which have geographically greater and lesser limitations, respectively. Despite the overall spatiotemporal divergence of political and policy agendas among the GOJ, TMG, and municipal governments (Ohashi & Phelps, 2021a), convergence among these entities is emerging in the DX agenda. The GOJ formulated a plan for promoting the DX of local governments in December 2020 and established the Digital Agency in September 2021. The TMG also established the Bureau of Digital Services in April 2021 for the realization of "Smart Tokyo." The TMG declared its intention to create a digital TMG as "another headquarters" in the virtual environment and to establish a public-private partnership data platform where public and private data can be traded for new business creation. In a new plan for the revitalization of Tokyo's suburban territory (announced in September 2021), the TMG emphasizes the importance of creating more workable city regions through DX rather than just returning to pre-pandemic conditions. DX can improve the efficiency of local public administration, for instance, through the reduction of paperwork in administrative operations and the improvement of residents' access to public services (Interview 50, Section Chief, Bureau of General Affairs, TMG, March 11, 2022). DX corresponds with local needs enough to gain support from local communities. From the side of Tokyo's suburban territory, the Tokyo Association of Mayors, together with the Tokyo Town & Village Association, submitted an official request about DX to the TMG in November 2020. This suburban request partly prompted the action of the TMG to expand the usage conditions of the policy cooperation quota of its comprehensive grants for DX. As for this expansion there are mutual processes between the TMG and municipal governments, both of which wish to promote DX (Interview 50, TMG). In this respect, the Deputy Mayor of the OCG commented:

> One possible way to create IMC among the TCG, HCG, and OCG is to exploit the recent trend of the DX of municipal governments, including the open data movement, which is being promoted by the GOJ and TMG. Although a key (or core) computer system is currently operated by each municipal government, it might be possible for the TCG, HCG, and OCG to cooperate on the introduction and operation of the key system. Also, municipal governments will be able to cooperate on the training and exchange of DX personnel [who do not sufficiently exist in government entities]. For this cooperation, cost-sharing and cost-benefit performance must be discussed. It is problematic that there are differences in the quality and quantity of databases among municipal governments. For the realization of this cooperation, there are two approaches: (a) led by the TMG (top-down) and (b) promoted from the Tama Area side (bottom-up) by promoting intermunicipal discussions at the Tokyo Association of Mayors to formulate a unified request from all mayors to the TMG. (Interview 46)

Despite this emerging possibility of cooperation among the TCG, HCG, and OCG, actions only by municipal governments are likely to be fragmented and limited at narrower spatial scales even for DX. Open data movement-related actions of these three municipal governments are different; the HCG started this system in 2014 for the first time in Tokyo's suburban territory, whereas the TCG and the OCG did so in 2018 and 2019, respectively. Moreover, the TCG is cooperating with the Mitaka City Government and the Hino City Government on a DX-related project and the TMG supported this cooperation through its comprehensive grants even before the above-mentioned usage expansion to DX (Interview 50, TMG). The actions of friendly

municipal governments, mostly with local ties, tend to keep DX-related IMC spatially limited and cause the fragmentation of support from the TMG in Tokyo's suburban territory. Furthermore, in a situation where the GOJ is attempting to provide some standardized alternatives of the key computer system to local governments (Interview 50, TMG), even with the intention of ensuring intermunicipal data consistency to a certain extent, municipal governments might choose different systems in the case of the non-involvement of the TMG. This would result in the failure to introduce the key computer system uniformly across the entirety of Tokyo's suburban territory. This failure would have adverse effects on DX-related projects, including those for smart city development, which are, in a disconnected manner, implemented by public and private entities in different parts of Tokyo's suburban territory. Therefore, in close cooperation with all municipal governments, the TMG should proactively work toward the creation of spatially wider and functionally integrated IMC covering the entirety of Tokyo's suburban territory or even across Tokyo Metropolis by promoting the integration between physical and virtual environments. This IMC would contribute to strengthening intrametropolitan and intrasuburban interactions, which serve to make Tokyo's suburban territory an integral part of metropolitan systems and to establish better relationships with upper-tier governments, civil society, and the market (see Figure 4). In the future, it is desirable to promote this sort of IMC across the entirety of the Tokyo metropolitan area as a functional urban area.

6. Conclusion

The Tokyo case provides the insight that the trajectory of "post-suburb → shrinking suburb"—amid decentralization and recentralization—incorporates the intramunicipal and intermunicipal conflicts that are radical but barely visible phenomena in the lowest tier of government. These conflicts are generating oscillations between unification and fragmentation among municipal governments, resulting in the failure to establish spatially wider and functionally integrated IMC. These conflicts have been created structurally through long-term, complex processes of (post-)suburbanization, including political and administrative fragmentation that occurred before (post-)suburbanization. Suburban shrinkage generates evident contradictions in efficiency, leadership, and networking; contradictions in more issues need to be explored. Consequently, local public administration is becoming too fragmented to cope with more complex processes of suburban shrinkage than suburban growth (Ohashi & Phelps, 2020), somehow indicating limits of government decentralization (Tomaney, 2016) when occurring along countervailing tendencies toward recentralization. Because the reworking of (post-)suburbs is a political process involving all actors (Phelps, 2015), fragmented local public administration impedes this process.

As recentralization is compelling each municipal government to focus on more locality-oriented social welfare provision (Ohashi & Phelps, 2021a) under decentralization, IMC should be spatially expanded and functionally integrated across the entirety of Tokyo's suburban territory, especially with the prioritization of economic development. It is important to not only accelerate intrametropolitan and intrasuburban flows through tourism promotion but also level up the economic performance and productivity of Tokyo's suburban territory itself through this IMC, including the creation of more linkages between social welfare industries and other industries such as manufacturing (Ohashi & Phelps, 2021a). This levelling up requires the strengthening of economic and social cohesion in the suburban territory and the improvement of its connectivity to external territories through the integration of physical and virtual environments, together with the optimization of social welfare provision and the reduction of fiscal burdens on municipal governments. For this to happen, there is a need to establish integrated governance systems with the involvement of upper-tier governments, especially the TMG, which serves to mitigate the intramunicipal and intermunicipal conflicts. The growing awareness of the increasingly intertwined future among municipal governments is the key. This awareness should be exploited in both politically bottom-up and top-down approaches, especially under the emerging convergence among the GOJ, the TMG, and municipal governments in the DX agenda. This process of institutional development would contribute to creating not only economic growth conditions but also political and social values (Tomaney, 2014), leading to better relationships with private and community actors.

Given the importance of achieving institutional arrangements in an integrated approach at both local and regional levels (Pike et al., 2016a, 2016b), the Tokyo case highlights the significance of considering changing intramunicipal and intermunicipal government affairs in a suburban transition from growth to shrinkage for good metropolitan governance. Decentralization is a policy that is not universally suitable across political and geographical settings and varied conditions at different phases of urbanization. The involvement of upper-tier governments has regained its importance for Tokyo's shrinking post-suburban territory. Rather than blindly promoting decentralization, rescaling (Brenner, 2004) in intergovernmental and intermunicipal terms, as well as intragovernmental reforms in prefectural and municipal governments, should be undertaken with attention to changes in the conditions of local public administration. These changes are subject to the relationship between different forms of governance, different phases of urbanization, spatiotemporal processes of political and policy convergence and divergence among different tiers of government, and technological advances, including those related to smart cities. We have shown how an understanding of changes in local public administration

contributes to a conceptual appreciation of different trajectories of (post-)suburbanization for theoretical development (Phelps & Wood, 2011) and to the establishment of adaptative systems of governance to ensure metropolitan and suburban sustainability and resilience.

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Conflict of Interests

The authors declare no conflict of interests.

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Article

From a Small Village to an Exclusive Gated Community: Unplanned Suburbanisation and Local Sovereignty in Post-Socialist Hungary

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Abstract
In Hungary, after the regime change in 1989, one of the most important institutional changes concerning suburbanisation was the high sovereignty of local authorities, albeit without appropriate funding for sovereign operation. This type of local sovereignty made mezzo-level planning and cooperation of independent municipalities ineffective. The inherent systemic political corruption of the rapid post-socialist privatisation hindered spontaneous cooperation as well. As a result, suburban infrastructure, even in municipalities with high-status residents, remained underdeveloped (from traffic connections through waste management to water provision). Our research field, Telki, was successful in selling land because its scenic location and the absence of industrial and commercial activities made it attractive for high-status suburban settlers. These newcomers were not interested in the further functional development of the village, and, as they took local political power, they successfully restricted economic and functional development. Consequently, selling land and introducing property taxes remained the most important source of income. The colonisation of the village by newcomers also meant the displacement of lower status original villagers and, today, mostly high-status families with young children feel at home in Telki. Others feel excluded not only because of real estate prices but also by the lack of appropriate functions or simply by the narrow concept of an appropriate lifestyle in the village defined by local power. The consequence of a complete lack of cooperation and rational planning is not only social injustice, elite segregation, and environmental harm, but also the reduced economic and housing potential of the Budapest agglomeration.

Keywords
Budapest; post-socialist urban transformation; residential suburbanisation; settlement planning; urbanisation

Issue
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1. Introduction

Suburbanisation can be observed virtually anywhere in the world (Keil, 2018). However, the exact form and actual mechanisms behind the process can be very different in different places and at different times as well. Concentrating on the governance aspects, Ekers et al. (2012) differentiate between self-led, state-led, and private-led suburbanisation. The main difference is the extent to which the process is planned, regulated, and governed. We use these categories to typify the suburbanisation process we examined.

In socialist Eastern Europe, lower status migrants from the countryside settled in the suburbs of urban centres because housing was scarce and movement to the city was administratively restricted (Bertaud, 2006; Stanilov & Sýkora, 2014b). After the regime change, however, at first self-led and later private-led suburbanisation of higher status groups became increasingly important in post-socialist cities (Hirt, 2007; Leetmaa &

Tammaru, 2007). However, contrary to Western Europe, local sub-centres are mostly missing in this system (Haase & Nuissl, 2007) and infrastructure is substantially less developed. Lack of planning and integrated governance in the post-socialist context caused problems of uncontrolled population growth, lack of traffic and other infrastructure, and a high level of segregation.

In this article, we examine the suburbanisation of Budapest, Hungary, after the regime change in 1989 through a particular case, to analyse how the abovementioned features are related to the institutional and regulatory changes caused by the process of post-socialist transformation (Stenning & Hörschelmann, 2008; Tuvikene, 2016). We present the results of our detailed field research in a suburban village (Telki), complemented with planning documents and available statistical data. From a low-status, underdeveloped rural place, Telki became one of the highest status settlements in Hungary. However, we found that this development was full of conflicts and contradictions, veiled by the propaganda of success related to status growth, resulting in an extremely segregated settlement resembling a gated community with very limited functions and unsustainable funding in the long term.

We claim that the particular institutional and regulatory changes of the post-socialist transformation in Hungary played a major role in these processes. First, the political reaction to the socialist centralisation was to grant very high-level municipal sovereignty, but adequate funding for that was missing (Kovács, 2020; Vigvári, 2008). The extreme shift to decentralisation started to erode quickly, and in the current state of illiberal Hungary, budgets and powers of municipalities are deeply restricted and controlled by the central state (Hegedüs, 2015; Jelinek, 2020). Second, privatisation and management of state- and municipality-owned property were realised in a politically controlled (neo-patrimonial) manner (Szelenyi & Csillag, 2015). This is one of the main sources of systemic corruption (Jávor & Jancsics, 2016), for example in the privatisation of municipal assets and allocation of EU funds. Neo-patrimonial power and property relations and consequent systemic corruption restrict the cooperation of political actors and how private market players and voters can exercise control over political power. Politics is a dirty word in Hungary, and participation and expression of opinions on public issues are rare (Gille, 2010). As a result, the suburbanisation of Budapest and particularly in Telki is a hybrid of self- and private-led types of suburban developments.

After an outline of the relevant international literature on the governance of suburbanisation, our concept of post-socialism is presented, followed by relevant issues of post-socialist suburbanisation and municipal politics in Hungary. After our methodological considerations and a short description of the recent development of the Budapest agglomeration, we present how the development politics and political leadership of the village transformed over time, with particular focus on inner conflicts in the village and conflicts with other settlements and state actors. In the conclusions, we revisit how the presented data about the suburbanisation of Budapest and the development of Telki are related to the post-socialist transformation and more generally to governance and conflicts of suburbanisation.

2. Theoretical Background

2.1. Governance Types of Suburbanisation

Ekers et al. (2012) identified three types of suburbanisation: self-led, state-led, and private-led. The self-led suburbanisation is unplanned and ungoverned, even infrastructure can be missing. State-led suburbanisation involves centralised planning, while private-led suburbanisation is governed by a decentralised process where the state provides the regulatory framework for market processes and private developments. Every type can lead to urban sprawl and social segregation, but the mechanisms and opportunities to intervene are different.

In North America, the self-led type was typical in the 19th century but was superseded in the mid-20th century by the state-led type. The federal state contributed to suburbanisation through tax incentives, subsidies related to housing finance, and infrastructure developments. The segregation of social groups was facilitated by these support systems with built-in racial and class discrimination (Hanlon et al., 2010). Suburban segregation is not a process unique to North America however, it can take different forms. An extreme form is the gated community (Keil, 2018). In the last decades of the 20th-century, private-led suburbanisation became typical: The state did not actively participate in the suburbanisation process but created the conditions for the dominance of market-based processes (Ekers et al., 2012).

There are differences between North American, Western European, and post-socialist countries in metropolitan governance, regional development policies, and the system of local government, as well as social, economic, and political conditions (Bučaitė-Vilkė & Krukowska, 2020; Salvati & Gargiulo Morelli, 2014). Unlike in North America, in Western Europe, municipalities strongly depend on the regional and/or state levels. Thus, states have a strong influence on local governments in spatial planning and development, and it makes these processes more coherent. The structure of the housing market causes differences between Western European contexts. Suburbanisation takes a different course when privately rented housing (e.g., Switzerland), highly subsidised social housing (e.g., Sweden), or private ownership (e.g., UK) dominate (Phelps & Vento, 2015). Differences in suburbanisation between countries are also influenced by planning culture, the system of local governance, the legal system, and differing approaches to sustainable development. These factors together determine the types of suburbanisation.

2.1.1. The Specificities of Post-Socialist Countries

Socialist suburbanisation can be classified as state-led. However, government regulations, unlike in North America and Western Europe, did not facilitate migration from the urban core to the suburbs and suburbanisation was rather fuelled by rural immigration (Hirt, 2007; Stanilov & Sýkora, 2014b). After the regime change, first self-led suburbanisation and later private-led suburbanisation prevailed (Ekers et al., 2012; Hirt, 2007; Leetmaa et al., 2009). The process took place without planning at the regional or country level and developments were, therefore, uncoordinated and unresponsive to spontaneous processes (Hamel & Keil, 2016).

There are also differences between post-socialist countries as well: Suburbanisation was, on the one hand, determined by the exact regulation of the transformation and privatisation; on the other hand, the historical pathways of urbanisation were also different (Leetmaa & Tammaru, 2007; Stanilov & Sýkora, 2014b). Centrally important factors were privatisation through state-owned housing and the emergence of a new system of local governance. These policies show great variation as political decisions about them were not predetermined (Andrusz et al., 1996; Kok & Kovács, 1999; Sailer-Fliege, 1999; Stanilov & Sýkora, 2014c).

In post-socialist countries, the complicated process of transformation and the need for investments narrowed the playing field of policy (Kajdanek, 2014; Leetmaa et al., 2009). Without planning and coordination, settlements affected by suburbanisation were often not prepared for the new population flows and lacked services and adequate infrastructure (Bučaitė-Vilkė & Krukowska, 2020; Hess et al., 2012). Suburban sub-centres have developed just in a few cases, and the dependence on the central city has remained strong (Hirt & Atanas, 2015).

2.2. The Concept and Significance of Post-Socialist Transformation

Post-socialist institutional transformation has ongoing consequences today (Stenning & Hörschelmann, 2008, p. 329). Differences compared to "Western" cases and between cases of the post-socialist context can be understood by the de-territorialised concept of post-socialism (Tuvikene, 2016). Post-socialism does not have to be considered as a totality but as a set of continuities (e.g., the deep involvement of political power in economic relations) and anti-continuities (e.g., privatisation and state-phobia; Tuvikene, 2016, pp. 141–142). A good example of anti-continuities for this article is the transformation of the centrally determined local development in socialism to a very high level of municipal sovereignty after the regime change (Hirt & Atanas, 2015; Stanilov & Sýkora, 2014a).

However, anti-continuities do not mean a direct transformation to free-market capitalism. Privatisation was a politically controlled process with discretional and politically motivated decisions. This resulted in lord-vassal relations between politicians and new owners of privatised state assets (Szelenyi & Csillag, 2015, p. 29). Hence, besides neoliberal elements, neo-patrimonial power and property relations are determinant. Therefore, (as a continuity of state socialism) private property depends on political legitimation on the one hand (Szelenyi & Csillag, 2015), and public property is systematically dealt with as if it was the private property of its managers, the politicians, on the other. Since corruption is systemic (Jávor & Jancsics, 2016), punitive or even political consequences are scarce. Participation in politics is therefore very limited and *politics* became a dirty word in Hungary due to the features of the post-socialist context (Gille, 2010). The example of housing privatisation in Hungary illustrates well (populist) political decisions in privatisation (see Section 2.3.1), while the controversies around the privatisation of municipality-owned land in our research field is an example of mostly unchecked quasi ownership rights of local political power over municipal property. These informal and corrupt governance practices became the norm since the illiberal turn in 2010 when Prime Minister Viktor Orbán gained a constitutional majority in the parliament and executive political power became virtually uncontrolled in Hungary.

2.3. Post-Socialist Settlement Politics in Hungary: From Extreme to Constantly Declining Sovereignty

The state socialist period between 1950 and 1990 was characterised by the strong centralisation of territorial policies. The state had control over development resources, so it was the main actor in regional and local development. After this period, the previous housing policy and settlement planning were repealed, the earlier ownership structures dissolved, and state control was alleviated (see anti-continuities). The aim of the first municipal law (Hungarian Parliament, 1990) was to establish autonomy, freedom, and local democracy similar to Western European countries. Hereupon the number of municipalities with independent self-government was doubled. However, since 1990, the volume of tasks and the capacity, size, and funding of municipalities have never matched. Establishing the autonomy of the individual basic units (village, town, district of the capital) was more important than the element of integration that connects them. As a result, settlements became the basic units of territorial governance, and mezzo-level control and planning were missing. This model assumed that new local governments would cooperate spontaneously (Kovács, 2020, 2021).

However, sovereign settlements did not want to cooperate because they feared losing the autonomy they had gained after the regime change (Timár & Váradi, 2001; see anti-continuities again). Because of the system of municipal revenues (see Section 2.3.1),

cut-throat competition for investments and businesses began. Cooperation between municipalities (e.g., joint planning association) or coordination on regional level planning was only motivated by available funding and existed only as long as financial support (including EU development funds) was received. The use of EU funds required planning at the regional level, but the implementation of developments was more or less under the influence of the local elite, who informally controlled the distribution of regional development funds. NGOs or economic actors could get involved in this only sporadically (Kovács, 2019, 2020). Because of the informal and political control of the settlement and territorial development, and its dependence on state-level party politics, the reflexive political-economic analysis concludes that all this "lead[s] to a caricature version of the 'entrepreneurial municipality' " (Varró, 2010, p. 1260).

The politically controlled allocation of EU funds strengthened corruption networks as well. Local development policy conditions have become asymmetric and elitist, especially in small settlements (Kovács, 2020). These local systems of corruption also restrict cooperation.

The independence of local governments started to decrease rapidly. A new constitution and a new municipal law were passed (Hungarian Parliament, 2011) and a strong state centralisation started. Autonomy, political prestige, and responsibilities of local authorities became limited and local governments lost their direct control and decision-making power in many fields (Kovács, 2020, 2021). In connection with the recentralisation processes, the resources of local government continued to decrease. According to our ongoing research on urban planning, the allocation of funds largely depends on political loyalty and connections with the highest level of power, very similar to the times of state socialist autocracy before 1989.

2.3.1. Revenues and Resources of Municipalities: Real Estate Privatisation

The income of municipalities in Hungary stems mainly from taxation and management of municipal property while business activities of local governments are highly constrained. After the regime change, the personal income tax (PIT) of residents of the settlement was an important source of municipal revenue, but its significance decreased rapidly. In 1990, 100% of the PIT remained in the settlement, in 1991 50%, in 1998 20%, and about 10% in the post-millennium years. In 2013, the remaining part of PIT was completely discontinued (Horváth et al., 2014; Kovács & Tosics, 2014). Municipalities are entitled to levy local taxes such as property tax, public tax, local business tax, and municipal tax. The highest revenue is usually achieved from local business tax. Since it is based on the place of business activity, it is more significant in larger settlements. This taxation system contributed to increasing inequalities between settlement types.

After the regime change, land and housing within the administrative boundaries of the settlements were transferred from state ownership to the municipality. However, management of municipal property meant mostly privatisation of municipality-owned real estate. In Budapest, it was the privatisation of bad quality municipal housing stock with very low rents (a continuity of socialist times). Housing privatisation happened differently in every post-socialist country (Sýkora, 2005). In Hungary, it was realised in populist giveaway privatisation for sitting tenants for about 10% of the market price. Many low-status people could become owner-occupiers and local authorities could get rid of the burden of housing management that produced losses and costs of urgently needed refurbishments. As a consequence, by the late 1990s, close to 90% of housing was owner-occupied in Hungary while most neighbourhoods and even buildings remained socially mixedwhile most neighbourhoods and even buildings remained socially mixewhile most neighbourhoods and even buildings remained socially mixed (Hegedüs & Tosics, 1998). The norm of owner-occupation became prevalent, and, because rural land is cheaper and new settlements can become segregated, suburbanisation was already coded in the new housing system.

In rural settlements around Budapest, the conversion of agricultural land into potential built-up area has been a common practice of local governments (Kovács et al., 2019). New plots were sold to private investors, either individual owners or real estate companies. This type of property management is unsustainable because of the scarcity of land and also because population growth has not only increased income but also expenditure. Decisions about developments were complicated by the fact that it was difficult, especially for the population coming from Budapest, to assess what needs had to be met locally and what they would prefer to return to the city for. Therefore, some settlements attempted to discourage occupancy, mainly by making access to the property more difficult and levying local taxes that adversely affected occupancy (Bajmóczy, 2003; Hardi, 2002). Our research field, the village of Telki, has struggled with these dilemmas in the last three decades.

3. Data and Methods

Settlement development plans and the local journal articles were used to examine the development policy of the local government.

In addition, between 2017 and 2021, we conducted face-to-face and telephone interviews. The length of the interviews ranged from 40 minutes to 1.5 hours. The interviews covered the following topics: motivation for moving to the settlement, characteristics and changes in the settlement (population composition, development, environment, lifestyle, and community life), integration of new residents, networks, functioning of the community, municipal elections, and development of the set-

tlement. In all, 35 semi-structured interviews were conducted (six local government members and 29 residents, including eight NGO members of vigilante, environmental, cultural, educational, and church groups).

Interviewees were selected from different parts of the settlement using the snowball method. When selecting the sample, we paid attention to several aspects: the year of moving in, the composition of the household (single, married, family with children), and the location of the house in the settlement. The type of interviewee (e.g., local politicians, residents) and the number of years the interviewee lived in the settlement are indicated in parentheses after the interview fragments cited. A table with the basic data of the interviewee was attached (see Supplementary File). The data of the local politicians were anonymised to avoid their identification.

The statistical yearbooks by the Hungarian Central Statistical Office (HCSO; 1990–2019) were used to present the social changes; however, for some data types only population census data (HCSO, 1990a, 1990b, 2001, 2011) and territorial data (TeIR, 2021) were available.

4. Results

4.1. The Context of Telki

In the nearly three decades since 1990, the population of the Budapest metropolitan area has grown significantly, and, today, 26.7% of the country's population lives here. As the population of Budapest continued to decline, the population of the agglomeration grew rapidly. As the intensity of Budapest's population decline decreased, the population change of the agglomeration became more subdued. In 2021, 65% of the Budapest metropolitan area's population of 2.6 million lived in Budapest and 35% in the settlements of the agglomeration area.

The agglomeration has six sectors (Figure 1), of which the western and northwest sectors have the highest status. The proportion of graduates is 21% and 24%, while the other sectors' value varied between 8.7% and 16% in 2021. The examined settlement belongs to the western sector as the highest-status settlement.

Telki is located 20 km northwest of Budapest, in Pest County (Figure 2). It can be reached by car in 20 minutes and by public transport in 40 minutes without traffic (with traffic between 55 minutes and 1.5 hours). There is no fixed track transport. The settlement is close to the Buda Landscape Protection Area (a unique forest area surrounding Budapest mostly in the North-Western Sector). According to our survey, in 1999, the natural environment was an important motivation for movement to these suburbs. However, seeking high-ranking housing, like-status neighbours and avoiding the poor (Csanádi & Csizmady, 2002) were also determinant reasons. Their preservation and inviolability of forests are constantly on the political agenda. Many settlements attempted and quite a few managed to endanger its natural areas or nature reserves through rezoning. So far, Telki's local government did not use this option as there was enough agricultural land available for conversion.

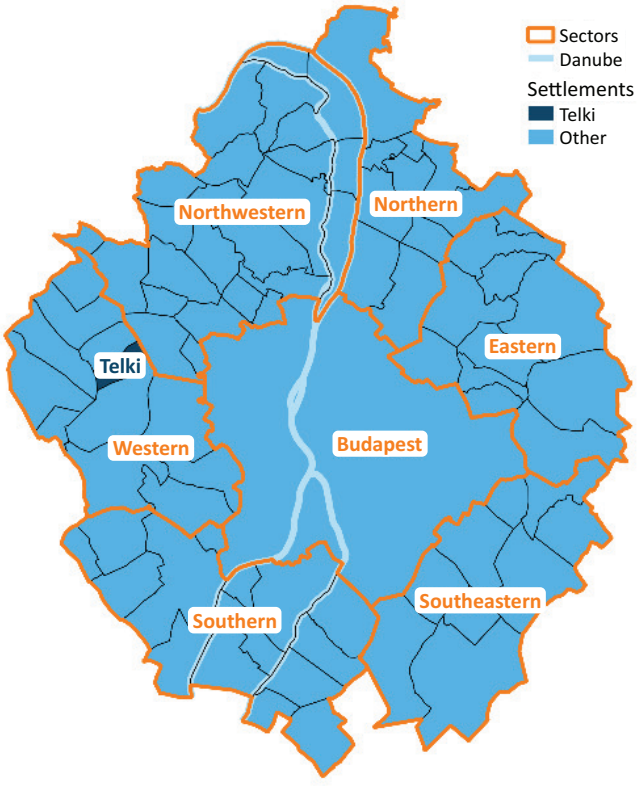

Figure 1. Sectors of agglomeration. Source: Compiled by Botond Palaczki.

Therefore, its wider natural environment can still be considered less affected (Figure 2), in contrast with the areas belonging to Budapest, some of which were rezoned even against the regulation.

4.2. The Development of Telki

During the socialist era, the system of distribution of state resources was not favourable for the village; therefore, there was hardly any development (Bihari, 2004). The local government had decided in the 1990s not to create a settlement with a full range of services, rather the goal was to gain basic infrastructure. The mayor, who has been ruling for three terms, envisioned a settlement based on high-status families of active earners.

The residential area has increased by more than 30% and the population more than sevenfold in the last 30 years. Currently, the local government strives to ensure the maintaining of high status by the continuous control of in-migration of families and active earners.

The status increase in the last 30 years has remained unbroken: In 1990, the proportion of university graduates in the western sector was on average twice as high as in Telki. By 2001, it was the other way around, and, by 2011, it is 1.6 times the sector average (population education level also increased during this period). The status increase is also supported by PIT data (for which we only have data since 1992): Telki's PIT per capita was 0.6 times the sector's average in 1992, and it increased to 1.78 times by 2001. After 2000, it varied between 2.3 and 1.7 and decreased to 1.6 by 2011 and varied between 1.5 and 1.4 until 2019. It remained still higher than the sector average in the whole period.

However, there were differences in the intensity of change throughout the decades. The development policy can be characterised by three distinct periods.

4.3. Political Periods, Planning Phases, and Changes in the Village

The review of municipal measures was linked to election terms. Three periods were studied, and boundaries were drawn based on the change in the composition of the body of representatives so that representatives were the same throughout each period (this resulted in periods of varying lengths). This composition, as we present it, has a significant impact on the policy measures. The foci of the measures vary considerably in each period. During the last period, there has been no further significant change in leadership.

4.3.1. First Period: 1990–2002

The primary goal was to build basic infrastructure and public services, but the financial conditions were not given in 1990. Almost no state subsidy or local taxes were available. Due to the poor financial situation of the population, the PIT remaining locally was not significant and there was no possibility to raise it. The leaders had to search for other resources and spotted the emerging opportunity in the first wave of residential suburbanisation catalysed by privatisation (Csanádi & Csizmady, 2002; Hegedüs et al., 1993) and attracting higher status people:

> Back then, it used to be a conscious strategy by the local government in the early 1990s to attract wealthy people here and then develop the settlement from it… (I16)

Income was generated by the reclassification of former agricultural land, dividing it into building plots and selling those on the market. The risk that this development policy would lead to a transformation of the settlement, in the long run, was taken into account and was considered as acceptable collateral damage. The goal of creating a more modern, liveable, and richer settlement was feasible only at this price. This was typically accepted by the natives living there at that time too:

> In the first half of the 1990s or in the mid-1990s, the village leadership at the time recognised the process of moving to the agglomeration and saw what significance it would bear….It was a village of 600 people at

Figure 2. Geographical location of Telki. Source: Google Maps.

> the time of the regime change…so we were a small village, without any contact with the neighbouring settlement. And…the village leadership at the time did well enough…and, as a result, the settlement has grown to be multiple-fold of its former self. (I21)

The population increased 3.5-fold between 1990 and 2002, from 629 to 2,211 people. The age structure was younger than the national average in 2002 (more than 20 years of age: 29.8%; 60 or more years of age: 11.2%). The in-migrants were more educated, which raised the prestige of the settlement. The proportion of people with at least secondary education increased to 2.5-fold (among a population of 18 or more years of age: 27.8%, in 1990, and 69.1%, in 2001). The proportion of graduates increased to 6.6-fold (among a population of 25 or more years of age: 6.0%, in 1990, and 40.1%, in 2001), which is a remarkably high proportion in the agglomeration.

The village visibly developed but was already clear that this pace of growth was unsustainable and it could destroy the features of the village that actually attracted new residents (see Váradi, 1999). Residents also voiced their criticism. In 1994, it was expected that Telki could have around 2,700 residents and growth stopped at that point (Nánási, 1994). However, currently, the village has more than 4,000 residents.

4.3.2. Second Period: 2002–2006

An integrated settlement development plan was adopted in 2004 (Telki Local Government, 2004), summarising challenges faced by the settlement due to suburbanisation, and other factors determining future opportunities. The local government decided to stop the inclusion of arable land in the residential area to be able to control and slow down the further growth of built-up area and population ("Telki Napló," 2005) to preserve the rural character and to satisfy the numerous new needs and demands regarding services at the same time.

However, to grant resources to operate and develop the village, on the one hand, implied selling lands already classified as construction plots in the previous period:

> Their activity [i.e., that of the local government in the late 1990s] was basically exhausted trying to involve more and more areas to increase the size of the residential area through real estate development. (I20)

On the other hand, they continued to raise its appeal, especially for the high-status residents of Budapest. Examples for this are renewal of the village centre in 2005 or the further development of basic infrastructure and services. It also included the expansion of the primary school built in the 1990s and introduction of bilingual education. Even the construction of a swimming pool was considered. However, the development of commercial functions that could have been useful for those who do not have a car, do not commute, or do not want to commute to the city every day was neither supported by the newcomers or by the leadership of the village.

Although the population continued to grow, the rate of growth slowed down slightly (an average of 250 movers per year between 2001 and 2006). At the same time, the rate of out-migration has also increased (Figure 6). Migration gains averaged only 77 per year. In the agglomeration, this village had the highest reproduction rate (one per cent/year per thousand inhabitants), the youngest (15 or fewer years of age: 27%; 65 or more years of age: 6.9%) and the richest population.

Housing construction was of outstanding intensity compared to other agglomeration settlements (2002–2006: 393 new dwellings); larger dwellings than before were built (between 179.7 and 218.4 m^2).

This development policy was widely criticised. The municipal leaders of the next term (second period) saw this model as unsustainable in the long run. In fact, sufficient money was obtained for the development from the sale of the plots, but this contributed to the growth of the population and thus was accompanied by new development needs and an increase in the operating costs ("Telki Napló," 2005). Residents also voiced their opinions more and more strongly and demanded a slowdown in population growth. The direction of transformation was pushed not so much towards a small Hungarian town rather in the direction of an ideal village in Western Europe:

> This changed after 2000….We want a Western European village; we want an Austrian-style village. (I21)

Among other things, this municipal policy led to the change in the local government in 2006.

4.3.3. Third Period: 2006–2020

After a sufficient number of well-off residents moved to the village, it was now possible to base the operating expenses on local taxes. Due to the decrease in the local share of PIT, local taxes were introduced such as building tax, land tax on undeveloped properties, and local business tax. However, the latter was not significant because of the restriction of industrial activity. When planning the tax decrees, special care was taken to make sure that the settlement did not lose its competitiveness and attractiveness due to new taxes, and that there were no higher taxes locally than in the surrounding settlements ("Telki Napló," 2006b). At the same time, subsidies for residents were abolished. These changes were disadvantageous for original residents and early in-movers.

Since the regime change, the leadership of the village have deliberately kept the high-traffic industrial and logistics sectors away from the settlement. However, a business tax was needed to develop the settlement. The direction of development has shifted towards sports

and leisure services as well as the leisure industry, due to the protection and preservation of the natural environment. The sports centre and a four-star sports and wellness hotel built by the Hungarian Football Association were approved in 2009, and they will be expanded significantly with government support in 2022. It is used by top football players and for youth training. After that, sports facilities, playgrounds, as well as a gym were built for local users.

After 2010, the settlement received more grants from the state and the EU than in previous periods, which enabled to finance the developments. In addition, the municipality has also started looking for ways to develop tourism. However, this would only be achieved through joint developments with the surrounding settlements. The first steps towards joint planning have been taken; a bike path was built. The new settlement development plan (Telki Local Government, 2015) proposed supporting the start-up of local businesses to provide employment opportunities for highly qualified residents.

By the end of this period, the number of companies has increased significantly (506, in 2006; 1,036, in 2018). The building and property tax per square meter has not changed since 2007. The business tax revenue rose and reached the level of construction and property tax by 2019. The local government wanted to increase revenue by increasing the building tax in 2020, but the measure has been postponed due to the Covid-19 pandemic.

In this period, residents begin to refer to further growth as unfavourable (I4, I17, I18, and I29):

> Well, now there's a big wave of in-migration. That, for example, is a negative issue….We had been hoping to avoid this situation, but, unfortunately, we couldn't. (I4)

Population growth, accompanied by more externalities, revealed the disadvantages of the suburban location. However, dissatisfaction did not turn into protest. This was largely due to the underdevelopment of the Hungarian civil society. Those who were dissatisfied moved further to another settlement with a more pleasant physical environment or possibly moved back to Budapest. Figure 3 summarises the three periods.

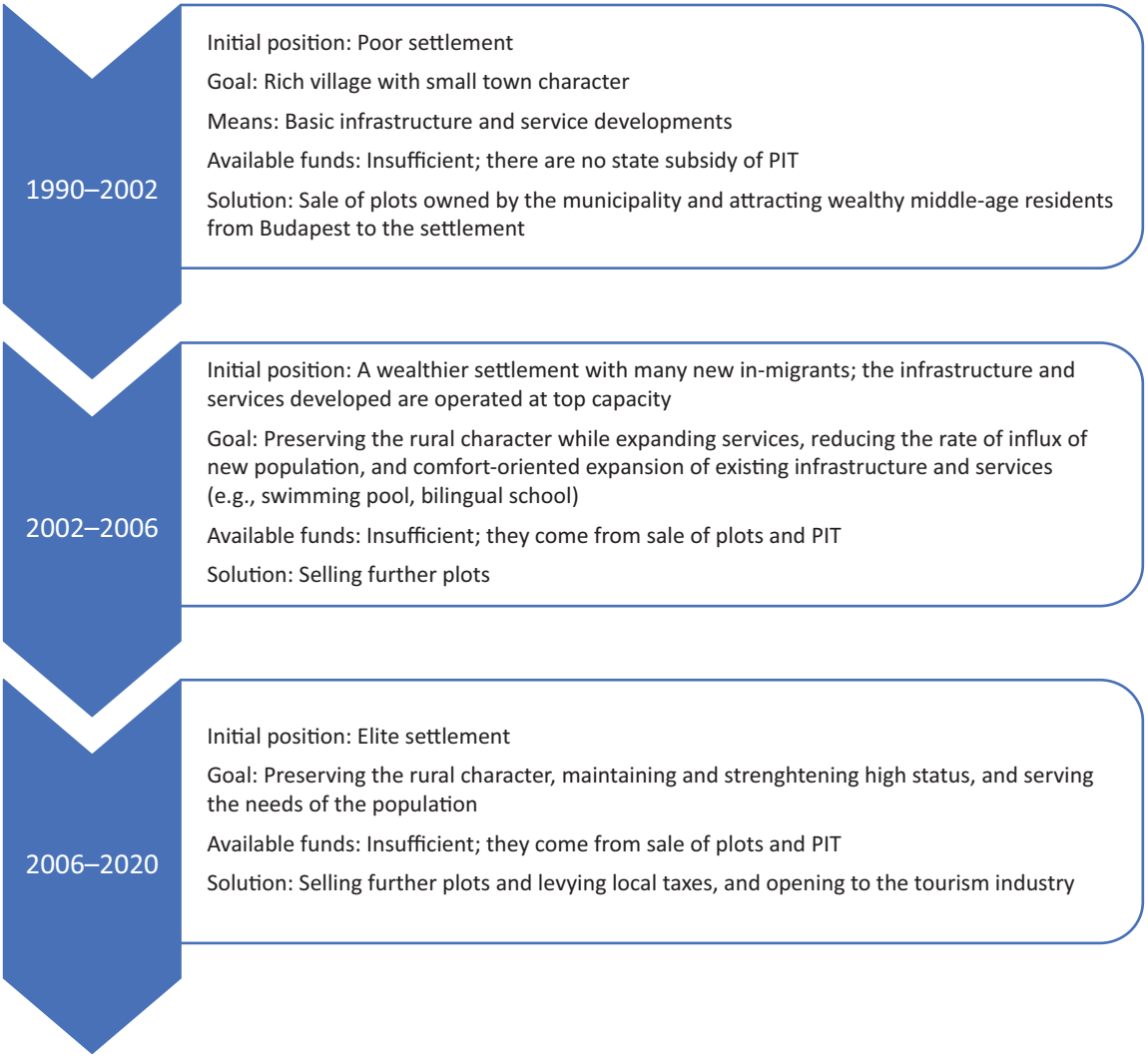

Figure 3. The goals of the local government and the funds allocated to the goals in the three periods under review.

5. Conflicts: Politically Controlled Privatisation, Colonisation of the Village, Extreme Segregation, and Lack of Cooperation

5.1. Politically Controlled Land Privatisation

In an underfunded environment, the only means consistently available to the settlement has been the conversion of farmland into building land. In 1990, the proportion of built-up area was 7.6%, which rose to 25% by 2018 (Figures 4 and 5). The main source of rezoning was agricultural land, which decreased from 53.4% to 30.8%. The area under natural protection remained intact and even increased slightly.

Besides being an unsustainable solution, the conversion of agricultural land into building plots and selling the plots allegedly involved corruption. The mayor and members of the council, who presented the selling of the land as a solution for everyone to have basic infrastructure was also personally motivated in this process. The local political elite was aware of which agricultural land would be converted into building plots and when, and they and their business partners bought just the right plots:

> Let's say that the leadership of the village had a good business with the conversion of the land. (I20)

> They were buying smart, they converted their own land and then sold it. They were well informed and they had social capital. (Linder, 2006)

As we explained earlier, this political control over privatisation and possible personal economic benefits gained

Figure 4. Telki and surroundings. Source: Photo by M. Bagyura.

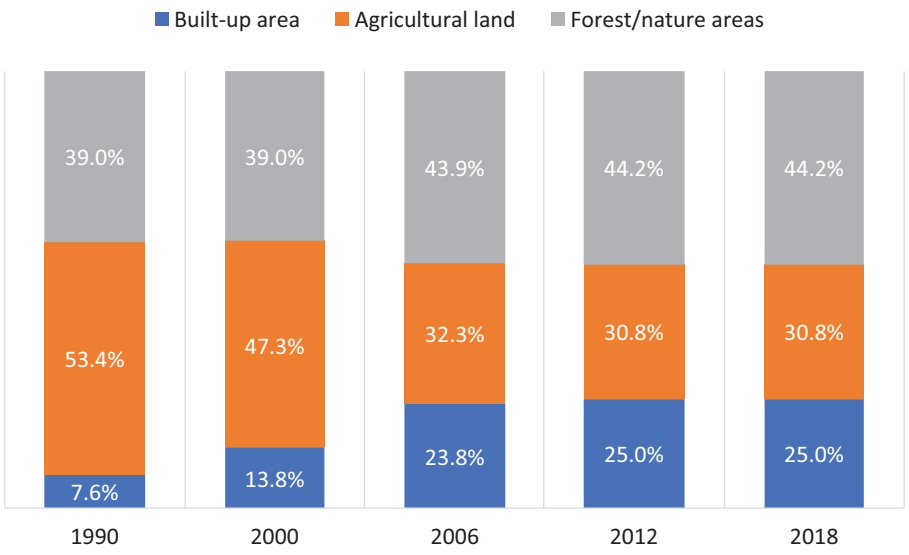

Figure 5. Rezoning. Source: Compiled by the authors based on TeIR (2021) data.

by politicians and related networks is a central element of the post-socialist transformation.

5.2. Colonisation of the Village

The wholesale of land was successful, and Telki was mentioned in the press as a "wonder village" ("Telki, a csodafalu," 2000). However, behind the propaganda of success, there were inherent conflicts between the original villagers and newcomers. Since the number of newcomers exceeded the population of original villagers, they were able to seize political power in 2002.

First, there was the tension caused by growth. According to our interviews, some of those who moved to the settlement between the early and mid-1990s formulated strong criticism (I11, I12, I15, I24, I25, I30, and I35) on the effect that the rural character, community life, and the former way of life were endangered due to the increase of the built-up area and the size of the population. Our results agree with the results of Váradi (1999):

> When we moved here, this settlement was like a quiet village at the end of the world. There was so little traffic that if a car drove down our street I knew it was coming to see us….It was so good. And then suddenly it grew. (I35)

> I would have wished our village had stayed the way it was. I prefer the old village, I prefer [it] a little more intimate…if it's a village, then it should look like a normal village….But I'm not happy that they're building a condo, for example, I'm not happy at all, but money talks. (I24)

Another example is the development of commercial functions. An international company (Spar) even bought the land and the original villagers and the earliest suburbanites (arriving before or only shortly after the regime change) were in favour of commercial development. However, people who arrived later were afraid of increased traffic and collected 69 signatures against the investment. This was apparently enough to drop the plans for the commercial development.

The original villagers without cars and actual connections to Budapest were in favour of these and similar developments, but their political representation was weaker than the newcomers'. The high-status newcomers started to organise themselves already in the late 1990s and established the Circle of Telki's Friends to control the development of the village. They were not able to seize power immediately, but they could already prevent developments on the side of the village that was closer to the forest and where the pioneer suburbanites lived.

The change in taxation policy and the abolition of municipal subsidies for locals also caused conflicts. According to the statement of the new mayor, the local population did not need these subsidies due to their otherwise good financial situation ("Telki Napló," 2006a). This was of course only true to newcomers, but local politicians recruited from their circles were not even considering the interests of others.

Tax policy has not affected old and new residents alike, fuelling conflicts between them. New wealthy in-migrants had no problems paying their taxes due to their high incomes. However, among original villagers and those who moved in before or around the 1990s, there were several low-income, retired, farming households. For those with arable land, property tax also meant a double burden:

> New residents had nothing but their houses. This imposed taxes and other burdens on the elderly and people with a low pension, which was difficult or impossible to bear. (I33)

After the newcomers seized local power, besides directions for local development and taxation, the general way of life in the village was very strongly regulated. The former rural way of life was effectively banned, which enraged the original residents:

> Now you are not allowed to burn anything [agricultural waste] in Telki. And then the quiet hours. When the…lawnmower can be used, how dare you [use the lawnmower]!….So this constant nothing is allowed….Why [does] the neighbours' rooster crow? (I5)

5.3. Extreme Segregation

Original villagers were not the only ones unwelcome in their own settlement. Because of the restricted functional developments, the *local community* today only means the community of parents with small children:

> If I ever participate in programs, it's only because of the kid. We both work in Budapest, which means 3–3.5 hours [of commute to Budapest]. (I29)

> Here children bring together parents….We have one kindergarten, and then one primary school. (I11)

But if children are older, this feeling of community ends:

> The truth is that since the children are grown up, and they are not connected to the kindergarten or the primary school, it is harder for us to follow these processes [concerning the village] directly. (I29)

The restriction of functions and the community based solely on childbearing is an acknowledged and conscious policy today. Telki is a "sleeping settlement." However, this also means a large fluctuation of residents. Most who leave this life behind move away:

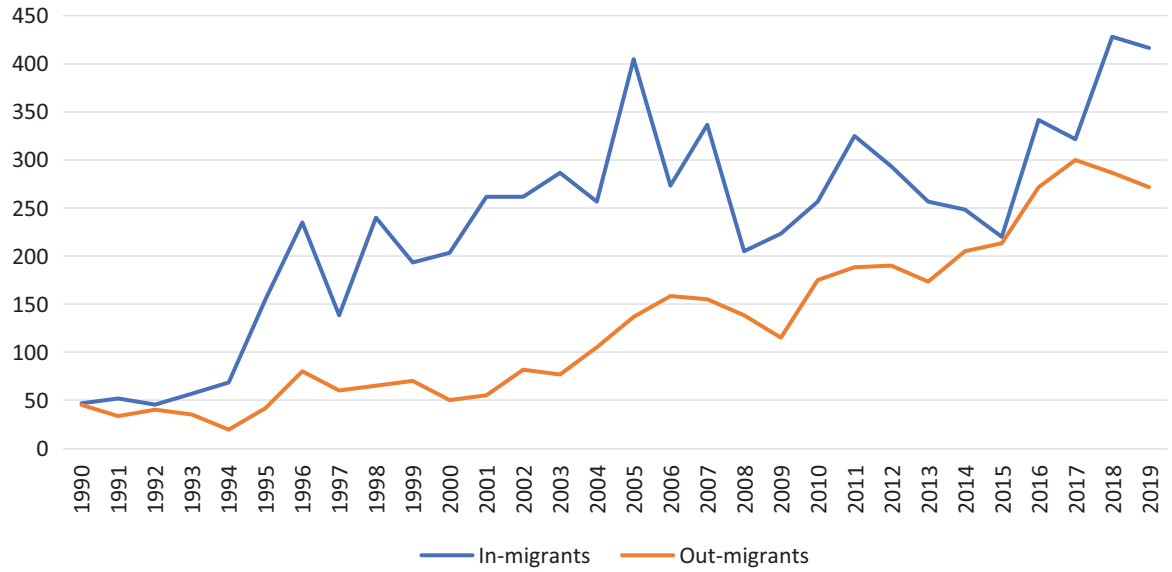

Figure 6. Number of migrants to and from Telki between 1990 and 2019 (in person). Source: Compiled by the authors based on data from HCSO (1990a, 1990b, 2001, 2011).

> The truth is that it's hard to organise a community because this is only a temporary residence. (I29)

> As there are port cities…I call this a nest settlement….They raise their children, and then they go back to the city. (I19)

As there are many movements, the control of who moves to the village became very direct. Already in the 2000s, council-owned land was sold only after a successful interview:

> When they came here to buy the plot from the local authority they were properly interviewed, like who they are, what are they doing. They were almost security screened. And there were some who were not allowed to buy a plot here. (I26)

The extreme segregation of the village was, however, actually welcome by many newcomers who were already looking for a segregated place:

> And, well, there shouldn't be gipsies [in the chosen suburb]. This is crucial, so places like Páty and Érd are already excluded. (I17)

5.4. Conflicts Instead of Cooperation

A good example of why cooperation is limited by opportunities for corruption is the story of the planned "Golf Village" in the adjacent village of Páty. In 2002, the original development plan was a golf course, a few apartments and a commercial building, but the local development plan of Páty made a much larger investment possible (Tünde, 2009). After the council of Páty gave the green light, the plans were modified and a whole new settlement would have been built with 2,000 new apartments, a conference centre, a school, and a kindergarten (Tamás, 2012; "Telki Napló," 2009). The development would have been far from the centre of Páty, but right next to the newly built, high-status area of Telki.

A developer would have placed a new village right next to Telki, and Telki had no legal or political possibility to prevent this. The only chance was to raise awareness, organize demonstrations, and seek legal supervision. There were huge conflicts in the council of Páty, but the majority of local politicians still supported the plan despite demonstrations and even against a local referendum. However, the referendum was invalid due to low turnout in Páty, while residents of Telki were not allowed to vote on this issue (Wirth, 2010). Finally, the Páty council revoked the local building regulations, but before that, local politicians and activists in Telki and Páty were even threatened. The Spanish investment partner of the project Sedesa withdrew after its corruption cases appeared in Spain (MTI, 2010).

It is quite telling how the mayor of Páty commented on the case: "As it is usual in Hungary, the investor was chased away" (MTI, 2010). Even if local infrastructure had been absolutely overloaded, voters had opposed the development, and bitter conflicts had emerged with neighbouring settlements, the mayor was still convinced that the investment was needed (MTI, 2010). Knowing the Hungarian reality and the company Sedesa, it is very probable that he was convinced by corruption.

6. Discussion and Conclusion

We claimed that the post-socialist institutional transformation and its ongoing consequences have a determinant role in how suburbanisation is governed around Budapest, and also in social problems and conflicts

caused by this process. Suburbanisation here can be labelled as a hybrid of self-led and private-led development because the real estate investment was limited and long-term economic rationality or state-level economic growth was not prioritised. To support these claims, we used the following findings in the literature and in our research.

First, the high-level municipal sovereignty of settlements and lack of coordination and cooperation of sovereign settlements was a political reaction to the centralised development decisions under the state socialist autocracy. However, the high level of sovereignty was balanced by a lack of resources, constantly decreasing funding, and later a withdrawing of responsibilities and decision-making power. How municipalities operate was only determined by political rationalities and not by ideals of resource allocation and economic development (Kovács, 2020), similarly to territorial development (see Varró, 2010). A good example of that is the division of the city of Budapest into 23 independent municipalities. Similarly, cooperation between Budapest and the suburban settlements and within the agglomeration is also against the short-term political interests of national governments in Hungary.

Second, the privatisation of state-owned assets was far from market rationality, and corruption was inherent in the process with ongoing consequences today. The give-away privatisation of municipal housing resulted in an extremely high level of owner-occupation, and in socially mixed condominiums and neighbourhoods. This explains the popularity of suburban housing among high-status groups in a highly segregated, exclusive village even if traffic and other infrastructure and local services were missing. It also explains the hostility of high-status groups against the development of services in the village (to preserve its exclusive status), and their ruthlessness against the original villager's way of life and the poor after they colonised the settlement.

Meanwhile, corruption and lord-vassal relations between political power and businesses also mean that, to a large extent, political decisions are made in the personal interests of politicians and their circles and that *politics* became a dirty word (see Gille, 2010). Systemic and normalised local political corruption and cooperation between sovereign municipalities virtually exclude each other, as the case of the planned golf village of the adjacent Páty has shown. When local politicians are personally interested in the reclassification of agrarian land into residential territory or simply banning lifestyles they do not want to see, contesting these decisions is much harder, especially in the political passivity or co-optation of the post-socialist society. This also made it possible for a large number of newcomers to settle in the village and seize political power to defend their interests against the original residents'.

The hollowed-out municipal sovereignty in Hungary set a very narrow path for local authorities. On the one hand, local power had the right to turn the village into an exclusive low-density gated community and hand-pick buyers of municipal land. On the other hand, local authorities are dependent on private investments. And still, political decisions about real estate investments and their regulations are not necessarily determined by business interests and long-term economic growth as in the ideal type of private-led suburbanisation. In the case of Telki, the only political rationale was high-status self-segregation. The results of this policy are a high fluctuation of residents, long and unavoidable commutes to the city, and only a temporary feeling of community solely based on the upbringing of young children.

Far from a success story, the case of Telki shows the effects of post-socialist privatism (Hirt, 2012) without any political control from below or above. The propaganda of success around this anti-social and unsustainable development process in the press and even in the social scientific discourse is a symptom of the lack of solidarity and responsibility in post-socialist Hungarian society.

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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).

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Article

When Modern Housing Built Optimistic Suburbia: A Comparative Analysis Between Lisbon and Luanda

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Abstract
Throughout the 1960s, the urban peripheries in several Portuguese colonial cities embarked on a profound process of transformation. With different urban histories and distant geographical contexts, Lisbon and Luanda were united by urban planning and public policies defined by the Estado Novo's response to the lack of housing supply. The neighbourhoods that expressed modern affiliation in their architecture witnessed profound changes brought about by the April 25th Revolution and the consequent process of democracy in Portugal (1974) and independence in Angola (1975). This article proposes a comparative analysis of middle-class housing complexes, demystifying the urban peripheries by an optimistic architecture that helped shape the built environment and echoed its time's urban and political concerns. It analyses four case studies, taking into account their inherent characteristics (urban layout, architecture, and interior design), their significance as a testimony to the social and political aspirations of the time, and the quality of life and lifestyles of their current population. It draws on sociological surveys and analysis of plans, photographs, and maps to carry out a broader picture of modern housing through the work of Fernando Silva in Lisbon and Fernão Simões de Carvalho in Luanda. Based on current research, this article aims to assess the resilience of these neighbourhoods by analysing the housing landscape from an urban and architectural perspective. By mapping the changes after 50 years of use, the intention is to understand how they have adapted to current conditions (urban and social) and support future actions.

Keywords
Fernando Silva; Fernão Simões de Carvalho; Lisbon; Luanda; modern housing; optimistic architecture; Portuguese heritage

Issue
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1. Introduction

As an outcome of the Second World War, the modern movement had the assignment of building a *new society*, promoting an *international style* intent on applying *standardised* models in the construction of large housing estates. The future was envisaged as something better than the present, with the home being the architectural canvas through which personal comfort expressed domesticity and elegance. With its epicentre in Europe, modern principles were implemented in Portugal and later projected in Angola. From the 1960s onwards, the collective housing block became a crucial element in suburbia's growth in Lisbon and Luanda. Vertical density, modern urbanism, and international architecture became synonymous with collective housing; the site's surroundings were planned as part of a new narrative between building and landscape, as a symbolic and functional affirmation of turning utopian dreams into reality. The industrialisation of construction processes made it possible to define solutions for environmental comfort and sustainability in housing, taking new forms, resulting from geopolitical forces and realities in both territories. At the same time, the middle class that no longer wanted to live in the city centre was looking for other ways of living more comfortably in the suburbs. Although relatively short, the modern period coincided with late Portuguese colonialism, cementing their relationship until 1975. The transition to independence occurred later than in any other country in Europe

and forced Portugal to redefine its relationship with its colonised territories over time. The same military coup d'état that led to the end of the autocratic regime that had ruled Portugal for over 48 years also marked the end of colonial occupation in Africa, leading to democracy and independence.

During this period, architecture played a compelling part, taking two different architectural paths that do not oppose each other but are distinct on a formal and programmatic level. The official policy became more evident with the opening, in 1944, of the Gabinete de Urbanização Colonial (Colonial Urbanisation Office) by the Ministry of Colonies, led by Marcello Caetano. The Colonial Urbanisation Office was used as a vehicle for modernising and simultaneously homogenising the built landscape in the colonial territories according to the ideals of the Estado Novo, the name of António de Oliveira Salazar's autocratic regime. Furthermore, it was also when members of this planning office visited the areas to be planned as part of the plan-making process. At the same time, as an outcome of the First National Congress of Architecture in Lisbon in 1948, a group of architects affiliated themselves with the modern principles proclaimed by the Congrès Internationaux d'Architecture Moderne (CIAM). Some architects and planners later travelled to the Portuguese African colonies (Fernandes, 2002; Milheiro, 2012). After the course of their architectural education at the Schools of Fine Arts (Lisbon and Porto), a small group continued their studies through international training at institutions such as the Architectural Association in London or the Institut d'Urbanisme de l'Université de Paris. This was the case of Angolan architects such as Vasco Vieira da Costa and Fernão Simões de Carvalho who, after apprenticing at Le Corbusier's studio, set off back to Angola. Others emigrated (or fled) from Portugal, such as Francisco Castro Rodrigues, who devoted himself to the language of modernity in his work as an architect until after the end of the colonial period and the civil war that began thereafter.

In some way or another, these architects were responsible for transforming Luanda into a huge urban-architectural experimental laboratory for Western modernity, reflected in global visions of urban and territorial transformation with housing at the core of the challenges involved (Rodrigues, 2015). Modern architecture challenged the canonical architecture championed by the Estado Novo; however, by being subordinate to the official legislation of Salazar's regime, it inevitably led to urban processes that could not hide their colonialist vision and the subsequent segregation of local populations. Still, the commitment of some modern architects, even in the role of coloniser, led to projects that revealed an interest in applying modernity for the benefit of the most disadvantaged society, including approaches to local communities such as the interventions built in East Africa by Ernst May. The German architect did valuable work in building affordable housing for socially and economically disadvantaged population segments. The implementation of industrial methodologies in solving the question of urban housing for African populations and the use of concrete and modern materials in the evolving housing typologies show the apparent compatibility between modern linguistic solutions in architecture and the focus on comfortable housing for European and local populations. This does not mean that the colonisers were passive actors; on the contrary, they managed to bring modernity occasionally closer to local realities. As a case in point, it is worth analysing Simões de Carvalho and Pinto da Cunha's plans for the Bairro dos Pescadores (Fishermen's District, 1963–1965). The architects envisioned the island as Luanda's future major tourist and recreational area to create new residential neighbourhoods that would contribute "to the social stability of the native group" (Carvalho & Cunha, 1963, p. 1) for the resident fishing population, the "Axiluandas." In this case, the architects carried out surveys of the fishing population to study traditional construction methods, and local housing types were adapted to the functional and linear logic of the modern project (Rodrigues, 2021, p. 279; Figure 1).

This article seeks to understand how the presence of modern housing estates on the city's outskirts became recognisable through the implementation of specific technical, functional, and visual elements. The recurrence of side-by-side buildings or volumes

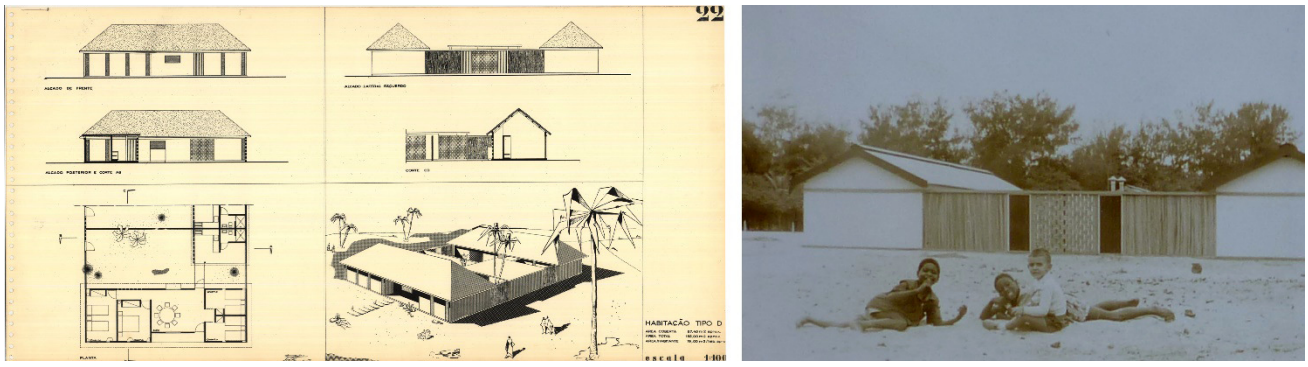

Figure 1. Fishermen's District in Luanda: Housing type D (left) and model houses (right). Sources: Carvalho and Cunha (1963; left) and courtesy of Fernão Simões de Carvalho (right).

arranged within green landscaped plots, an abstract architecture, and accentuating architecturally horizontal elements through the repetition of standardised features attributed a strong and clear identity to modern middle-class neighbourhoods. This article has been adapted from broader research projects, such as Homes for the Biggest Number: Lisbon, Luanda, Macao and the ongoing Middle-Class Mass Housing in Europe, Africa and Asia (ISCTE–IUL) to identify paradigmatic housing complexes in Lisbon, Milan, Antwerp, Luanda, and Macau. To substantiate my argument, I will analyse four case studies of projects designed for middle-class populations during the 1960s. The starting point was to identify dense residential estates which were used as models in the urban and architectural plans for other similar operations: Neighbourhood Unit No. 1 of the Prenda neighbourhood in Luanda (started in 1963) and Portela de Sacavém in the Lisbon Metropolitan Area (begun in 1964). The first was a municipal urban project that sought to wed modern architectural residential needs to the interests of private entities. It was adopted as a model by Simões de Carvalho, despite Angola's independence which would later put a stop to this goal. In Lisbon, the pioneering spirit of Portela would be proven by a series of later initiatives in which Fernando Silva was involved and also by the replication of its organisation by other architects and developers operating in the Lisbon Metropolitan Area up until the 1980s (Ferreira, 2010).

Even though they were pursuing different professional careers, the architects Fernando Silva in Lisbon and Fernão Simões de Carvalho in Luanda had the same experience acting as coordinators between municipal real estate plans and private promoters to build the housing complexes. Both architects incorporated similar experimental planning solutions into their projects. The last neighbourhood unit designed by Simões de Carvalho in Luanda was the Portuguese National Postal Service (CTT) neighbourhood (1968–1974). In parallel with his experiences in the Portela district, Fernando Silva implements some of his characteristic architectural principles in housing in the Alto da Barra Neighbourhood (1962–1976), on Lisbon's western periphery. When its inhabitants turned their backs on the historic city centre due to its insalubrity and decline, it led to a "radiant" moment for the peripheries. Was it coincident with the beginning of the optimistic suburb era in Lisbon? Projected as an entirely modern residential unit, could colonial neighbourhood-built homes engage with the traditions of the local population? Are the current residents comfortable living in dwellings inherited from the colonial era?

Providing a written overview of the residential complexes, research into the quality of life for current inhabitants is introduced with a sociological approach based on questionnaires and qualitative interviews to assess residents' social satisfaction. In collaboration with Angolan researchers, this allows us to map out a broader mosaic of modern housing in Luanda. And yet, as Rossa (2016, p. 114) pointed out, "the non-recognition of the cultural value of Portuguese-influenced heritage by natives is in itself also a colonial legacy and therefore must enter into the equation." The aim is to map the shared modern heritage, finding similarities and differences in the construction of the first residential neighbourhoods on the outskirts of Lisbon and Luanda, demystifying the negative perception of mass housing based on a clichéd perspective of life in the suburbs. With this approach, we hope to contribute to the postcolonial analysis while expecting that the outcomes can influence decision-making about the demolition, revitalisation, or reuse of these residential complexes, in response to an age of planetary crisis in which a precarious present reflects an inequitable past and a challenging future.

2. Building the Urban Periphery of Lisbon and Luanda

Between the 1960s and 1970s, Luanda and Lisbon saw the emergence of several residential complexes that had a shared matrix: privately developed high-rise buildings aimed at the middle classes and located on the urban periphery. The two cities had different urban histories, despite Portuguese political and administrative control serving as a common denominator to define parallel housing strategies. The context under which each project was designed and built was also very different, giving an insight into the work conditions that prevailed in both regions at the time—at the design level and in terms of urban planning and construction (Milheiro et al., 2018). Different authors (Rodrigues, 2015; Silva, 2015; Tostões, 2013) argued that the post-Second World War period was also characterised by an intensive transnational flow of planning ideas, as in previous decades. The openness to modernity of Salazar's dictatorial regime came as a response to international pressure. In 1951, the revision of the Constitution paved the way for the promulgation of new laws on different aspects of colonial policy, including those related to urban affairs (Silva, 2015, p. 12). In 1960, the United Nations approved the Anti-Colonialist Declaration, and Portugal found itself increasingly isolated. With the beginning of the struggle for independence in Angola in 1961, Portugal's position became even more fragile. From 1966 onwards, the Portuguese government ordered colonial governors, such as in Angola, to regularly organise conferences on engineering and architecture in the respective colonies to produce recommendations to be applied in both fields (Silva, 2015, p. 13).

An undeniable fact was the inefficiency of the public infrastructure in responding to the different housing needs in both cities. Aware of this situation, the state opened up the private property market to construct large residential neighbourhoods. Another critical factor was the creation of the horizontal property regime in Portugal under Decree-Law No. 40333 (14/10/1955), which was applied with some minor changes in Angola under Order No. 15984 (6/10/1956). However, the major

innovation was to invest in high-end construction on the urban peripheries, hoping to attract an emerging middle class. The private sector took the lead in providing housing in the suburbia of both cities, but the role of the public sector was not passive in the early urban planning stages. While mass housing has been the preferred model for urbanising the peripheries, it has come with a certain negative stigma inherited from its worst examples, such as Pruitt-Igoe in Missouri. Insecurity, rootlessness, anonymity, and the repetitiveness of dormitory city life are among the foremost contemporary stereotypes of mass housing on the outskirts (Dufaux & Fourcaut, 2004; Tauton, 2009). From Portuguese, the word suburbia has diverse interpretations and uses on these two continents; it has had implications for the periphery, the non-urban, and a hierarchy of social division of space (Mabin et al., 2013, p. 168). Within this scope, understanding the urban context developed by the state to provide adequate mass housing solutions is sought by analysing four residential estates in Lisbon and Luanda.

2.1. From Collective Housing to Planned Suburbs: The Prenda Neighbourhood in Luanda and the Portela District in Lisbon

Like many other cities, throughout the 1960s, Luanda was overcrowded, a result of extraordinary demographic growth due to the colonial war and the central government's incentives for European colonisation, having increased from 224,540 inhabitants in the years before the war to 475,328 in 1970 (Amaral, 1960). This is the more visible outcome of the Estado Novo's migratory policies that, after the Second World War, and facing increased international pressure from the United Nations, encouraged settling a European, mainly middle-class population (Milheiro et al., 2018). The city's high demand for private investment was initially hampered by the lack of a planning instrument that regulated new construction, a gap that the creation of the Luanda Planning Office sought to fill. At that time, Fernão Simões de Carvalho, head of urbanisation of the city of Luanda, advocated for a good relationship between the central road system and the city's key feature—the neighbourhood unit—announcing his futuristic vision of a "Luanda of the future" (Carvalho, 1963, pp. 27–29). Faithful to the Athens Charter doctrine, the neighbourhood units were interpreted as city design elements, avoiding excessive zoning well located and integrating different types of populations, establishing themselves as a growth model for the new areas of expansion of the city.

The Luanda Planning Office benefited from the experience of Carvalho, who had specialised in urbanism at the prestigious Institut d'Urbanisme de l'Université de Paris. Here, the presence of Robert Auzelle, whose principles contradicted the tabula rasa of the Athens Charter, was key, giving importance to the contextualisation of socio-economic and demographic factors in an integrated, technical vision. As an architect, Carvalho worked at André Wogenscky's atelier, an offshoot of Le Corbusier's firm, which gave him valuable practical knowledge in the area of modern housing. Besides his professional experience, Simões de Carvalho, born in Luanda, knowing in advance the difficulties of proposing a completely multi-racial neighbourhood, suggested a differentiated approach, building residential slab blocks and towers for a colonial population and a second housing proposal—single-family houses—designed for the local people that already inhabited the area. Combining these two socio-economic groups would make the city more racially integrated, according to the architect's vision. Therefore, the city required a growth strategy that allowed for the accommodation of these new inhabitants. To this end, planning strategies begin to be put together seeking, on the one hand, to solve the issue of the newcomers, and, on the other, the resident citizens', mainly the Africans located on the outskirts in makeshift, unofficial neighbourhoods—the *musseques*. In line with urban planning strategies, the municipality of Luanda fostered public-private partnerships for the completion of major housing projects (Correia, 2018, p. 147). Simões de Carvalho suggested exchanging municipal land in the centre to expand new residential areas in the suburbs by attributing construction to private companies, stressing the importance of applying modern theory to the dynamics of real estate construction (Carvalho, 1963a, p. 28). The aim was to encourage private developers to exchange building permits on small plots of municipal land with greater development potential in the suburbs, using the urban plans developed by the City Council. Each developer or group of developers was then responsible for hiring the architects, who prepared their architectural projects based on the respective urban plans (Amaral, 1968).

For the Prenda Musseque, as an urban expansion strategy to the south, a city with a total area of 337 ha was planned, with an average density of 150 habitants per hectare and an estimated population of 50,000 inhabitants distributed across five neighbourhood units. Besides the residential complexes, it included the planning of roads (15% of the total area) and public open spaces with school amenities taking precedence (official primary schools, private primary schools, technical schools, and secondary schools for each of the neighbourhood units; Correia, 2018, p. 182). In addition, a health centre, a cinema, a chapel and shops for daily needs, open and wooded areas, and playing fields were planned with places where "space, sun and nature" (Carvalho, 1963a, p. 28) fostered the individual's sense of self-sufficiency. Neighbourhood Unit No. 1 of the Prenda District was the one whose construction was seen through somewhat to completion, the most successful example in terms of construction among all proposed neighbourhood units in Luanda. Drawn up by the City Council's Urbanisation Office between 1961 and 1963, Simões de Carvalho and co-author Luis Taquelim da Cruz designed it as a sustainable urban settlement

unit which was self-sufficient, based on three basic principles: hierarchy, zonification and racial integration, to reinterpreting the Athens Charter and approaching the notion of cluster or, in Carvalho's words, "unit," "neighbourhood," or "sector" (Rodrigues, 2011, p. 146). By consolidating modern architecture as the leitmotif of these new residential areas, Carvalho's team intended a ratio of two-thirds native population and one-third European population but actually ended up with the opposite proportion. The architect developed a series of urban strategies and sourced specific architectural features and prefabricated materials that could be applied to the various types of housing, public spaces, and amenities to foster a sense of neighbourhood community interaction among residents. The Corbusian hierarchy of the seven road types organised the flow of the entire unit. In the centre, public facilities could be found, with direct access to the shopping street, offering residents the opportunity to get valuable exercise (Figure 2).

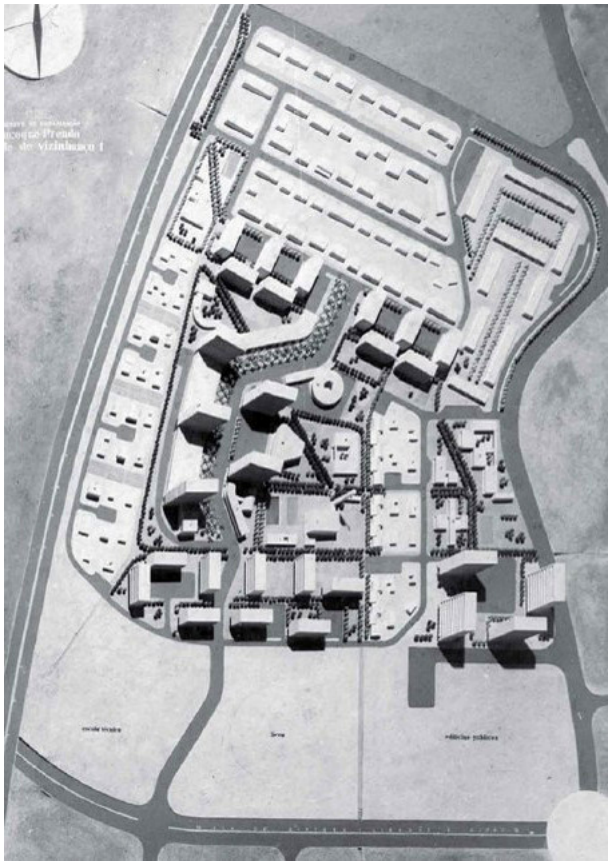

Figure 2. Neighbourhood Unit No. 1, Luanda (model photograph, 1961–1963). Source: Courtesy of Fernão Simões de Carvalho.

The new housing project consisted of 28 slab and point blocks, a total of 1,150 apartments for a population of 3,300 residents, occupying an area of about 30 hectares. The housing proposal supported infrastructures that ensured services nearby, intending to bring together different social classes and ensure family diversity. The residential area included single-family houses for the upper-middle class, collective housing (11 and five storeys) for the emerging middle-class, and low-cost detached houses for the more vulnerable population already living in the Prenda Musseque. While aiming to integrate the resident population, it followed the guideline that indigenous people should live in low-cost housing in semi-detached, single-family, or row houses and the Portuguese in high-rise buildings. As Correia (2018) noted, after 1961, in a few rare cases the local population was already being allowed to live in high-rise buildings or to acquire/receive from their employment housing in any of Luanda's neighbourhoods. In this case, the allocation of housing was equal for both social groups (Correia, 2018, p. 182; Figure 3).

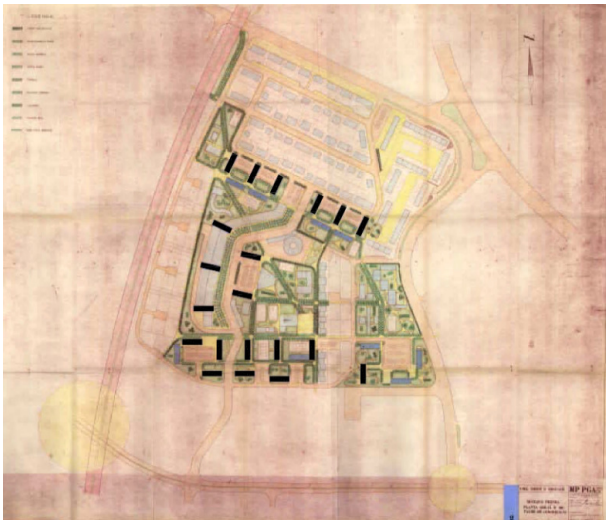

Figure 3. Neighbourhood Unit No. 1, Luanda (drawing). Source: Carvalho (1963b).

The housing buildings constructed resulted from a direct award of contract to the PRECOL construction company, which operated in Angola during the colonial period. Simões de Carvalho, with Fernando Augusto Pereira and José Pinto da Cunha, all architects from the urbanisation office, designed a housing project with a rational structure that allowed different environments. Each cluster had a central square for social interaction and the buildings were supported on pillars, among which the free space flowed, extensively, throughout the unit (Rodrigues, 2015, p. 83). Despite the diversity of each cluster, the consistency of modern expression and the repetition of architectural elements across the different sections endowed the whole with a great sense of cohesive unity, without each cluster losing its uniqueness and identity (Figure 4). Le Corbusier's famous Modulor system greatly inspired him to define every single aspect of the residential project, from the overall urban scale to the interiors of the residential housing. In general, Prenda's residential buildings follow the same internal layout, only varying in the number of rooms or the placing of the "interior street" and the stairwell and lifts. With this in mind, the semi-duplex typology was adapted to the different dimensions and the challenges of the

Figure 4. Simões de Carvalho, Alfredo Pereira, and José P. da Cunha. Prenda neighbourhood: Housing types A, B, and D. Photos taken by the author in 2010.

climate, ensuring ample cross ventilation and good protection from the sun.

However, not all residential structures ended up being built: Only 20 residential blocks were completed, eight of which were based on an architectural design by other teams, with a visible loss of aesthetic quality, while three were left unfinished and only later completed and occupied. As a result, the overall effect suffered from a lack of focus what with the cutting back on green space, for example. It is interesting to add that it was thought of as a prototype of a new urban model to be applied in new areas of expansion, to be put into practice in various locations across the city. Despite the promise of such a planning approach, as Milheiro et al. (2015) have recognised, the post-independence period failed to continue what had been outlined before.

In Lisbon, the first mass housing complexes with real public impact were the result of state intervention, even though the Estado Novo advocated for architecture that favoured semidetached houses or small buildings. Therefore, these set the tone for future investment in urbanisation on the outskirts of Lisbon. They were the result of what Lamas (2010) called "operational urbanism," the bureaucratic adoption of the principles of modern urbanism that were progressively translated into operative procedures, both at the level of the approval of urbanisation projects and in the development of new construction practices. They heralded a new relationship between, on the one hand, the forms of urban growth and, on the other hand, the emergence of the automobile as an urbanistic premise (Nunes, 2011, p. 48). Despite the wealth of international scientific research on these issues (Dufaux & Fourcaut, 2004; Glendinning, 2021; Tauton, 2009), only recently has more attention been paid to this phenomenon in Portugal (Ferreira, 2010; Nunes, 2011), identifying the driving force of modern mass housing in the late 1960s and early 1970s, during the Marcelista period. Marcello Caetano replaced António de Oliveira Salazar as head of the Portuguese Government between 1968 and 1974, when some hope for political change arose, even if the colonial war remained a topic that weighed heavily on society.

Similar to what was happening in Luanda, the lack of quality housing for the middle classes in the centre of the Portuguese capital led to the occupation of land plots along the city's northern periphery, outlining new metropolitan strategies through the 1964 Lisbon Region Master Plan (Ferreira, 2014). The goal was to foster the urban development of this territory, of which the Portela urbanisation, developed by Fernando Silva, is a paradigmatic example. He brought significant know-how on housing for the middle and upper classes into the traditional urban context. The original plan covered an area of 54 hectares, with 196 plots reserved for the construction of 4,557 apartments (the final version of 1969 had 199 plots with 179 of them forming 44 slab blocks and 20 of them forming point blocks), intended for a total of around 18,500 inhabitants (Milheiro et al., 2018, p. 55). The main structuring followed modern principles defined by a rational and hierarchical road scheme, and by establishing functional clusters. The central core concentrated the commercial, cultural, and recreational amenities; the remaining public space was privatised (Figure 5).

The housing units are organised around the civic and commercial centre, defining an abstract and homogenous urban landscape, where horizontal stripes and long windows accentuate the horizontality of the façades. The internal organisation of the apartments favours the distribution of utilitarian space according to daytime/night-time routines, revealing by association a degree of the social hierarchy in the addition of a maid's room adjacent to the kitchen area, or the even more exclusive access to some of the residences. The neighbourhood was built in the early 1970s, taking place during a period marked by political and economic upheaval and a significant shrinking of real estate activity (which partially explains the interruption of the pace of construction in Portela in 1974–1975). The subsequent handing over of the plots to 134 different private developers did not question the semblance of the neighbourhood; its only impact was in making changes to interior layouts in certain cases. Nevertheless, the deviations and alterations made concerning the initial project did not prevent the Portela development from becoming a benchmark for other private developers who started to operate in other areas of the outskirts of Lisbon. It is possible to identify about 30 projects influenced by the Portela plan, which reveals its decisive role in the creation of an identity for the urban periphery of Lisbon (Milheiro et al., 2018, p. 48). This identity was characterised not only by

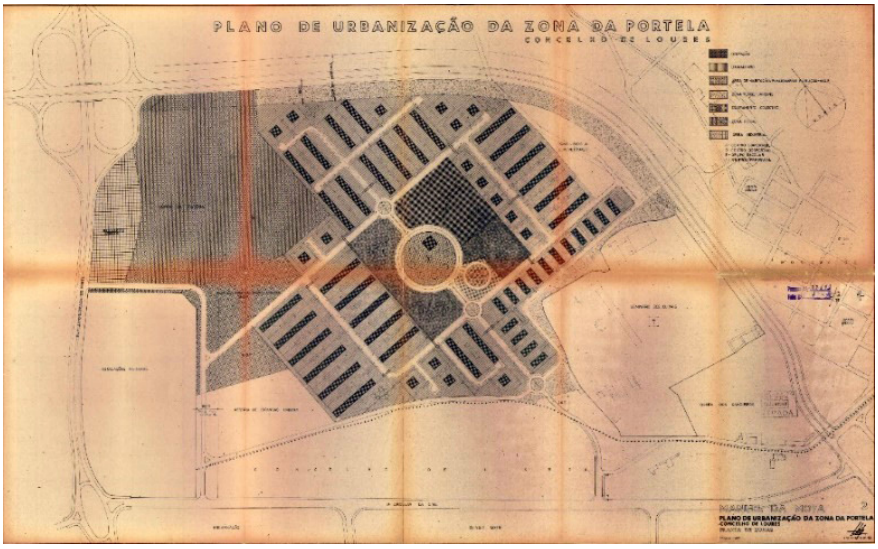

Figure 5. Urbanisation plan of Portela Zone (drawing). Source: Silva (1969).

the centralised orientation of the urbanisation but also by the abstract and pragmatic nature of the architecture itself (Figure 6).

2.2. Using an Urban Periphery Model as a Template for the Future: The Alto da Barra Complex in Lisbon and the CTT Neighbourhood in Luanda

Fernando Silva was a paradigmatic architect in the growth of the suburbs by setting a standard for housing for the middle classes living in Lisbon's suburbs. Besides the Portela neighbourhood, he developed urban plans for Quinta do Marquês (1961–1975), Alto da Barra (preliminary plan in 1962, urbanisation plan in 1964), and Quinta da Luz (urbanisation plan in 1972, intervening from 1975 onwards), as mentioned by Ferreira (2010). These case studies were discussed at great length in the most recent International Conference Optimistic Suburbia 2: Middle-Class Mass Housing Complexes (ISCTE–IUL, Lisbon, 16–18 June 2021). In the presentation "Demystifying Lisbon's Periphery from an Optimistic Perspective: Urban Context and Architectural Analysis of the Alto da Barra Neighbourhood" (Cardim & Rodrigues, 2021), the Alto da Barra district in Oeiras was mentioned as a case in point. In Oeiras, the neighbourhood began to take shape on the city's western outskirts in 1962, according to the design of Fernando Silva. The architect established a benchmark standard: architectural, through its language, and technological, in its construction methods, by defining a series of construction elements that offered a level of comfort still uncommon in residential architecture in the country. In the case of the Alto da Barra Complex, the proposal for large apartment blocks, with a modern layout (on *pilotis* and scattered throughout a lush public garden), was in strict contrast to the previous template established by the Costa do Sol Urbanisation Plan characterised by detached single-family dwellings located in the centre of the plot (1935–1948).

The modern collective housing model was thus a more profitable alternative for property developers and the emerging middle class who aspired to a "better home" but could not afford individual housing of the type available to upper-class families. As a result, the middle class could settle in a prime location but with access to a more "affordable housing" type. For the plot closest to the sea, Fernando Silva proposed five housing blocks with a similar exterior form and appearance and surrounded by wide open spaces with a carefully landscaped environment. This multi-family complex, whose good location allowed for panoramic views, made these residential complexes suitable for a high-income middle class, as they advanced towards the sea (Figure 7). By consolidating Lisbon's western urban periphery, the Alto da Barra Complex presented itself as a model for life

Figure 6. Fernando Silva's Portela District, Lisbon, Portugal. Source: Courtesy of Bruno Macedo Ferreira.

on the outskirts of Lisbon. Portela's pioneering spirit is reflected in a series of later initiatives in Lisbon in which Fernando Silva was involved, by other architects and developers operating in the Lisbon Metropolitan Area as late as the 1980s.

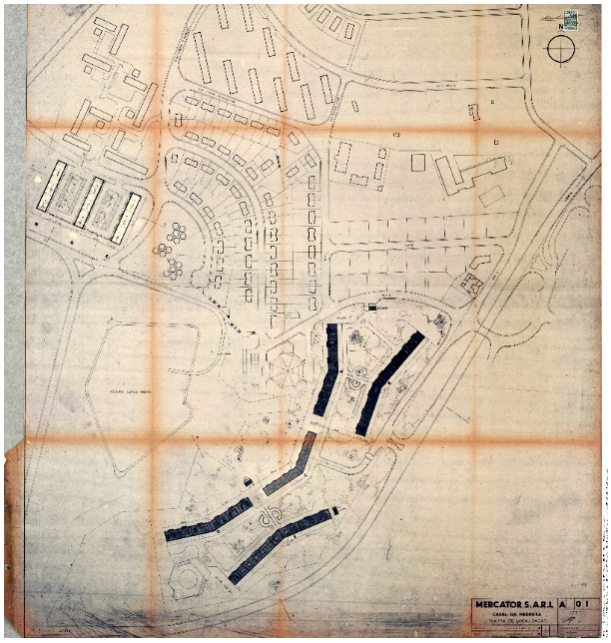

Figure 7. Urbanisation plan of Alto da Barra Neighbourhood (drawing). Source: Silva (1973).

In Luanda, after the experience of Prenda, Simões de Carvalho, with Lopo de Carvalho, precipitated the growth of the city to the east with the CTT neighbourhood, nowadays better known as the Precol District, from the name of the construction company that was responsible for building the first single-family houses in the 1950s to the last CTT block in (1968–1974). The urbanisation plan was structured around an internal traffic system for vehicles and pedestrians on a hierarchical circulation grid, articulated with three new residential areas adapted to the existing neighbourhood. Around single-family houses in the northern part of the plan, two clusters of collective housing (four storeys) were concentrated, and the third consolidated the south-eastern section. The high-rise buildings (eight and 15 storeys) surrounded the commercial area. At the same time, new and pre-existing amenities were incorporated, such as the Manolo Potier Technical School, now known as School Ngola Mbandi. Despite the clear approximation to the principles of the Athens Charter (street hierarchies, housing with amenities, green spaces, etc.), the dominance of straight lines and linear blocks characteristic of the modern movement was replaced by a fluid public space with blocks of different orientations, defining a more organic vision of modern architecture. The housing project was designed within a rational framework that enabled the creation of different environments, thus becoming a new potential path to progress. An urban logic defined the balance between built and open space, housing, and amenities within walking distance and well connected to transport. From this complex, only one residential block was built, which is, today, a lost building amongst the city mesh (Rodrigues, 2015, p. 82).

Despite the different outlines of urban growth and geographical terrain, the Alto da Barra Complex became a landmark on the western periphery of Lisbon, and the CTT neighbourhood contributed to the expansion of Eastern Luanda, qualifying the urban fringe for housing to a growing middle class. Both proposals advocated new residential models that prioritised green spaces and areas for residents to wander about and socialise. The angle or wedge became a unifying urban, architectural design element of these complexes, providing the façades with a "geometric undulation" that captures the light differently throughout the day (Figure 8).

As mentioned above, in both Lisbon and Luanda, the public intervention at the urban level was followed by private investment in large-scale residential projects. Private investment in the construction sector ensured the adoption of standardised systems adapted to the construction of housing and innovations in the construction methodologies ensured adequate housing for the masses. The insertion of prefabricated design elements led to functional innovations that were equally formal and aesthetic, benefiting from foreign know-how. In Lisbon, Alto da Barra had the advantage of Silva's privileged standing as a founding partner of the construction and project management company Mercator, allowing greater control of the process during the development of the complex. In Luanda, supported by the Ministry of Overseas Territories, the PRECOL company was awarded contracts for the CTT neighbourhood, which, as we mentioned, also occurred in the Prenda neighbourhood. The use of industrial construction systems ensured economic viability. The buildings themselves revealed a pragmatic approach that matched architectural design to construction standards.

Textured materials in their natural state set apart the Angolan projects, adopting a style historically known as "brutalist" (Milheiro & Fiúza, 2013). In the Lisbon Metropolitan Area, Fernando Silva opted for an abstract expression that was also a strategy to guarantee the uniformity of the built complexes, even when they were being worked on by other entities, as was the case in Portela. As an architectural statement, the building's layout also reflects the modern spirit of each architect and the nuances resulting from their interpretations. While acknowledging that the widespread use of *pilotis* in Prenda has failed, as they are almost all occupied by shops or other housing, in the case of the CTT block, the slight elevation is high enough to ensure ventilation and humidity control. This technical feature has been common in tropical architecture since the 19th century, unlike residential buildings in Portugal with occupied ground floor plans. After other experiments, Fernando Silva opted, in Oeiras, to open up the ground floor plans, which only served as entrances and for the doorman's office.

Figure 8. Undulating façades: Alto da Barra Complex (left) and CTT block (right). Sources: Photo taken by the author in 2019 (left) and courtesy of Ana Vaz Milheiro (right).

3. Social Mapping to Know the Residents' Profile

The sociological studies carried out in the four case studies focused on the relationship between changes in socio-demographic and family expectations and the practical and symbolic forms of homeownership. The aim was to add to our understanding of the interaction between spatial forms, behaviours, and perceptions of quality of life and to develop architectural and social analysis methodologies with field surveys to characterise the social structure of ownership and its internal heterogeneity. In the research project Housing for the Greatest Number: Lisbon, Luanda and Macau (Milheiro, 2012), an analysis of the degree of satisfaction of the inhabitants was incorporated, as well as their knowledge of the value of the architecture as patrimony, and of Portela and Prenda when juxtaposed. In this sense, a similar methodology was developed in both cases, supported mainly by a survey—Prenda (N = 289) and Portela (N = 354)—and interviews with residents. Both procedures took place between 2014 and 2015 (Guerra & Pereira, 2018, p. 65). In addition to creating profiles of respondents and respective households, the questionnaire addressed the following topics:

1. Type of housing (history and current situation);
2. Local networks and experiences;
3. Representations, resilience, and receptivity;
4. Ideas and perspectives for the future.

Some interesting outcomes as regards the insinuated "ghetto" aspect of the complexes in the cityscape were a factor of self-identification and the manifestation of a significant level of "residential satisfaction" (84.8% in Lisbon and 74.4% in Luanda; Figure 9).

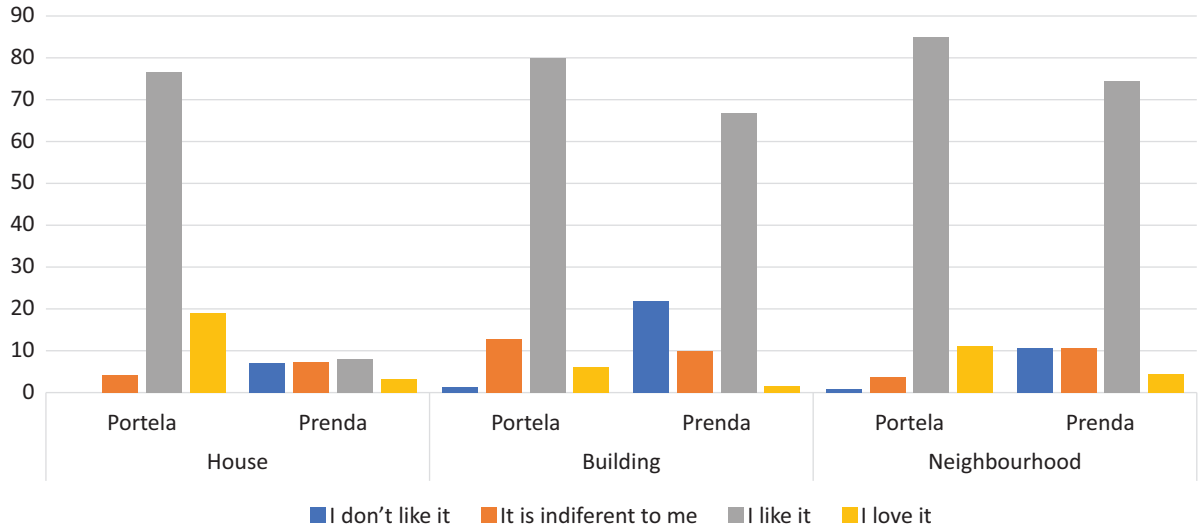

Figure 9. Residential satisfaction in Portela and Prenda: House, building, and neighbourhood, in %. Population Surveys of Neighbourhood Unit No. 1 of Prenda Neighbourhood (2015) and the Population of Portela Urbanisation (2014) by Dinâmia'Cet. Source: Guerra and Pereira (2018, p. 81).

The apartments in Prenda were occupied above all by middle-class European families during the colonial period. This population largely abandoned Luanda during the decolonisation and independence process, returning to Portugal between 1974 and 1976, thus leaving the apartments vacant. They were part of a wave of colonists returning to the metropolis that constituted, curiously enough, an integral part of the residents of Lisbon's periphery and the Portela development (Figure 10). Over time, Prenda became a densely populated neighbourhood, a fact proven in the interviews and sociological surveys of residents conducted by Guerra (2018), uncovering new information that explains the processes of the occupation of Prenda in the post-colonial period and gives an overview of the current situation.

When comparing the two Portuguese case studies, we find that location prevailed as the most essential criterion (Dinâmia'Cet, 2020). Residents consider that the quality of the setting with its green areas, solid construction quality, light, ventilation, and insulation are essential for the area to remain attractive. The positive perception of residential design is inextricably linked to the construction quality of the apartments (Portela—44%; Alto da Barra—26%). In addition to these physical aspects, the familiarity of the area (proximity of friends and family) is another essential factor in both neighbourhoods (Figure 11).

Only informal interviews with residents of the CTT block in Luanda were conducted by Angolan architect Filomena Espírito Santo and sociologist Orlando Santos. During the interviews, once again, the convenience of the neighbourhood's location stood out to residents of the CTT block, reinforced by the perception of peace and tranquillity of the complex compared to other areas of the city. Residents expressed their appreciation and a solid feeling of neighbourhood and building community; on the other hand, they pointed out the building's deterioration in quality and would like to see it renovated (Santo, 2021; Figure 12). The surveys show that the suburbs of both cities have undergone increasingly different forms of territorial development, alongside a divergence in lifestyles, social dynamics, interests, and

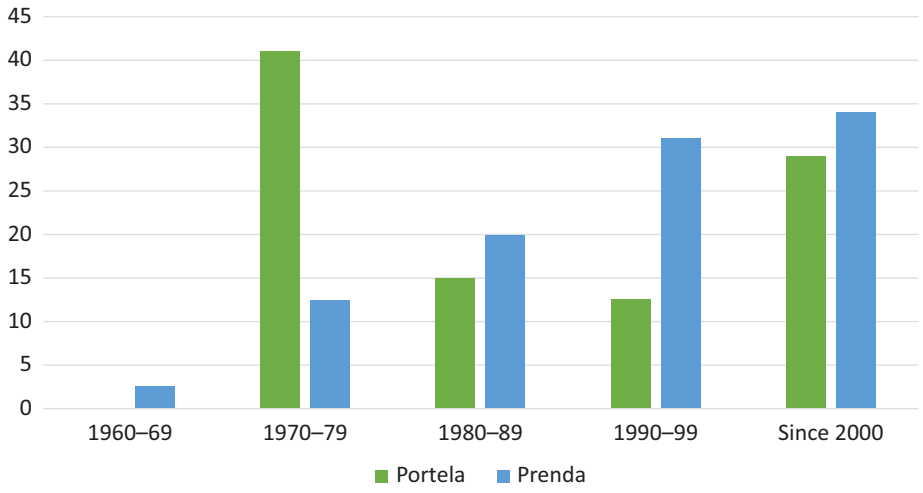

Figure 10. Time of settlement of current residents of Prenda and Portela by decade, in %. Work based on the Population Surveys of Neighbourhood Unit No. 1 of Prenda Neighbourhood (2015) and the Population of Portela Urbanisation (2014) by Dinâmia'Cet. Source: Guerra and Pereira (2018, p. 72).

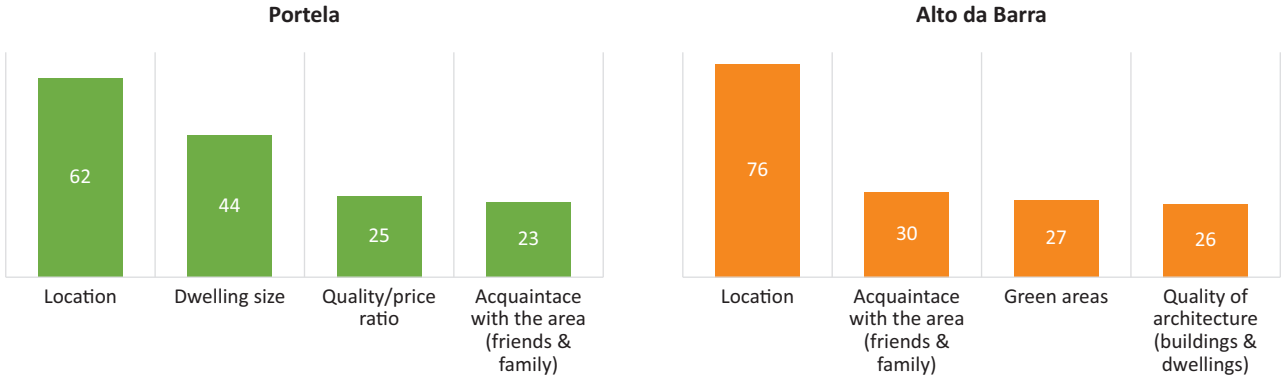

Figure 11. Residential satisfaction in Portela and Alto da Barra, in %. Source: Work based on the Population Surveys of Portela Urbanisation (2014) and the Population of Alto da Barra Urbanisation (2020) by Dinâmia'Cet. Source: Pereira and Corte-Real (2021).

Figure 12. Population survey of CTT block, Luanda. Source: Courtesy of Filomena Espírito Santo.

needs reflected in housing choices. This socio-spatial multidimensionality should be considered in metropolitan urban planning, as opposed to the prevalence of a vision centred on central city areas. A concept implemented with different approaches, although the sociological surveys carried out in the four case studies revealed a high level of resident satisfaction, from the urban neighbourhood planning to the well-lit and ventilated interiors of the apartments.

4. Conclusions

This cross-reading of Lisbon and Luanda's sprawl identified several residential neighbourhoods with similar aims in mind: collective housing for the middle class located on the urban periphery. The four cases presented here span almost 20 years, showing how a similar model responded to comparable problems in very different contexts. Despite all being cases of high-rise buildings with a high occupancy density, these initiatives present very different responses to the challenges of internal space and urban plan design. Implementing these projects in their respective territories further emphasises how they established the periphery as a sought-after location through autonomous neighbourhoods with a strong urban identity. These properties were developed by public authorities and built by the private sector; their main target was the broad spectrum of the middle class.

In Luanda, through the CTT project, Simões de Carvalho tried to reinforce the idea of the modern city that the Prenda neighbourhood heralded. A great diversity of typologies was intended for this new neighbourhood. However, the CTT block would be the only one to be built, leaving a void in the city, progressively occupied by other post-colonial initiatives. The failure of the urban project left the block isolated from the new town that Simões de Carvalho was proposing for the Angolan capital in the final cycle of Portuguese colonialist urbanism. However, the project's intention to articulate the various residential and social programmes, including the pre-existing buildings, could be described as the bearer of greater hybridity, along with what we find if we analyse Lisbon's Metropolitan Area. Built on flat land, Portela (with equally ghettoised pre-existing utilitarian purposes—seminary, military, or industrial barracks) facilitated the creation of a rigorous and well-defined geometric layout. A sloping topography and diversity of previous uses resulted in Alto da Barra having a more flexible urban structure. However, the principles of ease of access to public facilities were equally crucial (the centrality of the commercial area or the walking access to schools).

As a feat of urban engineering, what is clear is the highly segregated nature of the Portela urban plan, designed for a homogeneous middle-class population that creates a distance between them and the inhabitants of the surrounding neighbourhoods. Based on a more integrated model, the urban project of Prenda aimed at a diverse population with inclusive claims of ethnic integrity, despite the implicit whiff of colonial segregation. In short, unlike Prenda's plan, conceived as a piece of a larger urban framework, Portela was conceived more as an isolated concept, aiming to build a neighbourhood (or urbanisation, as it is usually called) per se (Guerra & Pereira, 2018, p. 67). The proposed allocation of public amenities also corroborates these assumptions. The widespread diversity of the Prenda neighbourhood, ordered by pedestrian paths and the coexistence between different social classes, contrasts with the centrality and concentration of the facilities in the Portela urbanisation. In both Prenda and Portela, the amenities were not built at the same time as the

residential buildings, undermining the initial principles of the urban plans. Over time, in Portela, changes were made with the connivance of the municipality, while the lack of rehabilitation strategies led to the degradation of the Prenda neighbourhood. Typological diversity is another factor that highlights the difference between the two locales, with Prenda serving as a testing ground for different accommodation typologies, as opposed to the supremacy of three-bedroom apartments found in Portela.

When these urban developments were placed on the market, their sales pitch focused above all on the attractiveness of the location, ease of mobility and the pleasantness of the surroundings, emphasising the unique qualities of the neighbourhood's setting. As a result, these developments tended to be self-sufficient, with a range of commercial and leisure amenities offering significant advantages to homebuyers. Secondly, the well-designed floor plan was amply demonstrated in the generous kitchen areas, along with the elimination of "undesignated" spaces without a specific purpose, maximising the apartments' spatial flow. Finally, mention was made of the modern construction techniques and finishes, highlighted as distinctive elements in the mass housing design. These criteria would eventually give rise to modern architecture, sophisticated as the investment justified with a clear identity. The approaches to contemporary living in their respective geographies further emphasised the consecration of the periphery through autonomous, iconic residential structures. Simões de Carvalho in Luanda and Fernando Silva in Lisbon proposed an architecture that aimed to build an optimistic periphery supported by a modern lifestyle. These neighbourhoods and isolated modern buildings, symbols of architectural, technological, and social aspirations, were trying to overcome the heavy historical colonial burden and, nowadays, have begun to be appreciated by residents and officialdom alike as an integral part of the city as it stands now.

However, today's debate focuses mainly on how to keep these metropolises alive and at the same time maintain and better them according to contemporary standards of comfort. Similar to the Portuguese case scenario, as seen in other political and geographical contexts, e.g., the Belgian colonisation of Congo, most of the colonial-era buildings in Luanda survived the fight for independence and were immediately re-used in the post-colonial period. This built legacy fosters memory in a complex way. As argued by Lagae (2004, p. 173), while colonial buildings embodied the ideologies of the various "colonisers," from the outset, they were also imprinted with meaning by the "colonised." Dealing with this legacy inevitably raises the question of whose heritage we are talking about. Aware of this issue, ICOMOS (International Council on Monuments and Sites) and DOCOMOMO (Working Party for the Documentation and Conservation of Buildings, Sites, and Neighbourhoods of the Modern Movement) have labelled this legacy "shared built heritage" (Lagae, 2004, p. 188). Drawing attention to these structures and encouraging the development of legal protection for them is beginning to gain momentum through the World Heritage and Modern Heritage programmes.

Still, until a few decades ago, the Portuguese ex-colonies were conspicuous in their absence, in national and international debates. It was not until the mid-1990s that Portugal was ready to deal with its colonial past. On one side, feelings of shame, guilt, and perplexity endure, while on the other, a sense of revulsion and discriminatory injustice rear their heads. The long colonial history of Portugal became an awkward topic of conversation and a thorn in the side of the national and international image of the nation (Matos, 2010, p. 27), a transformational process that, as Lourenço (1991) has noted, has taken its time. Drawing on recent insights from heritage policy and architectural historiography and the work of Angolan historians, planners, and architects, a call is being made to study this "shared" colonial heritage. Such a heritage can offer a powerful critical tool to reappraise the ideologically loaded history of the colonial past by interweaving Portuguese and Angolan perspectives. Can we still be modern?

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Conflict of Interests

The author declares no conflict of interests.

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Article

Contemporary Decentralized Development of a Centrally Planned Metropolis: The Case of Budapest

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Abstract
This study examines the changes undergone by urban centers within Greater Budapest's extension area, which was annexed to the capital of Hungary in 1950, and which is, with minor modifications, equivalent to the outer zone today. The article compares the development methods of two different political systems: state socialism (i.e., the communist regime) between 1950 and 1990, and post-socialist capitalism after 1990. Over a longer period, the urban development of Budapest has made a long but circular journey from decentralized to a decentralized–disjointed socio-spatial development system, passing through a centrally-planned communist era between 1945 and 1990. Nevertheless, closer examination of this process reveals that several paradigm shifts took place in the design methodology, which was strongly influenced by socio-economic changes. These shifts, layered upon the inherited structure, as well as the neglect or preference of different systems, caused great differences in the development histories of centers on the outskirts. Therefore, we have set up a development typology for the centers on the outskirts by summarizing the planning history at the city level. Based on how well the center was able to incorporate itself into the larger metropolis since 1950, we have distinguished the following development models: the metropolized, the transcript, the rehabilitated, and the urban village model. This typology is extended to include new urban centers that formed during state socialism (between 1950 and 1990) and post-socialist capitalism (since 1990).

Keywords
Budapest; governance system; metropolization; polycentric city; urban development; urban planning

Issue
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1. Introduction

The main objective of our study is the comparison of the state socialist—centralized (between 1949 and 1989)—and the post-socialist—decentralized (from 1990 onwards)—development processes within the capital of Hungary, Budapest. As a starting point, we adopt a theoretical perspective that helps to situate our study in the international literature, listing the most important urban theories related to the topic. Then, to make the local spatial, political, and economic conditions clear, we place Budapest in a larger context, that of Central and Eastern European (CEE) during state socialism and after the 1989–1890 transition period. After that, we briefly introduce the reader to the planning history of Budapest, focusing on the changing concept related to its urban centers. Lastly, we evaluate and classify the results of these development policies to gain a professional overview of the actual system of the centers of Budapest.

Based on primary sources and international scientific literature, the aim of the study is to compare the actual system of centers to the *traditional*, inherited

structure (as it was in 1950) through an understanding of the development methods of the two political systems: state socialism, between 1950 and 1990 (influenced by *modernism*), and post-socialist capitalism after 1990 (that is considered to be *contemporary*). The central hypothesis of this article is that, from a historical perspective, the urban development of Budapest has taken a long, but circular journey from decentralized to decentralized–disjointed socio-spatial development by starting from a decentralized, *traditional* typology (with many different cities and settlements having their own development policy), passing through a centralized, fast *modernization* of the pre- and interwar period, to then undergo a centrally planned *state-socialist* phase between 1945 and 1990 (in the spirit of *late modernism*) and arriving at the recent post-modern, *contemporary*, decentralized type of development with constantly changing influences of central governance (e.g., EU, city, and state). As a result of changing policy and position of centers, as well as the shifting historical, social, and environmental framework, we have established a *development typology* for the centers on the outskirts through the *summary of the planning history* on the city level.

After 1990, Budapest underwent the socio-spatial changes typical of the post-communist Eastern Bloc. First, the disintegration of the centralized power for 40 years and the change to neoliberal capitalism resulted in uncontrolled suburbanization and the exploitation of vacant urban peripheries. Then, after the economic crisis, the undertow of the population concentrating in the center could be observed. Keresztély (2002) claims that Budapest was a "winner" in this political-economic transition period; however, this further widen the gap between the capital and the rest of the country. Today, the 1950 extension area of Budapest is not the main targeted area of inner migration. Additionally, some peripheral districts have faced dramatic shrinkage (Hungarian Central Statistical Office, 2021). In the past decade, with the revitalization of former town centers—now mostly subcenters in a metropolis of two million—the revival of local communities and identities, conflated by centralized planning in the past, can be experienced. Nevertheless, due to the limited power of the city government, there are huge disparities and inequalities among the districts (OTP Jelzálogbank, 2021, p. 9).

2. Understanding Budapest's Centers

2.1. Center

To support our argumentation, a brief explanation of the notion of *city center* is crucial. First, based on the arguments of widely accepted scholars (Blumenfeld, 1949; Hall, 1998; Jacobs, 1969; Lynch, 1961; Montgomery, 1998), it must be stated that *cities cannot exist without a center*. The most important socio-spatial characteristics of centers are, at the same time, the essential motivators of making a city, and these conceptual (and ideological) factors—market and competition, node and pole, faith, power, security, mixture, and identity—are the determinants of center creation, maintenance, and rehabilitation. Still, centers do not evolve if only a few criteria are present, since those are only mono-functional patches within the urban structure (Losonczy & Orbán, 2022). *Subcenters* became indispensable in modern, urbanized *polycentric cities*. Roncayolo (1966) claims that subcenters are the "democratized" forms of centers, which means that forming subcenters brings decision-making closer to people.

2.2. Timing

In our study, we will apply the distinction of *traditional*, *modern*, and *contemporary* city models, because widely accepted international theorists—motivated by ideological reasons—use this trichotomy based on historical epochs (Lynch, 1961; Mumford, 1961; Price, [ca. 2001]; Shane, 2011). In general terms, *traditional*, *monocentric* cities do not tend to grow beyond a walkable size, which means *the city itself is the center*. It is believed that the separation of activities and motorization can be linked to the beginning of the *modern epoch*. *Urbanization* signifies an immense population and territorial growth that—supplementing the traditional city centers—requires the constitution of multiple centers in a city, whose structure becomes *polycentric*. *Contemporary cities* can have multiple, functionally thematic centers (and subcenters) that exist in constant correspondence and have networked connections. These city models, which are center structure models as well, are frequently used in planning practice and policymaking. Yet, this trichotomy is not universal, and it contains simplifications and stereotypes (Losonczy & Orbán, 2022).

2.3. Interrelation of Center Models and Spatial Structures

Contemporary researchers (Barabási, 2002; Batty & Longley, 1994; Shane, 2011; West, 2017) frequently refer to the geographer Walter Christaller, who outlined the ground-breaking central place theory in 1933. He argued that systems, subsystems, and sub-subsystems are similar, which assumes a hierarchical, *fractal-like* city structure. We argue that a hierarchic approach is still necessary for urban planning and studies, especially in urban policy and governance. In planning theory and practice, spatial structure models depict the distribution of urban centers on different levels. This includes Bertaud (2013), who depicts four *spatial structures* influenced by the pattern of commuting trips between centers. Bourdeau-Lepage and Huriot (2002) claim that *metropolization* is the concentration of emerging metropolitan functions which seek to be located *centrally*. They argue that the process of metropolization depends essentially on *agglomeration* because it occurs

only above a minimum threshold of urban agglomeration forces. This cumulative process results in a spatial re-composition, usually accompanied by the *intensification* of the urban fabric.

2.4. Regional Context: Central and Eastern Europe

The 1989–1890 regime change has brought about far-reaching socio-economic and urban development changes in all post-communist countries, including the metropolitan areas of all CEE transition countries. However, these abrupt socio-economic and spatial changes in CEE cities have not been uniform (Gentile et al., 2012), according to—and affected by—the specific national developmental path they have taken, even within the so-called "socialist area and camp." Nevertheless, we have to accept that the capital cities and new industrial cities under communism were planned and designed to materialize rapid modernization and industrialization, all the while symbolizing progress in the achievement of ideological-political goals such as a just and classless workers' society. Characteristic socio-spatial urban symbols—and socialist remnants—are represented by new spaces and buildings, for example, the prefabricated, multi-apartment housing estates in CEE capital cities, mainly on the outskirts. Although the idealized, full-fledged "*homopolis*" (Gentile et al., 2012, p. 293) of the socialist dream was never realized, the so-called "*homopolitanization*" (Gentile et al., 2012, p. 293) agenda could be witnessed in each CEE country under socialism. Contrary to that, after the 1989–1890 regime change, these cities moved rather in the direction of the "*heteropolitanization*" (Gentile et al., 2012, p. 294), journeying along different political, institutional, administrative, and socio-economic urban development paths.

The book entitled *The Socialist City*, published in London in 1979, was one of the firsts to undertake a general description and spatial model of communist urban areas, trying to establish a simplified model to describe the structure of these cities (French & Hamilton, 1979). Hamilton's model uses eight zones. Within the small inherited inner area, he differentiates the historic core from portions that originated in the capitalist period before World War II. The large communist outer urban area is composed of a transition zone, socialist-realist housing from the 1950s, modern residential districts from the 1960s and 1970s, an open or planted isolation belt, an industrial zone, and the countryside.

The model by Sýkora (2009), a researcher from Prague, presents four categories: the center, which can be historic or not; the inner city; the housing estate as an independent unit; and the periphery (in the socialist version) or the suburb (in the post-socialist version). Yet, as Bertaud (2004) summarized, "CEE cities are, after all, more European than socialist," although he highlighted some key spatial issues in relation to the actual problems of European post-communist cities: the lack of retail and service space in the city center, the huge inherited socialist residential areas, the used or unused industrial land located close to the city center, and, lastly, the weak and poorly maintained urban infrastructure.

If we want to use a schematic model for our contemporary cities, it is enough to differentiate three parts: (a) the inner city, the basis of the city's identity; (b) the transition belt, the heterogeneous area with inherited and contemporary parts; and (c) the outer zone, halfway between rural areas and the suburbs, including former independent settlements, edge cities, housing estates, residential pavilions, industrial or agricultural land, green areas, etc. (Benkő & Kissfazekas, 2019).

2.5. Research Methods

Our analysis focuses on the planning and the development of the centers in the 1950 extension area—which is almost equivalent to the actual outer zone, defined in 1994—up to the present day. The article is based on a review of literature, analysis of documents related to Budapest policy documents, and data collection both historic and contemporary. The essence of the methodology is to describe the spatial changes over time. The special value of the present study is that it analyzes the spatial changes over a large time span instead of a single period. This method is particularly suitable for analyzing environments that have undergone similar economic policy changes, especially in post-socialist CEE countries.

This comparative analysis covered six general development plans on the Budapest level. Three of them were prepared during the state-socialist period in 1960, 1970, and 1980. The three others occurred after the political and economic change in 1994, 2003, and the current one from 2013. The series of maps depicts the center structure of these strategic planning documents revised every 10 years (see Figures 1 through 8). The summarizing table (see Table 1) shows changes in centrality status—as defined in these six plans—for all the urban areas that were designated as centers since 1950, even if only once.

Due to the continuous methodological changes, the names and classification of the centers at different levels were often modified. Therefore, for sake of simplifying and unifying the different terminology used in Budapest's development plans (e.g., main center, subcenter, local center, commercial center), we used a coding system in the summarizing table (see Table 1) and on the maps (see Figures 1 through 8). The C1 designation indicates the most important centers that are involved in the entire operation of the capital city. The mid-level C2 label is applied to centers that are important to a given district or multiple districts. The notation C3 is introduced when the given center is only significant for the neighborhood.

3. An Explanation of Budapest

Budapest—at least the traditional city center—developed quite organically until the end of the 18th century. When the three historically distinct

parts or traditional settlements (*Buda*, *Óbuda*, and *Pest*) united in 1873, Budapest became the capital city of Hungary (more precisely the Hungarian Kingdom within the Austro-Hungarian Empire). Nonetheless, the political-economic development period between 1867 (the beginning of the Austro-Hungarian Monarchy) and World War I was unprecedented both from the nation's and the capital city's point of view. There was fast industrialization, modernization, and urbanization all at the same time. Budapest became the second largest city within the Empire—after Vienna—attracting economic capital and generating many new industrial investments. This required human capital and an increased labor force augmented from rural areas. The number of industrial enterprises more than tripled between 1890 and 1910 (from 365 to 1,300), employing more than 200,000 people, thus establishing one of the most dynamically developing industrial centers in CEE (Kardoss, 1999, as cited in Kiss, 2007, p. 149).

This fast socio-economic urban development and the construction works of Budapest were centrally planned, managed, and executed by the Communal Planning Office of Budapest (*Fővárosi Közmunkák Tanácsa*) between 1870 and 1944 (Sipos, 2009). The construction of the railway lines and the regulation of the riverbank supplied an impetus for the industrial and residential expansions around Little Budapest. At the turn of the 19th century, the built-up area and the population of the settlements around Budapest increased exponentially. Also, a contiguous built-up area was created along the city boundary (Kocsis, 2008). This is how the so-called "*commuter villages*"—reminiscent of garden cities but inhabited by lower-income workers and lacking adequate physical and social infrastructure (Kovács & Tosics, 2014)—emerged. The idea of the Greater Budapest Plan (Bárczy & Harrer, 1908) emerged at the beginning of the 20th century with the aim of shaping it into the capital city of a prosperous Central European country, home to six million people. Historically, Budapest occupied a central position within the Hungarian Kingdom, but its role changed after World War I when the Austro-Hungarian Monarchy collapsed. Due to the Trianon Treaty, Hungary lost more than 67% of its territory, and roughly 33% of its population (Kiss, 2007, p. 149).

This socio-spatial central position was strengthened during the communist regime, coupled with the inherent characteristics of top-down central planning, characteristic of the whole political-economic system led by the communist party, and that included Budapest, too. The largest socio-spatial urban development change was politically decided in 1950 when—after many territorial modifications after World War I, influenced by political reasons—23 former distinct settlements in the agglomeration area, larger towns, and even smaller villages were "added" to Budapest, forming the present 23 districts. At the time of the extension, seven of them were important towns with developed centers (Budafok, Csepel, Kispest, Pestszenterzsébet, Pestszentlőrinc, Rákospalota, and Újpest), while the other 16 were simple villages (see Figure 1).

3.1. 1950–1990: State Socialism

The state socialist regime after 1950 promoted the planned economy and applied strict control over the allocation of human activities in space (Sýkora & Stanilov,

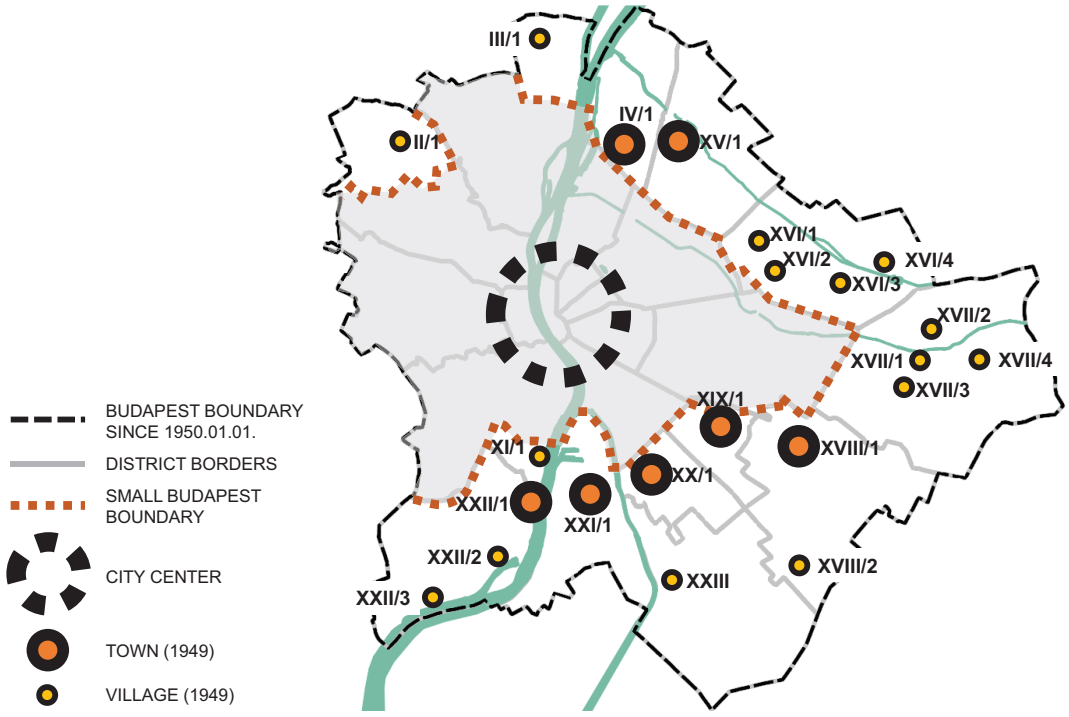

Figure 1. The 1950 extension territory and the 1950 settlements within, with the location and map number of their centers.

2014). After the losses during World War II, restrictions were needed. A modest concept was created, in which the high-density Budapest city center would be surrounded by a green belt and the sparsely built-up outskirts with low-density residential areas (Sipos, 2011). The 1960 General Development Plan (Általános Rendezési Terv; Budapesti Városépítési Tervező Iroda, 1960) reflects the aims of the first 15-year housing policy (1960–1975), which allocated the resources to well-connected empty blocks near the city center—i.e., to the transition zone of the city. This plan represents a *monocentric* concept, although the targeted areas can be referred to on the basis of land-use plans and texts (see Figure 2). The aim of the plan—concerning the extension area—was to develop the so-called "workers' districts" (Kissfazekas et al., 2020; Preisich, 1998), whose centers became prioritized urban areas (C1).

During state socialism, following the example of most post-war European cities, the large housing estates of Budapest were realized on the periphery of the city (Sýkora & Stanilov, 2014); therefore, the focus of development gradually shifted to the 1950 extension area. The General Development Plan accepted in 1970 (Budapesti Városépítési Tervező Iroda, 1970) increased the number of large housing estates (Benkő, 2015) that were positioned on the periphery. Yet, most of them were not defined as centers, since the concept envisioned a radial development along existing and planned traffic lines (Szabó, 2020), and centers were defined as transport hubs rather than accumulations of urban activities (Kondor & Szabó, 2007). Nevertheless, after the centralization in 1960, the 1970 plan elaborated a polycentric concept with a three-tier hierarchy (see Figure 3). Besides the historic core, it designated six subcenters (C1, *városrészközpontok*) that were already urbanized areas of "modernization" and intensification, but only two of them were located on the outskirts (Újpest and Kispest). Nine traditional district centers (C2, *kerületi központok*) were listed to adopt medium-level services, six of them lying on the outskirts. Since the concept was extended to the agglomeration, most suburban centers (C3, *településcsoport-központok*) were designated there, except for two of them.

The revised General Development Plan submitted in 1980 (Budapesti Városépítési Tervező Iroda, 1980) contains even more greenfield development areas to enhance the construction of large housing estates, but these areas do not appear on the city-level spatial structure concept, because most of them were only provided with basic services (see Figure 4). The aim of the 1980 Plan was to consolidate resources and to simplify the 1970 Plan. The task of rehabilitation was postponed, since the district centers were wiped out, although three of them were appointed as subcenters (C1, *városrészközpontok*). To mitigate the *suburbanization* movement that had already begun by the end of the 1970s, the concept decreased the number of suburban centers (C3, *településcsoport-központok*).

3.2. After 1990: Transition Period

After the system change in 1990, the sudden leap into free-market capitalism led to the profound socio-spatial reorganization of urban landscapes all over the former Eastern Bloc, and most metropolises were affected by the so-called *postsocialist suburbanization* (Sýkora

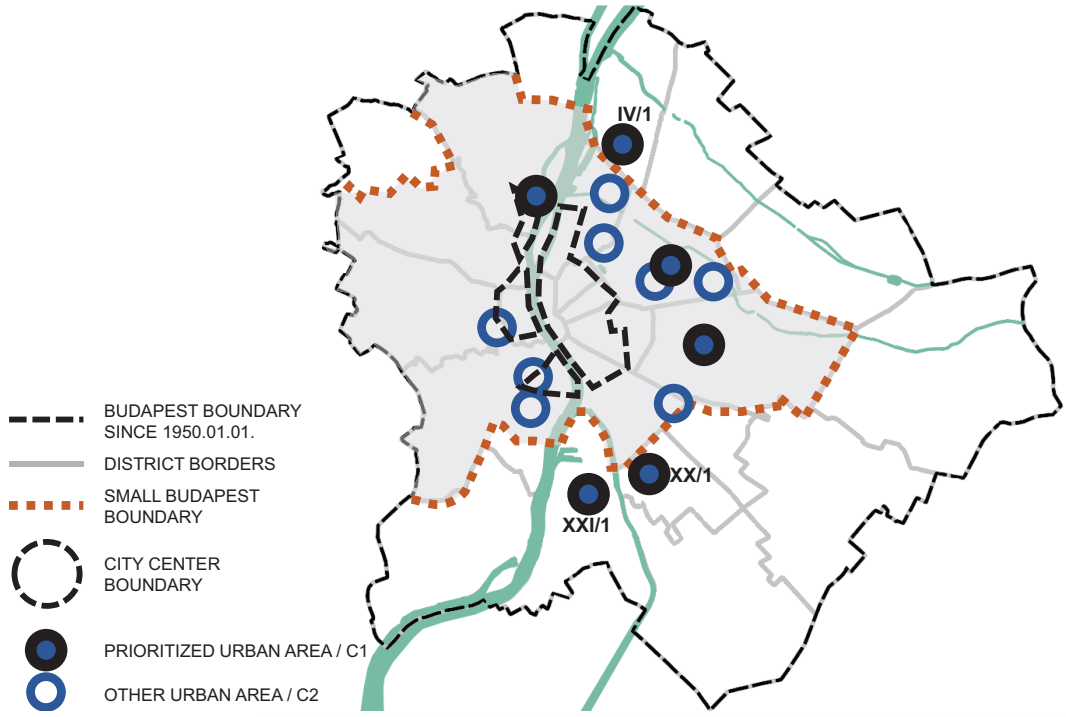

Figure 2. Targeted areas of the 1960 General Development Plan.

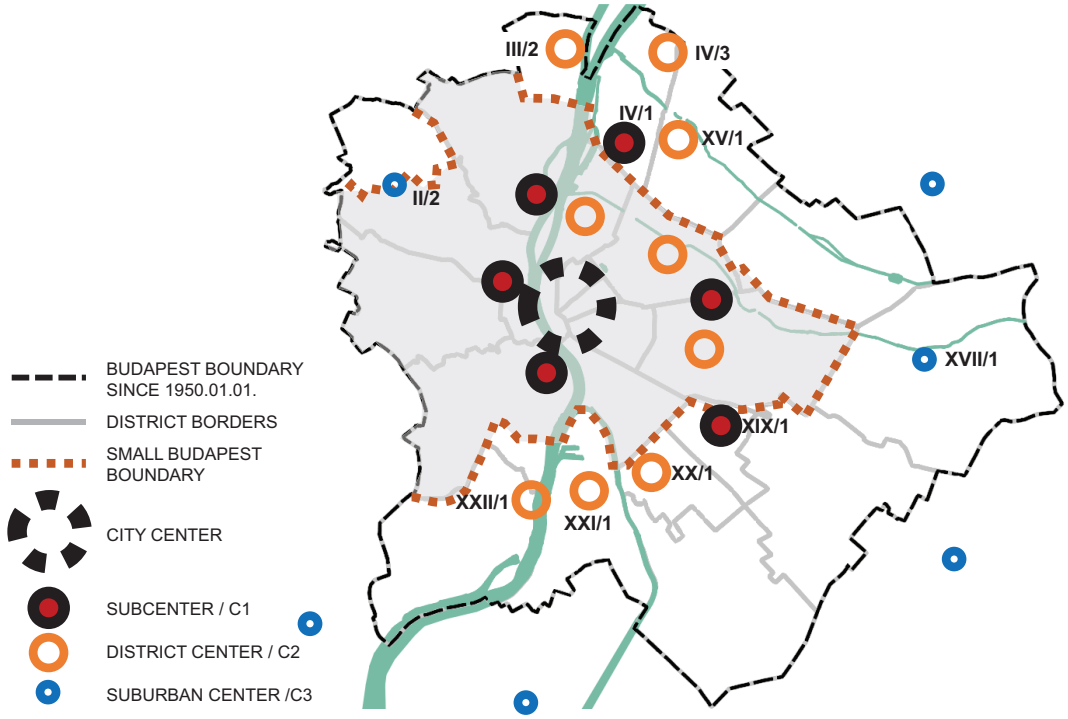

Figure 3. The spatial structure of the 1970 General Development Plan.

& Stanilov, 2014). Budapest went through a rapid metropolization that altered core–periphery relations within the country (Egedy et al., 2017). In the peripheries of most CEE cities, an increased supply of vacant land became available, aided by the flexible re-zoning adopted by most suburban municipalities (Sýkora & Stanilov, 2014). Instead, districts within the outskirts could only provide development areas on a limited scale. In this manner, a period of strong suburbanization commenced (Kovács & Tosics, 2014). As a result, Budapest lost 300,000 residents between 1990 and 2010. However, since 2008, the city has been recording a net influx again (Hungarian Central Statistical Office, 2021).

According to the 1990 Act on Local Government, a complex, multi-tier—but quite fragmented—local governmental and administrative system was created in

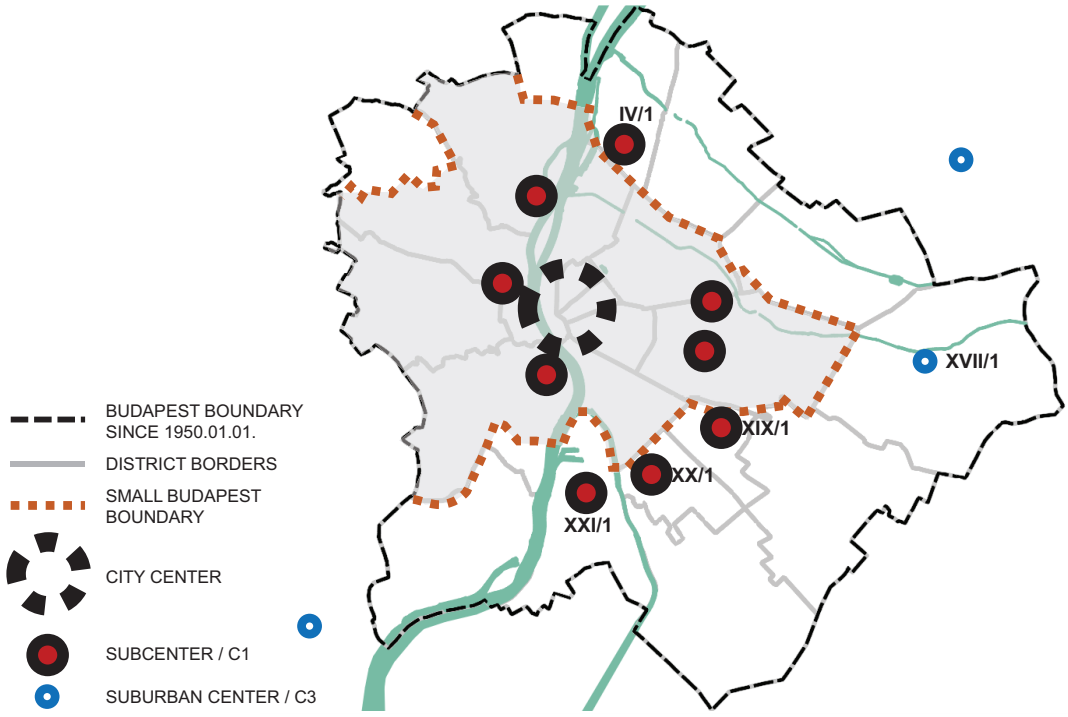

Figure 4. The spatial structure of the 1980 General Development Plan.

Budapest including 23 autonomous local (district) governments with the coordinative Budapest Municipality above them. Due to this new double-level governance system, every district within Budapest became much more independent, having the right to make their own decisions about land policy and urban developments. Yet, this weakened the power of the municipality on a city-wide scale (Kovács & Tosics, 2014).

The urban planning system of Budapest became multi-level in both strategic and regulatory fields, but the preparation of the land use and structural plans remained under the authority of the capital. The aims of the capital to control territorial extensions collided with the imperative of the districts to create opportunities for development that became promoters of growth (Sýkora & Stanilov, 2014). Along the new highways (M3, M1, and M5), economic growth poles of agglomeration emerged, and large commercial and logistics centers were created in previously vacant agricultural areas (Dövényi & Kovács, 2006). The construction of the—still unfinished—M0 highway fostered the installation of plazas (shopping malls) and hypermarkets at highway junctions.

Since the submission of the first General Development Plan in 1994 (Budapesti Városépítési Tervező Iroda, 1994), Budapest has employed a model similar to that of French and Hamilton (1979)—a schematic five-zone model with three basic elements that may be generalized across Europe: the historic core, the transition belt, and the outer area. The other two components reflect natural attributes that modify the first three categories: the Danube area and the hilly area. The strategy separates the interests of the whole city and the districts, while accordingly defining a *three-level center hierarchy* (see Figure 5). Enhancing the diversity of the areas, this plan aimed to define the different strategic goals for each zone. The outskirts of Budapest, which covers the 1950 extension area with minor territorial revision, was considered an "area directly connected to the agglomeration." In this way, all the subcenters (C1, *mellékközpont*) were positioned in the transition belt—i.e., at the border of the outer zone. Nevertheless, the new plan defined five "sub-subcenters" that are the extensions of subcenters (C2a, *alközpont*), several outskirts' centers (C2b, *elővárosi központ*), and hilly zone centers (C2c, *hegyvidéki központ*). In addition, the plan depicts seven "city gates" (*városkapu*) that were supposed to be the sites of extensive developments, taking advantage of the highways and the planned M0 highway.

The General Development Plan of 1994 was replaced by the new Urban Development Concept that was integrated into the Structure Plan (*Településszerkezeti Terv*; Budapest Főváros Városépítési Tervező Kft, 2005). The five zones established in 1994 remain, but the planned central system of Budapest changed significantly. According to this plan, there is no hierarchy among centers; thus, every center is at the same level (see Figure 6). The ones designated "subcenters linked to the city center" (C1a, *városközponthoz kapcsolódó városrészközpont*) were meant to function as gates of the city center and were mainly traffic junctions. The ones termed "subcenters with intermodality" (C1b, *intermodális szerepkörrel fejlesztendő városrészközpont*) lay in the transition zone between the historic core and the outskirts or the hilly zone. Other subcenters

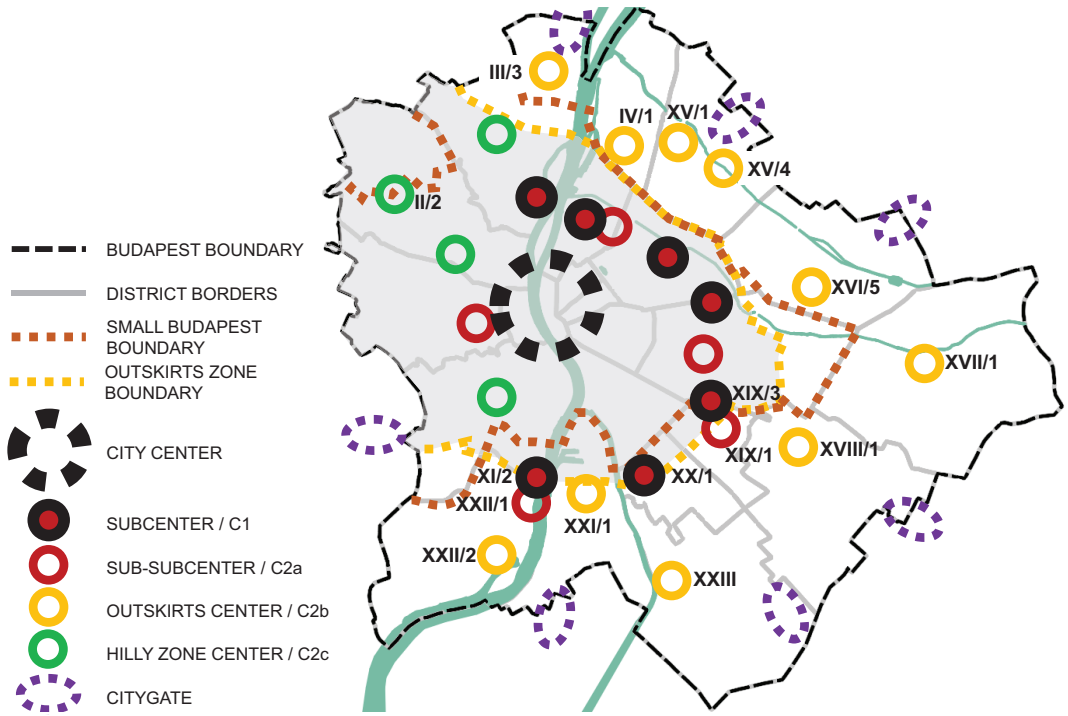

Figure 5. The spatial structure of the 1994 General Development Plan.

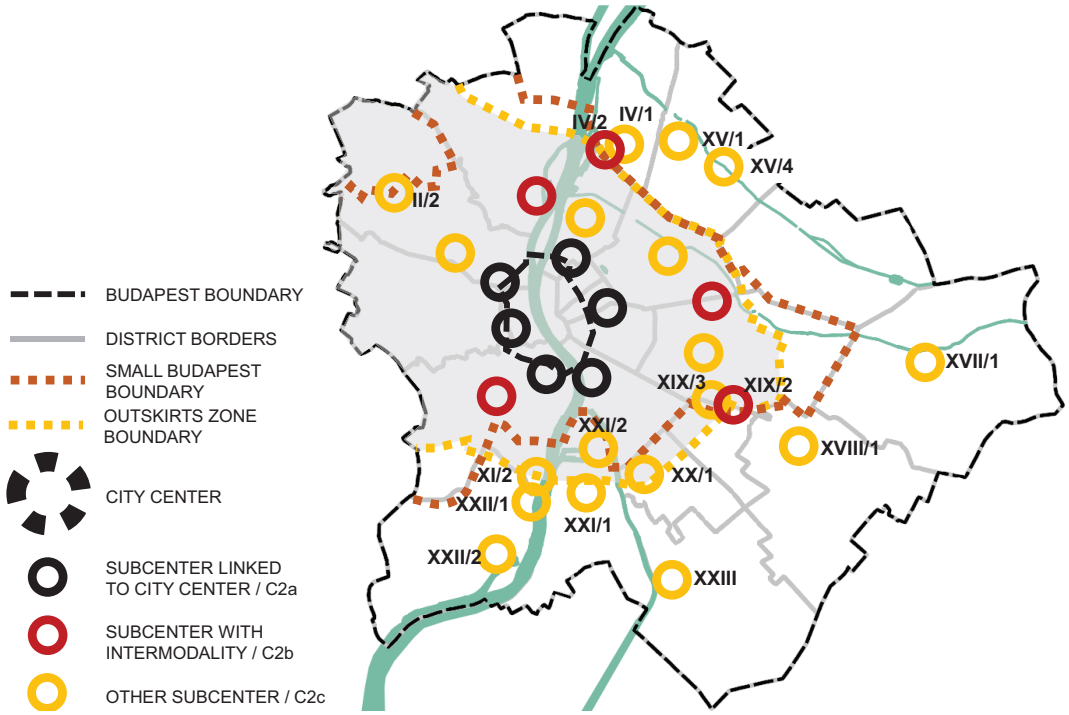

Figure 6. The spatial structure of the 2005 Structure Plan.

(C1c, *egyéb városrészközpont*) were mostly positioned on the outskirts and were considered traditional neighborhood centers.

The Urban Development Concept of 2013 (Budapest Főváros Városépítési Tervező Kft, 2013) was submitted after long years of thorough analysis and revision, adapting to new national regulations introduced in 2012. The plan, again, uses a triple division (see Figure 7). All the subcenters (C1, *mellékközpont*) are positioned in the transition belt. Subcenters require a significant capacity for traffic connection; thus, they can have a sectorial influence on agglomeration, and most of them also function as intermodal hubs. The document distinguishes local centers by catchment area. "Local centers on a

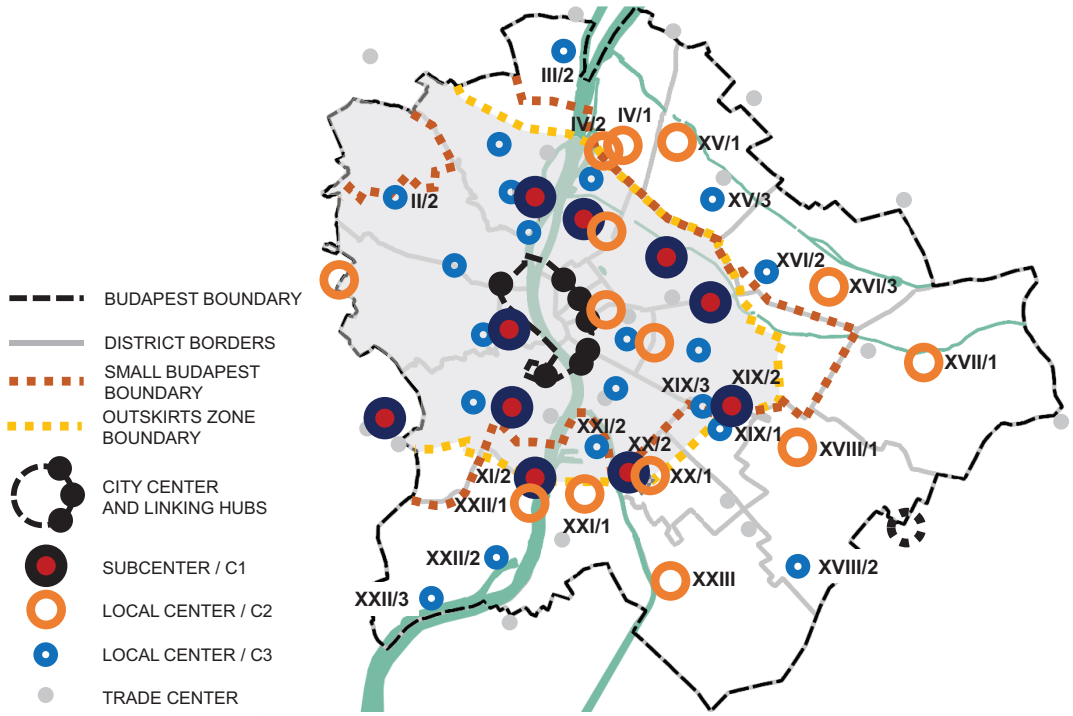

Figure 7. The spatial structure of the 2013 Development Plan.

higher level" (C2, *kiemelt jelentőségű helyi központ*) are defined as district centers or traditional community centers that have a major capacity of connectivity to the city. The ones termed "local centers on a lower level" (C3, *jelentős helyi központ*) are defined as neighborhood centers with only basic services that have no effect on the whole city.

3.3. Comparison of the Original and Present Structure

A comparison of the situation in 1950 and the plan for 2013 shows the spatial displacement of each center, the losses of position, and the gains as well (see Figure 8). Mátyásföld, Rákoskeresztúr, and Soroksár can be considered strengthening centers. Among the former villages, Békásmegyer, Rákosszentmihály, Cinkota, Rákoscsaba, Rákoshegy, Rákosliget, and Albertfalva completely lost their position. The settlements listed as cities in 1950 retained their position. Overall, however, the focus of development shifted to the transition zone, because the subcenters are located there. Large housing estates are emerging as new local centers. The changes in centers close to each other reflect the competition between them. For example, Békásmegyer lost its position because of the greenfield housing estate built next to it. Albertfalva became weightless due to the development of a commercial center south of it. Instead of Pesthidegkút, Hűvösvölgy was the focus of developments. The situation in Kispest is particularly interesting, where new hubs from two different eras drained resources. It can be observed that the development hubs of Budapest are clearly located in the transition zone, mostly affecting brownfield development areas, which is a rational decision in terms of land use. However, the designation of local centers (category C3) is inconsistent, and it does not treat neighborhood centers in the inner, transition, and outer zones differently.

4. Classification of the Centers on the Outskirts

Table 1 summarizes the changes that centers have undergone, as shown in Figures 1 through 8. They are listed in a clockwise breakdown (from Northwest District II to Southwest District XXII). Within every district (the unit of policy within Budapest since 1990), the traditional centers were arranged in advance, ahead of the state socialist era and contemporary centers. The table is supplemented by housing estate developments, the inclusion of which is justified by their complexity. For a similar purpose, the table also contains accurate statistical data on the current population of the districts for the census years 1949, 1960, 1970, 1980, 1990, 2001, and 2011 (Hungarian Central Statistical Office, 2021), so that the extent of urbanization—or in some cases, shrinkage—can be traced. From one aspect, the table reflects the progress of changes and movement (as shown in Figure 8), while it also delineates the characteristic typologies of center change, on the basis of which six models can be distinguished. The models were not only set up based on the movement of the centers, but we also took into account population changes (Hungarian Central Statistical Office, 2021) and neighborhood real estate market data (OTP Jelzálogbank, 2021), which are good indicators of economic performance

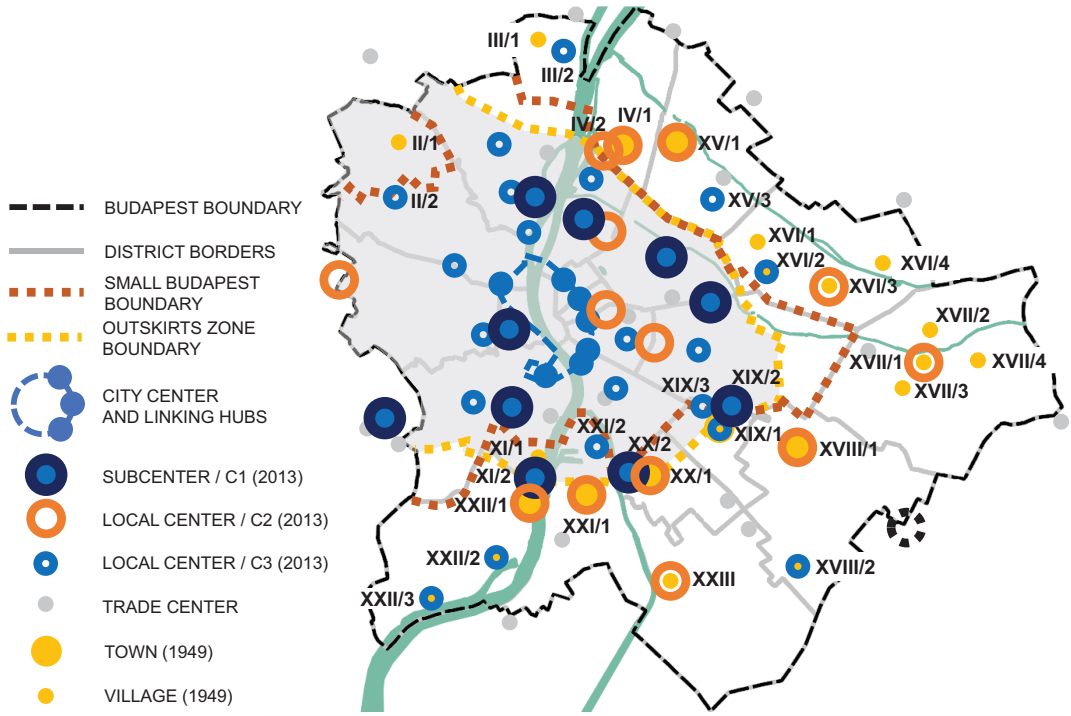

Figure 8. The comparison of the 2013 Development Plan to the 1949 spatial structure.

and popularity. In this way, the models show not only how outskirts centers have strengthened, weakened, or shifted, but also how well they have been able to become part of the metropolitan center system.

4.1. The Metropolized Model

These centers are Újpest, Pesterzsébet, Csepel, Pestszentlőrinc, and Budafok. Before 1950, the representatives of this typology were already important town centers. Most of them (except for Csepel and Budafok) emerged right on the border of the capital after 1873, the year that Little Budapest was unified. Between 1950 and 1990, they were focal points of communist urbanization since they were intensified with upper-level institutions. All of them became the sites of modern mass housing construction, but these were not implemented through total demolition. Some parts of the historic urban fabric remained, and the large-scale extension coexists with the original structure (Losonczy et al., 2020).

Table 1. Summarizing table of center changes since 1950.

District No.	Map No.	Center Name		1950–1989			1990 onwards		
			1950	1960	1970	1980	1994	2003	2013
Year of census survey			1949	1960	1970	1980	1990	2001	2011
II	Number of residents (census data)		79,474	94,722	100,438	103,434	99,627	90,020	81,567
	II/1	Pesthidegkút	VC	—	—	—	—	—	—
	II/2	Hűvösvölgy	—	—	C3	—	C2c	C2c	C3
III	Number of residents (census data)		66,365	77,566	76,559	119,565	141,482	127,297	117,046
	III/1	Békásmegyer	VC	—	—	—	—	—	—
	III/2	Békásmegyer Housing Estate	—	—	C2 + HE	— + HE	—	—	C3
	III/3	Csillaghegy (Csillag Center)	—	—	—	—	C2b	—	—
IV	Number of residents (census data)		70,407	78,250	79,074	81,316	106,185	101,100	93,087
	IV/1	Újpest	TC	C1	C1 + HE	C1 + HE	C2b	C2	C2
	IV/2	Újpest–Városkapu	—	—	—	—	—	C1	C2
	IV/3	Káposztásmegyer Housing Estate	—	—	C2	— + HE	—	—	—
XV	Number of residents (census data)		56,496	61,558	60,900	113,768	91,820	84,013	76,175
	XV/1	Rákospalota	TC	—	C2	—	C2b	C2	C2
	XV/2	Pestújhely	VC	—	—	—	—	—	—
	XV/3	Újpalota Housing Estate	—	—	— + HE	—	—	—	C3
	XV/4	Újpalota (Pólus Center)	—	—	—	—	C2b	C2	—
XVI	Number of residents (census data)		45,684	53,314	60,959	71,130	67,065	69,987	68,515
	XVI/1	Rákosszentmihály	VC	—	—	—	—	—	—
	XVI/2	Sashalom	VC	—	—	—	—	—	C3
	XVI/3	Mátyásföld (Erzsébetliget)	VC	–	–	–	—	—	C2
	XVI/4	Cinkota	VC	—	—	—	—	—	—
	XVI/5	Mátyásföld (Reptér)	—	—	—	— + HE	C2b	—	—
XVII	Number of residents (census data)		35,753	41,969	49,651	54,724	71,430	79,186	82,981
	XVII/1	Rákoskeresztúr	VC	—	C3 + HE	C3 + HE	C2b	C2	C2
	XVII/2	Rákosliget	VC	—	—	—	—	—	—
	XVII/3	Rákoshegy	VC	—	—	—	—	—	—
	XVII/4	Rákoscsaba	VC	—	—	—	—	—	—
XVIII	Number of residents (census data)		58,722	69,621	89,232	89,119	93,995	95,257	94,773
	XVIII/1	Pestszentlőrinc	TC	— + HE	— + HE	— + HE	C2b	C2	C2
	XVIII/2	Pestszentimre	VC	—	—	—	—	—	C3
XIX	Number of residents (census data)		63,118	65,157	65,629	59,000	72,228	62,660	56,728
	XIX/1	Kispest	TC	–	C1 + HE	C1 + HE	C2a	–	C3
	XIX/2	Kőbánya–Kispest (KÖKI)	–	–	–	–	–	C1	C1
	XIX/3	Üllői út/Határ út (Shopmark)	–	–	–	–	C1	C2c	C3

Table 1. (Cont.) Summarizing table of center changes since 1950.

District No.	Map No.	Center Name	1950	1950–1989			1990 onwards		
				1960	1970	1980	1994	2003	2013
Year of census survey			1949	1960	1970	1980	1990	2001	2011
XX	Number of residents (census data)		69,946	78,086	82,244	77,825	68,748	64,089	61,453
	XX/1	Pesterzsébet	TC	C1 + HE	C2 + HE	C1 + HE	C1	C2	C2
	XX/2	Gubacsidűlő	—	—	—	—	—	—	C1
XXIII	Number of residents (census data)		19,488	23,789	25,354	22,812	18,017	20,531	20,495
	XXIII	Soroksár	VC	—	—	—	C2b	C2	C2
XXI	Number of residents (census data)		46,621	59,963	68,354	73,377	87,271	79,646	72,226
	XXI/1	Csepel	TC	C1 + HE	C2 + HE	C1 + HE	C2b	C2	C2
	XXI/2	Csepel (North)	—	—	—	—	—	C2	C3
XI	Number of residents (census data)		86,804	109,124	146,846	167,795	160,035	132,949	125,721
	XI/1	Albertfalva	VC	—	— + HE	—	—	—	—
	XI/2	Budafok–Albertfalva	—	—	—	—	C1	C2	C1
XXII	Number of residents (census data)		33,050	38,662	39,892	48,214	50,031	51,259	50,577
	XXII/1	Budafok	TC	–	C2	– + HE	C2a	C2	C2
	XXII/2	Budatétény	VC	–	–	–	C2b	C2	C3
	XXII/3	Nagytétény	VC	–	–	–	–	–	C3

Notes: Center No. is used for identification on maps (Figures 1–8). C1, C2a/b/c, and C3 are explained on map legends and in text. VC—village center; TC—town center; +HE—housing estate construction (Preisich, 1998). For Budapest's outskirt districts, we use the official numbering (I–XXIII). The order of districts and their centers in the table: Clockwise from Northwest to Southwest. Dates: Submission years of the analyzed documents. Source: Hungarian Central Statistical Office (2021).

After the system change in 1990, representative *contemporary* institutions were realized. All these centers are the administrative centers of the given district. They can be characterized by good status and good connectivity (Benkő et al., 2017). In terms of amalgamation to the greater metropolis, these are the most successful centers. They represent integral parts of the city.

4.2. The Transcript Model

These centers are Kispest, Rákoskeresztúr, Mátyásföld (Reptér), and Albertfalva. In contrast to the previous typology, these traditional village/town centers were—except for some symbolic buildings—totally demolished and replaced by modern mass housing estates. This resulted in a loss of character and a rupture in the urban fabric (Losonczy et al., 2020) as well as underdeveloped central functions. Since 1990, contemporary developments have avoided these areas, and stagnation is visible. Instead of being symbolic and/or administrative centers, they function today as residential neighborhood centers, not integrated into the larger, metropolitan structure.

4.3. The Rehabilitated Model

These centers are Budatétény, Soroksár, Mátyásföld (Erzsébetliget), Sashalom, and Nagytétény. Before 1950, they were village centers that emerged in the industrialization period after 1873. Thus, their original character is reminiscent of garden cities. In the era of state socialism, they were neglected areas on the city level, because central planning concentrated on "workers' districts." After the system change, these centers were developed by the construction of upper-level services, mostly promoted by the district municipalities. Consequently, urbanization through contemporary developments was successful; and, as a result, they became important on the level of the city as well.

4.4. The Urban Village Model

These centers are Pesthidegkút, Békásmegyer, Pestújhely, Cinkota, Rákosliget, Rákoshegy, Pestszentimre, Rákosszentmihály, Rákoscsaba, and Rákospalota. Like the previous typology, these traditional village centers—with the exception of Rákospalota—were neglected by central planning authorities between 1950 and 1990. Because of this, they suffered from stagnation or even decline. Since 1990, some positive changes can be seen, but only basic services are present. They have not had the opportunity to regain their status as centers, rather functioning as sites of "inner suburbia." Nevertheless, they cannot be labeled neglected centers, because many of them have become popular residential areas, not at all independent of their village-like character.

4.5. New Centers Under State Socialism

These centers are Békásmegyer Housing Estate, Káposztásmegyer Housing Estate, and Újpalota Housing Estate. These mass housing estates, developed in the second half of state socialism, were positioned on the peripheries of the city—that is, the agricultural land of the former independent settlements. Mass housing estates were treated like institutional neighborhoods; yet, in reality, only basic services were realized (Losonczy et al., 2020). At the time of their construction, they were elevated to the city-level concept. Soon after their realization, however, they were excluded. Contemporary developments after the regime change concentrated on postponed or, for ideological reasons, neglected functions such as churches, and community-building facilities.

4.6. New Centers Under Post-Socialist Capitalism

This typology can be divided into three very different subgroups. The first group is made up of intermodal nodes (Újpest–Városkapu, Kőbánya–Kispest [KÖKI], and Üllői út/Határ út [Shopmark]) that became the sites of institutional developments as well. The second group is made up of large commercial developments (Hűvösvölgy, Csillaghegy [Csillag Center], and Újpalota [Pólus Center]) that have mediocre connectivity and are not the focal points of development anymore. The third group is made up of the three planned greenfield developments, which otherwise depend on the same planned infrastructure development element—namely, the Csepel–Albertfalva Bridge (Gubacsidűlő, Budafok–Albertfalva, and Csepel [North]). Except for intermodal hubs, these centers have lost their importance after the realization of the commercial projects.

5. Conclusions

The research focused on Budapest, a post-communist capital city in Central and Eastern Europe, as a case study to discover how a centrally planned metropolis was handled and modified by decentralized policy. The comparative examination of the development plans from the state-socialist period—1950, 1960, 1970, and 1980—and the post-socialist capitalist era—1994, 2005, and 2013—demonstrated that, from a historical perspective, the hypothesis regarding a cyclical process—from decentralized development to centralized and back to decentralized—is indeed true. In addition, the detailed analysis of the plans (see Section 3) reveals a much more complex and complicated process, during which several paradigm shifts took place. Budapest's urban expansion plan before 1950 was born in the spirit of *suburbanization* and the pursuit of Central European power, followed by a *monocentric* capital city plan focused on restoration and austerity after the losses of World War II. Housing policy was a central component of the welfare system of state socialism; however, under the *polycentric* plans, local center development was neglected, and major transport hubs were highlighted at the level of the capital. By the end of the communist regime, the effects of the economic crisis were already being felt, so a more restrained plan was drawn up. After the system change in 1990, planners took different characteristics and needs into account, which, during the transition period from socialism to capitalism, resulted in continuous conflict among central intentions, local aspirations, and investor interests. In the post-crisis plan of 2013, the initial fight was decided in favor of local communities, but with the need to make everyone feel as though they had benefited. Nevertheless, the plan may be said to correspond to the composite model of urban spatial structures (Bertaud, 2013), according to which, although there are subcenters, the primacy of the city center is unquestionable, and the most important subcenters are positioned on the *transition belt*, not in the *outer area* (French & Hamilton, 1979).

Each center's development concept was established using a different methodology, so one can only carefully draw models from the shifts in plans. However, from the classification of center development models (see Section 4), it can be stated that most of the industrial towns retained their status and became the sites of metropolization (Bourdeau-Lepage & Huriot, 2002) under state socialism, which made them favorable contemporary development sites. Instead, most traditional villages were neglected because they were not included in city-wide concepts. Some centers were able to regain the character of a center due to successful district-level developments, but these locations basically became local centers after 1990, able to serve the basic needs of the local inhabitants. Both the communist-era and contemporary centers can be seen as experiments that did not become integral parts of the urban fabric.

Therefore, the original hypothesis, based on a cyclical concept, is only valid in the long run. However, if we examine the way in which plans are prepared, it can be stated that—be it a polycentric or monocentric concept—the plans were *prepared centrally* before 1990, and in a multi-level system featuring the *conciliation of interests* after the system change. This supports the theory of Gentile et al. (2012) about "*homopolitanization*" under state socialism, and "*heteropolitanization*" during post-socialist capitalism, which—layered upon the inherited structure—gives rise to great disparity among the development paths of centers on the outskirts.

To understand the "complex adaptive system" (West, 2017) of Budapest, a further area of research could be to examine the extent to which district development plans correspond to or contradict the current development plan of the capital, and the extent to which the institutional developments actually comply with the (capital- and district-level) plans. An important circumstance for the future is the revision of the urban development plan. In the meantime, the state and the capital aim to extend

the concept to the agglomeration—although territorial revision of the capital and separation of some settlements from the capital come up from time to time. Today, we can speak of decentralized development, but the different levels are strongly interconnected. Subcenter developments are influenced not only by local values and interests but are planned by their respective districts (like 23 autonomous cities), coordinated by the Municipality of Budapest, and mainly financed by the state and the EU.

We hope that this study on the evolving system of Budapest's urban centers facilitates an understanding of post-socialist cities. Several cities in Central and Eastern Europe experienced similar ruptures in their political, economic, and social history, which affected their urban planning in the 20th century. Centrally planned periods that were a minimum of 40 (e.g., in Hungary) or more than 70 (e.g., in Russia) years in length resulted in a particular urban structure, partially rehabilitated by contemporary developments. Therefore, in terms of further research, we see a great opportunity to examine the metropolises in regions of similar size and average density, which have also undergone territorial expansion(s) and centrally planned urban developments (especially Prague, Warsaw, Bucharest, and Belgrade). Nowadays, contemporary geopolitical situations and urban policies shape and determine their futures as evolving urban entities.

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Conflict of Interests

The authors declare no conflict of interests.

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Article

Developing Polycentricity to Shape Resilient Metropolitan Structures: The Case of the Gdansk–Gdynia–Sopot Metropolitan Area

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Abstract
Making the metropolitan area resilient, in many cases, calls for amending its spatial structures. This may take various forms, including both reshaping the metropolitan core and redeveloping the entire regional network of cities and centres, making them part of a coherent structure. The latter strategy is associated with reinforcing secondary urban centres as well as shaping new connections between them. In this case, the term "resilience" is associated not only with environmental aspects but also with socio-economic and spatial ones. Shaping resilient metropolitan areas is therefore associated with complex planning and development undertakings, in many cases spread over decades. This approach was proven to be correct during the recent Covid-19 pandemic, which spurred this process of rethinking metropolitan structures and led to generating new approaches to metropolitan development and planning. The article focuses on the Gdansk–Gdynia–Sopot Metropolitan Area, which is potentially the largest polycentric metropolitan area on the southern shore of the Baltic Sea. In this case, polycentricity has a twofold origin—it includes centres with a shaped spatial structure that come closer together as they develop and diffuse suburban structure, the shaping of which remains one of the main challenges of the regional spatial policy. The authors look at both concepts and tools associated with reshaping this metropolitan centre. In particular, they analyse the effects of using both obligatory and optional planning tools which are available according to Polish law. They also try to answer the question of under what conditions a polycentric structure has a chance to become a resistant structure.

Keywords
Gdansk Metropolitan Area; metropolitan planning; Poland; polycentrism; resilience; Tri-City; urban planning

Issue
This article is part of the issue "The Resilient Metropolis: Planning in an Era of Decentralization" edited by Thomas J. Vicino (Northeastern University).

1. Introduction

The evolution of the structure of metropolitan areas is related both to the conditions specific to a given area, as well as to the application (or the lack) of specific planning ideas and doctrines. The theories developed at the beginning of the 20th century aimed at responding to the challenges related to the rapid increase of population within metropolises. The Covid-19 pandemic and the development of remote work technologies have become the cause of the latest changes. Climate change and the pursuit of creating sustainable and resilient urban structures also play an important role. These questions induce city authorities and planners to rethink how large systems of metropolitan centres respond to contemporary needs (Jenks & Jones, 2010). Therefore, demands to verify the spatial policies of cities and metropolitan areas start to arise. Striving to keep the possibility of using the infrastructure and combining it with what a metropolitan centre can offer, while also limiting the sensitivity of its inhabitants and users to random events, one may find the answer in the idea of polycentricity of these areas.

As a result, the entire area may become more resilient not only concerning environmental aspects but also to socio-economic and spatial ones (Eraydin & Tasan-Kok, 2013). However, the need to build resilience is confronted there with the need to cope with the individual choices of local stakeholders which influence the process of development and transformation of urban structures. Thus, it is possible to identify the need for a new approach in the context of spatial development and management, which would be directed at the process of building the resilience of metropolitan areas (Kenworthy, 2016).

To present the large scope of issues associated with these processes, the authors decided to focus on a selected case study: the Gdansk–Sopot–Gdynia Metropolitan Area. It is the only urban complex in Poland with a metropolitan rank and a historically determined polycentric structure.

2. Theoretical Framework

2.1. Resilience of Urban Structures in Spatial Planning

The concept of resilience in spatial planning appeared for the first time in a conceptual framework describing models of changes in the structure and functions of ecological systems (Holling, 1973). Later, the concept of resilience became popular among social researchers and was reflected in attempts to investigate links between socio-ecological systems (Armitage & Johnson, 2006; Berkes & Folke, 1998; Folke et al., 2003; Walker et al., 2006), demographic trends (Bourne, 1995), institutional and organisational solutions (Anderies et al., 2004; Holling & Gunderson, 2002), or natural disasters, failures, and acts of terrorism (Godschalk, 2003). In recent years, the concept of resilience has often been associated with other phenomena that partially meet the criteria of a disaster—sensitivity to climate change and adaptation to its effects, and the ability to meet social needs in a time of pandemic (see, e.g., Han et al., 2021; Kajdanek, 2020).

In the context of planning for metropolitan areas, resilience is associated with dealing with various spatial situations, including areas facing growth, decline, or regeneration processes. These processes—also reflecting the classical model of the evolution of urban structures which includes urbanisation, suburbanisation, de-urbanisation, and ultimately re-urbanisation as the final recovery process—may be associated with the uneven and imbalanced process of transformation of the entire area. At the same time, these processes of urban transformation depend also on the type of planning instruments that are being used. In this respect, we can observe the diminishing importance of the planning regulations and the growing role of informal plans, allowing for less formal (but, paradoxically, often more effective) coordination of development processes within individual cities and municipalities. This entails a shift from command-and-control-based systems toward collaboration. At the same time, the "integrated planning approach" replaces "branch approaches."

Thus, for this study, building resilience is understood as the coordination of spatial processes aimed at creating a metropolitan structure consisting of a crystallised network of centres providing access to housing, public space and space for ecosystem services, and rationalising transport services within a defined area whose spatial policy is created by multiple actors.

2.2. Polycentricity and Metropolitan Potential

The term polycentricity in relation to settlement networks can be analysed at different scales (see European Commission, 1999; Hall & Pain, 2006; Meijers, 2005). The authors have chosen to capture the urban region in scope.

Polycentric systems usually have their origins in the history of urbanisation of a given area. The genesis of such systems was first seen in the primary competitiveness of settlements, which with time were subordinated to one administration (e.g., the Hungarian Budapest; Słoń, 2010). The concept of the "garden city" (Howard, 1902), on the other hand, gave rise to polycentricity aimed at improving living conditions, which in the mid-20th century resulted in the planning of several urban regions, including London and Copenhagen (see Figure 1). Similar assumptions also guided the not fully implemented project of Functional Warsaw in the interwar period. In the case of polycentric metropolises, Randstad Holland is the leading example (Meijers, 2005).

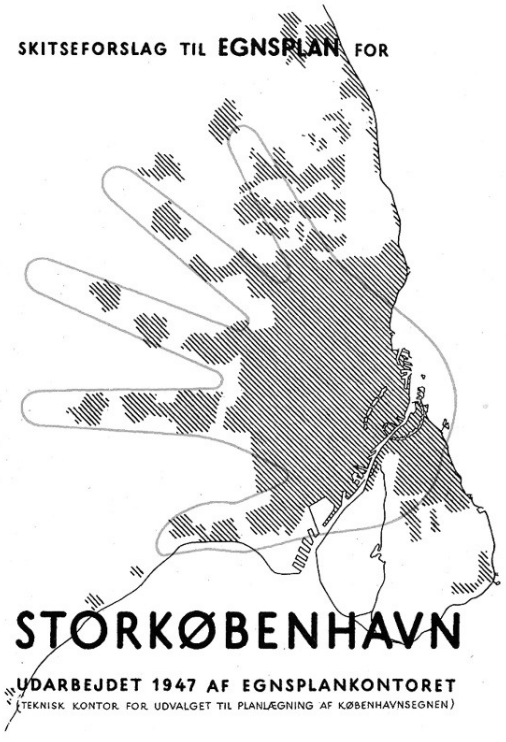

Figure 1. Copenhagen Fingerplan, 1947. Source: Norman (2022).

Today, however, the creation of polycentric centres is much more often caused by rapid urbanisation, including the confluence of urban structures and the development of suburbs (Bartosiewicz & Marcinczak, 2022).

Nowadays, one of the aspects of polycentricity is a conscious policy leading to the cooperation of centres against global competition, which may give polycentric metropolises an advantage over monocentric and diffuse ones (Hall & Pain, 2006). Regardless of their genesis, the great limitations for the management and development of polycentric metropolises remain the same: fragmentation of local policies (Hall & Pain, 2006), coordination limitations of these policies (Schmitt, 2013; Sołtys, 2009), and struggle to find a leader position (Sagan, 2014; Szmytkowska, et al., 2021).

2.3. Polycentricity in Central and Eastern Europe

Polycentric development in Eastern Europe, although having its origins in pre-Second World War urbanism, is marked by the legacy of rapid urbanisation phases of the 20th century (cf. Hirt & Kovachev, 2018). In the socialist era (after 1945), despite the central position of economic and spatial planning, the main assumptions for the development of polycentric urban structures were similar to those found in Western Europe and North America, which was related to the high costs of moving between centres (Domański, 1997). Moreover, the shortages of both goods and financing hindered the implementation of the service programme, and it often turned out that the planned local and supra-local centres around larger cities could not fulfil their role. This changed to a certain extent only after the political transformation of 1989 (Markowski, 2004). Nowadays, a potential resident or company looks for a place based on its criteria of attractiveness. However, as a result of making these choices, the urban structure may be atomised and broken down into an "archipelago of enclaves" (Hajer & Reijndorp, 2001, p. 60). A simplified typology of these spaces may be based on the analysis of their inhabitants' social position. Here, one can mention spaces for the elite and middle class, suburbs for relatively well-off families with children, traditional working-class areas, and ghettos of exclusion (Marcuse & van Kempen, 2000).

Despite the awareness of this trend within the academic community (e.g., Bald, 2005; Barwińska-Małajowicz et al., 2006; Kołodziejski et al., 1999; Korcelli-Olejniczak, 2004; Śleszyński, 2007) and political activity related to building an economic position in metropolises (e.g., Adamowicz, 1993), adopting regulations sanctioning the planning of long-term resilient structures on a supra-local scale did not succeed in Poland. A certain ground for discussion on coordinating the development of polycentric centres was established only in 1999 when regional self-governments for *voivodships* (regions) and *poviats* (counties) were established. The appointment of new levels of local government was a continuation of the process of decentralising power, which in turn was one of the basic assumptions of the democratic transformation (Kulesza, 2000). While counties did not play a greater role as a platform for managing the development (Kwaśny, 2019), *voivodships* gained tools to influence the coordination of local development policies. They were assigned competencies in spatial planning, environmental protection, transportation, and labour market development, and above all, they played a significant role in the implementation of the European Union cohesion policy, which Poland would soon join.

2.4. Urbanisation Trends

Global urbanisation trends in Eastern European cities are shaped based on local specificity, depending on their historical and political circumstances. Despite the strong urbanisation trends visible in the 20th century, the presence of a market economy and decentralisation of the planning system after 1989 contributed to a rapid urban sprawl and an outflow of residents from city districts. The wave of suburbanisation at the turn of the 20th and 21st centuries was preceded by a period of urbanisation after regaining independence after the First World War and the construction of settlements of the socialist period, as well as radically different urbanisation of a post-socialist state (see Hirt & Kovachev, 2018). The first two phases were often associated with the formation of well-thought-out layouts of housing estates and polycentric systems developing in cities, while the last phase was dominated by suburbanisation (Lorens, 2005). On the other hand, in the case of polycentric systems, the phenomenon of building structures moving towards the city region was more common (Sporna & Krzysztofik, 2022). As a response to the outflow of inhabitants, various urban regeneration and revitalisation programmes were established. However, the processes of urban transformation have not completely stifled interest in living or running a business in the suburban zones.

2.5. The Impact of the Covid-19 Pandemic on the Functioning of the City

The Covid-19 pandemic is the most recent issue affecting the shaping of the structure of a polycentric metropolis. Its long-term impact on urban regions requires verification in the long term. The pandemic has already influenced the transition of many enterprises to remote work (Dingel & Neiman, 2020; Kaushik & Guleria, 2020) and thus reduced the need to move between different areas (Fatmi, 2020). Declarations of various entrepreneurs indicate that the experience of working remotely may contribute to reducing the demand for office space in a permanent manner (Colliers, 2021). Many researchers also indicate that the implementation of the compact city—a city in which it is possible to meet needs without moving between districts—can limit the risk related to movement (e.g., Alraouf, 2021). Another concept mentioned in this matter is the 15-minute city (e.g., Abdelfattah

et al., 2022; Moreno et al., 2021), the basic assumption of which is the possibility of satisfying needs in the place of residence, but without introducing high-density buildings. The experience also shows that lockdowns increase the interest in green urban spaces, even after the reopening of indoor meeting places (Venter et al., 2021).

3. Methodology

For this research, building the resilience of a polycentric metropolis is assumed to be primarily a political process, requiring the development of mechanisms for effective and deliberate multi-level governance. The authors try to answer the question of how a resilient metropolitan organism can be formed in the context of specific development trends in different urban areas. This applies especially to the use of spatial policy instruments. In addition, the authors also try to present the dynamics of the process of shaping the polycentric metropolitan region in the example of the Gdansk–Sopot–Gdynia (also called the Tri-City) Metropolitan Area. To do so, they draw a timetable of the process embedded in the description of the evolution of the legislation and the appearance of the development funds.

Considering the theoretical foundations discussed above, after introducing the historical determinants of the polycentricity of the urban region of the Tri-City, the authors analyse changes that are taking place in the municipalities of the metropolitan area and its surroundings. These analyses include both quantitative (i.e., coverage of the municipalities/areas by local spatial development plans, which is considered as one of the main factors deciding the effectiveness of the spatial policy at the municipal level in Poland; population; size of residential areas and public green areas) and qualitative data (i.e., the presence of a shaped public space with a service infrastructure; access to city rail stations). Also, the authors focus on the usage of specific planning instruments and results of undertaken transformation processes. Special emphasis is given here to the presence of statutory planning documents and the above-mentioned coverage of the urban areas by planning documents. This is because local spatial development plans are statutory documents that define how areas within a municipality are to be developed. In Polish legal conditions, in the absence of such plans, individual plots of land can be developed based on special planning permits, frequently resulting in urban chaos and the destruction of the most valuable environmental and landscape complexes (Nowak et al., 2022).

The relationship between changes in legislation and planning documents and the effects of spatial policy cannot be captured in a specific or short time horizon. To illustrate the change, the authors decided to use data from the Polish Central Statistical Office available over the longest available time horizon.

Moreover, the authors look at supra-local activities aimed at integration and coordination of the development of the metropolitan area. For this purpose, legal acts, planning documents, policies, and key investments influencing spatial development were analysed as well as key investment projects of regional importance which served as catalysts of local and regional development.

The introduction of self-governing regions in 1999 and the adaptation of the binding act on spatial planning and development in 2003 are considered not only significant time intervals but at the same time the starting points for the conducted analysis. However, the case study also includes the key sources of the current conditions that occurred earlier, as well as the timing of available data. The spatial scope of the analysis is in line with the adopted Gdansk–Gdynia–Sopot Metropolitan Area Spatial Development Plan up to the year 2030.

4. Case Study: The Specificity of the Polycentricity of the Tri-City Metropolis

Despite the name, the Gdansk–Sopot–Gdynia Metropolitan Area is a bipolar system, the main hubs of which are the harbour and service centres of Gdansk and Gdynia (Meijers et al., 2014). The population of the third major city, Sopot, is similar to numerous other municipalities functionally related to the core of the metropolitan area. However, due to historic reasons, its role and position in the metropolitan area are considered greater than other similar-sized cities.

For analyses based on public statistical data, a delimitation was adopted following the 2017 Pomorskie Voivodeship Spatial Development Plan, within which the following zones are distinguished: the core of the metropolitan area, municipalities of the functional surroundings of this centre (constituting the functional zone of the metropolitan area), and the potential functional zone of the metropolitan area (see Figure 2).

4.1. Analysis: History to Present Day

The Tri-City area is a result of political changes after the end of the First World War, when—in close vicinity to the Free City of Gdansk—the Polish government decided to establish a new harbour and city—Gdynia (Krośnicka et al., 2021). After the Second World War, the development of the Tri-City as one organism became a natural consequence of the war devastation that was suffered especially in Gdansk (Stankiewicz & Szermer, 1959). The spine of this organism was constituted by an urban railway system and a linear layout of urban structures, stretching from Wejherowo to Tczew.

The situation changed as a result of the construction of the Tri-City bypass, which started in 1973 west from the existing urban complex. It gave rise to the urbanisation of former villages located on the border of the plateau and the forest strip covering it. In the 1980s, new large-scale housing estates were also planned and partly developed in former agricultural areas in the southern parts of Gdansk and western parts of Gdynia. Following

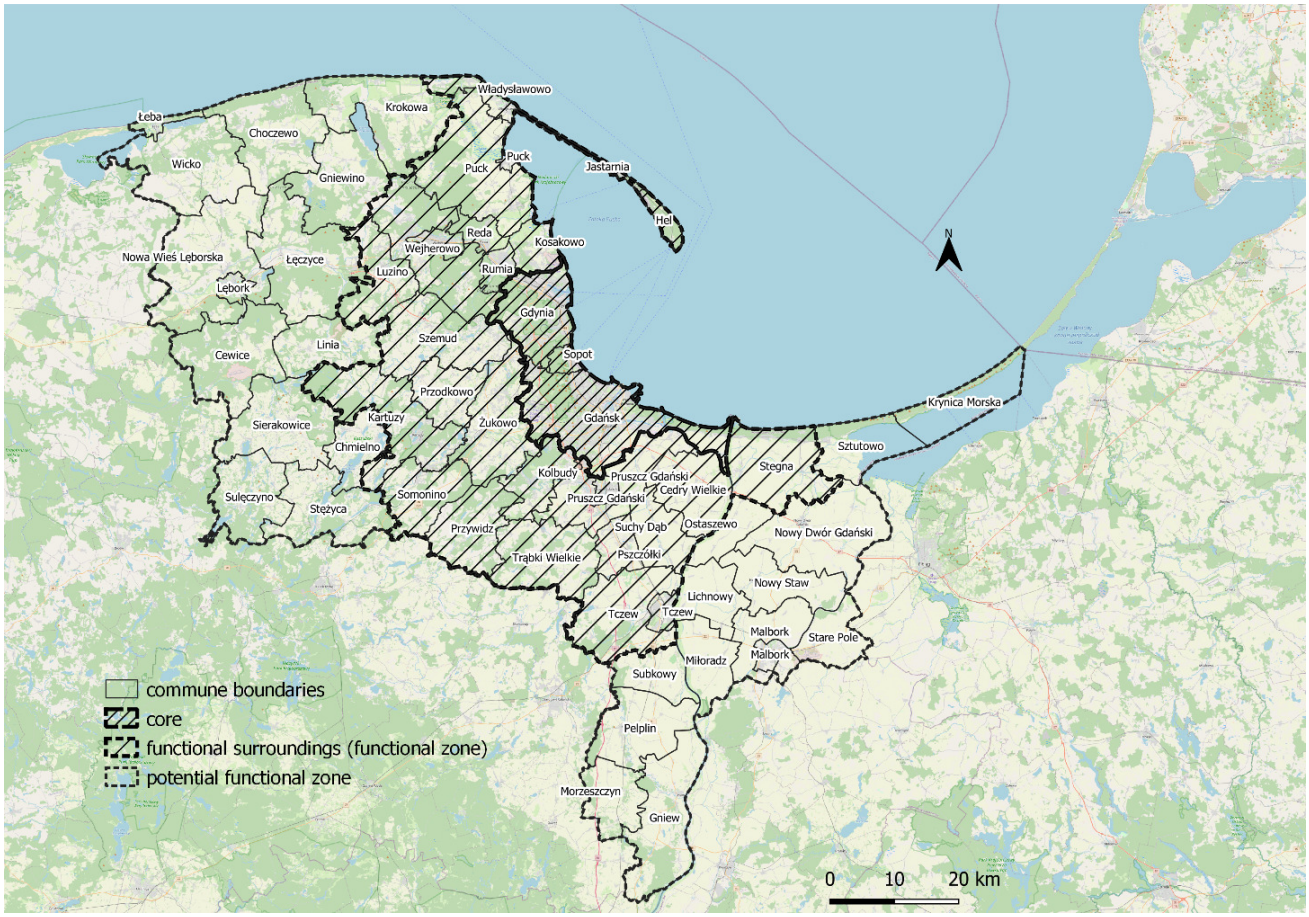

Figure 2. Metropolis structure. Source: Authors' drawing based on Pomorskie Biuro Planowania Regionalnego (2016) with Open Street Map.

the political changes after 1989, the new development areas were taken over by private developers offering new housing complexes. This resulted in changes within the older parts of the urban agglomeration (depopulation, degradation).

4.2. Public Policy Instruments

Within the Polish political system, the main instrument used in the process of shaping space is spatial planning, regulated by an appropriate act. It is organised at the national, regional, and local levels, with different entities responsible for each of them. In practice, this creates a system widely criticised for its ineffectiveness (Ciesielski et al., 2021), and one that for years has been looking forward to a thorough reform (Nowak et al., 2022).

The Act on Spatial Planning and Development indicates the possibility of drawing up a spatial development plan for a metropolitan area as a specific functional area. Plans adopted at a local level cannot contradict higher-level documents (e.g., metropolitan or regional), but it should be emphasised that these documents may only include tasks assigned to a given level of administration. This means that the development of urbanisation may be directed by designing a supra-local transport system or delineating large-scale plans of environmental protection, however it is not possible to impose alignments on the urban development or the location of service centres.

Activities related to the Tri-City Metropolitan Area are an example of an active coordination policy with an imperfect set of legal instruments available. In 1993, as part of an agreement between local governments, studies were commissioned on the possibilities of cooperation between agglomeration cities within a self-governing metropolis. The cooperation would concern the implementation of common ecological and cultural goals within the technical, social, and economic infrastructure (Pankau, 2009). Giving the region the responsibility for managing EU funds (2004) for purposes related to, inter alia, city renewal, encouraged local governments to create recovery programmes and thus include re-urbanisation processes in the city's strategic vision. At the same time, the regional spatial development plan began to play an additional role as an auxiliary document in the distribution of European Union funds. However, a breakthrough in tightening metropolitan cooperation was caused by the European Union's requirements for financing integrated territorial investments. To obtain funds, 51 municipalities joined forces within the Metropolitan Area Gdansk–Gdynia–Sopot

Association. This gave rise to cooperation in the fields of mobility, revitalisation, labour, and energy markets, with a current budget of around 250 million euros (Urząd Marszałkowski Województwa Pomorskiego, 2015).

Although external financing has become the main motivating factor for formal integration, the association has developed many documents not required by law to ensure adequate standards throughout the area. These documents were developed aside from the statutory regulations, which municipalities adopt based on the existing planning regulation (Ciesielski et al., 2021; Nowak et al., 2022). This applies, inter alia, to sustainable urban mobility plans and setting minimum standard plans in terms of support for the handicapped and for immigrant integration. In 2021, a diagnosis of adaptation and mitigation to climate change was made for the association. The Gdansk–Gdynia–Sopot Metropolitan Area Association also actively participated in creating the legislation regarding metropolises in the regional spatial development plan adopted in 2017. Thanks to the close cooperation between the particular municipalities and in-depth analyses that were conducted for the development of this plan, the document took on the role of a contract with detailed arrangements. As an example, legislation regarding the preservation of ecological corridors has been defined which helps prevent further development of sprawl.

Among the other instruments used at the regional level, one should also mention the incentives for better coordination of spatial policies related to the investment. An example of such an investment was the construction of the Pomeranian Metropolitan Railway between 2013 and 2015. As one of the few infrastructural investments, it is in many places ahead of the development plans and investments, which may influence the direction of the development of building areas. In this way, the largely uncontrolled spatial development of new housing estates has a chance to be focused and concentrated near the stops of the new line (Masik, 2018). In addition to the investments, regional authorities offer advisory assistance in the optimal use of zones around Pomorska Kolej Metropolitalna (Pomeranian Metropolitan Railway) stops which can be applicative to local governments (see Pomorskie Biuro Planowania Regionalnego, 2018).

4.3. Spatial Policy of Communes (Municipalities): Instruments and Phenomena

The set of data available through public statistics, in conjunction with the authors' observations regarding the quality of spatial development, allows for the analysis of instruments used and phenomena occurring in the area in question.

As discussed before, in Poland, the basic act of local law defining the development conditions is the Local Spatial Development Plan. Since this instrument is not always in place, planning legislation in Poland also includes a special procedure for providing potential investors with the planning permit, which takes the form of an administrative decision referred to as the "decision on development conditions" (Nowak & Kreja, 2012; Ziobrowski, 2009). Official statistics make it possible to estimate the percentage of the municipal areas covered by local planning regulations within the years between 2009 and 2020. As discussed before, in Polish realities, this is the transparency indicator of the local development policy (Nowak et al., 2022).

In the functional environment of the metropolis, greater diversification in the use of spatial policy instruments and their effects can be observed. In general, development processes in cities are predominantly defined by regulations included in the local plans (statutory planning). Within the borders of the municipalities located in the functional zone of the metropolitan area but out of the borders of main cities the situation is different—most of the new investments are developed based on planning permits included in the above-mentioned special administrative decisions regarding development conditions. Within the borders of more distant municipalities, the situation is more varied. The usage of these instruments was presented on the maps depicting the application of the spatial planning documents (local plans and special administrative decisions) in two time periods—2009 and 2020 (see Figure 3).

There are two more types of documents that should be mentioned in the context of planning policy instruments and shaping resilience in urban and metropolitan areas: revitalisation programmes and climate change adaptation plans. Neither is binding but they are closely related to spatial policy and affect the shape of obligatory documents. Currently, these types of documents are implemented on a smaller or larger scale in all cities of the analysed area. However, their impact on the depopulation problem of the degraded areas varies. In addition, the Urban Climate Adaptation Plans were developed between 2016 and 2018 and adopted in 2019 in all three cities of the metropolitan core. Although the majority of the diagnosed threats concern all three cities, these documents were developed and adopted separately. This was due to the methodology imposed by the Ministry of the Environment financing the project.

Based on the description of the changing planning environment within the Tri-City area, it is possible to discuss the appearing spatial phenomena. Their analysis allows concluding urbanisation trends, including the process of shaping centres within the polycentric structure. Among these trends the most important one is suburbanisation, which is associated with disordered mode of development of peripheral zones. The areas facing the most dynamic suburbanisation processes include rural areas located close to the main urban centres of the metropolitan area. In this group, we can identify a suburbanisation zone strongly associated with Gdansk, filled with multi-family housing estates and single-family housing, suburbanisation of Gdynia and Wejherowo in the vicinity of the Tri-City Landscape Park, dominated by single-family

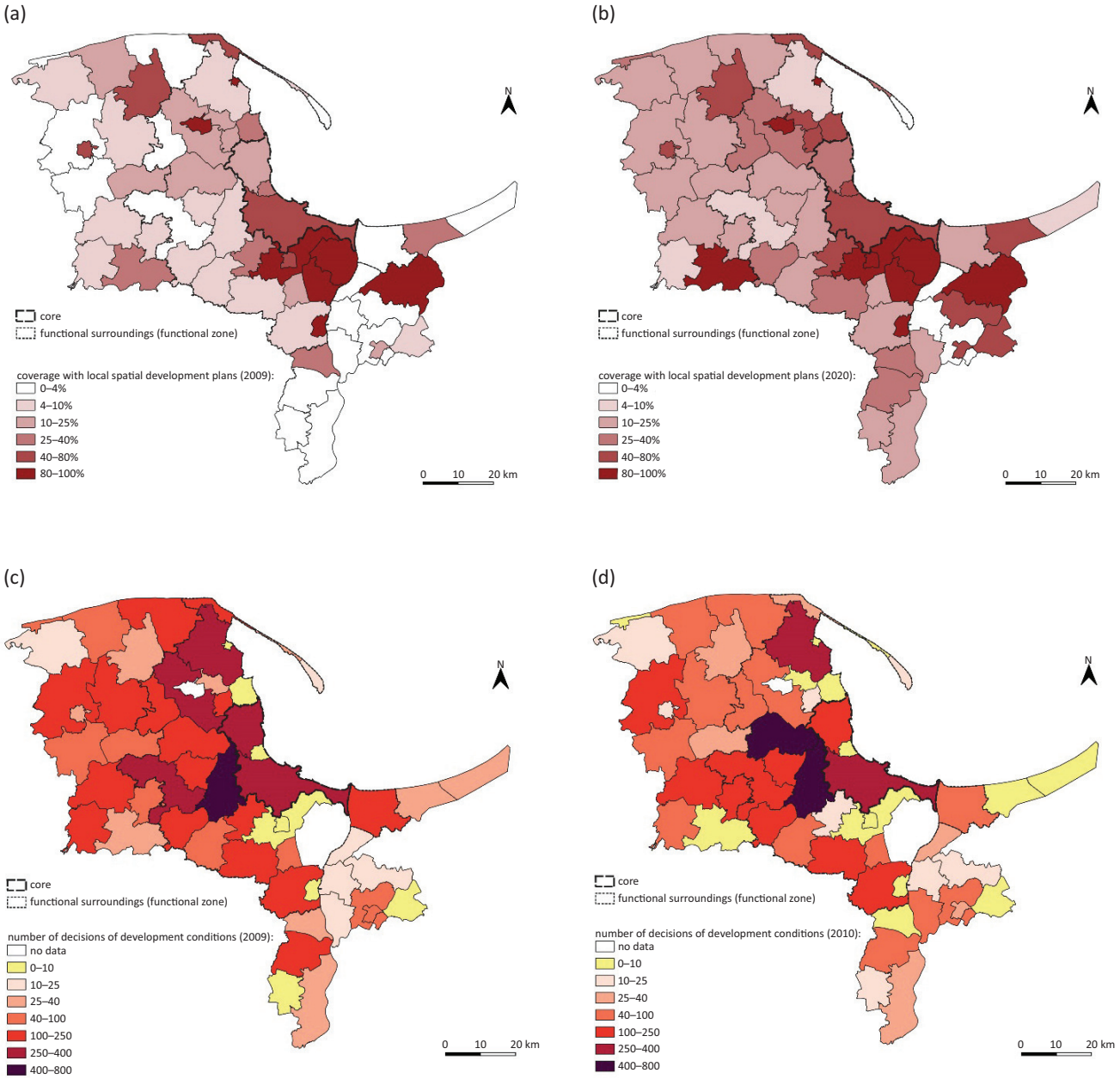

Figure 3. Application of spatial policy documents: (a) coverage with local spatial development plans (2009); (b) coverage with local spatial development plans (2020); (c) number of decisions on development conditions (2009); and (d) number of decisions on development conditions (2020).

housing, and the residential suburbanisation of Gdynia in the coastal zone. Interestingly, a bigger level of growth can be observed in cities established on the layout of former villages, which at the beginning of the transformation had a poorly developed spatial structure. Historically developed cities stagnate or have a slight increase in population with building developments appearing in the surrounding municipalities. The municipalities of the potential functional zone are generally affected by stagnation. Some exceptions are rural communes famous for their high birth rate as well as the surroundings of the towns of Malbork and Lębork (see Figure 4).

An important aspect is also the share of green areas in the city/commune. These areas include parks, park squares, street greenery, estate greenery, and communal forests. Due to the availability of data, we were able to compare the changes in 2004 and 2020. In terms of surface, the largest share of greenery is found in urban areas. However, the largest percentage increase in green areas—with some exceptions—occurs in urbanising rural communes. The limitation of green areas occurred largely in communes surrounded by state forests or adjacent to the seashore. It can be assumed that the inhabitants of these communes have access to green areas outside the district, but in the case of larger communes, this means that the availability of recreational areas for less mobile inhabitants is limited (see Figure 5).

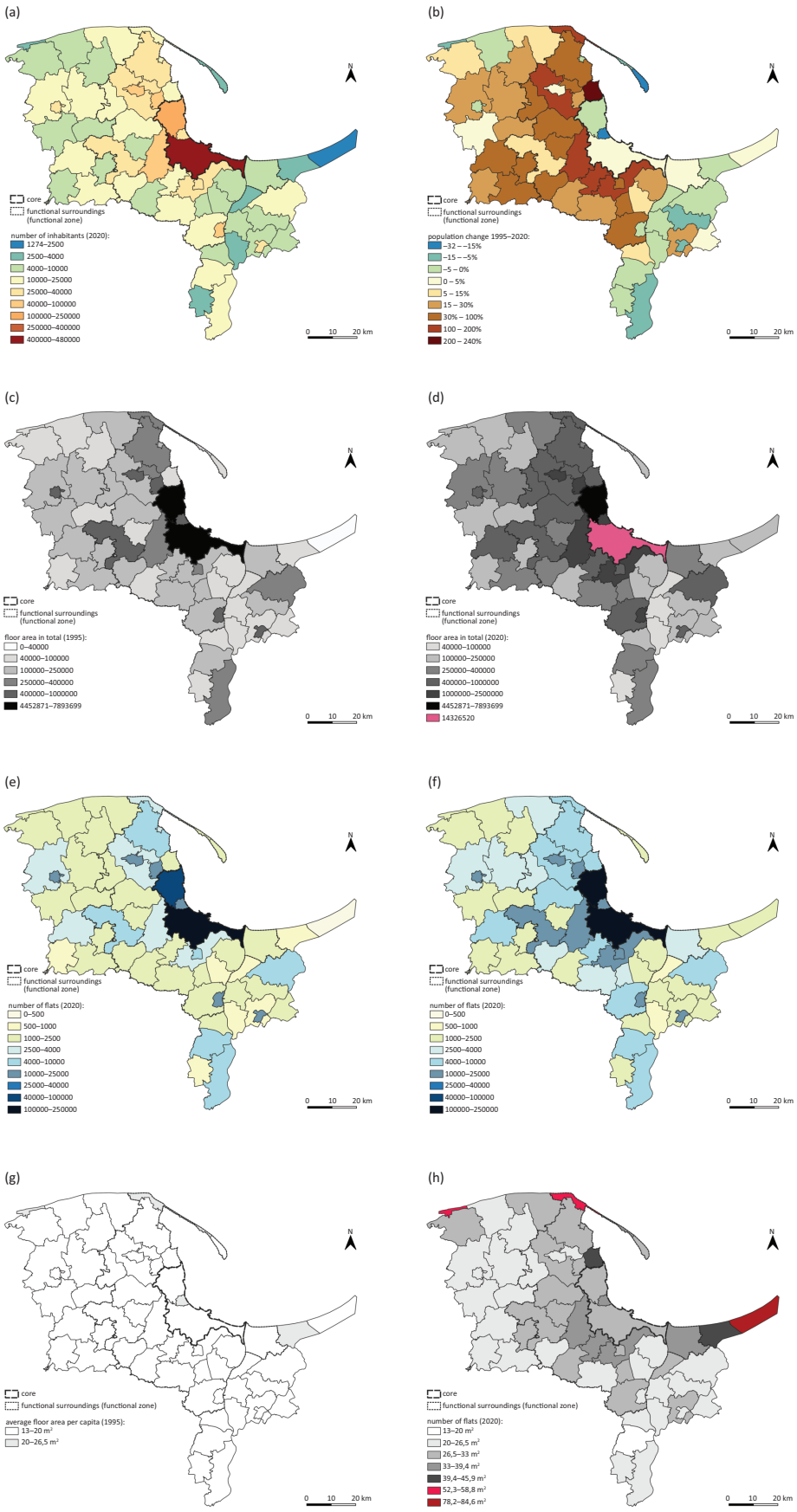

Figure 4. Population and housing offer: (a) number of inhabitants in communes in 2020; (b) difference in the number of inhabitants between 1995 and 2020; (c) total floor area (1995); (d) total floor area (2020); (e) number of flats (1995); (f) number of flats (2020); (g) average floor area per capita (1995); and (h) average floor area per capita (2020).

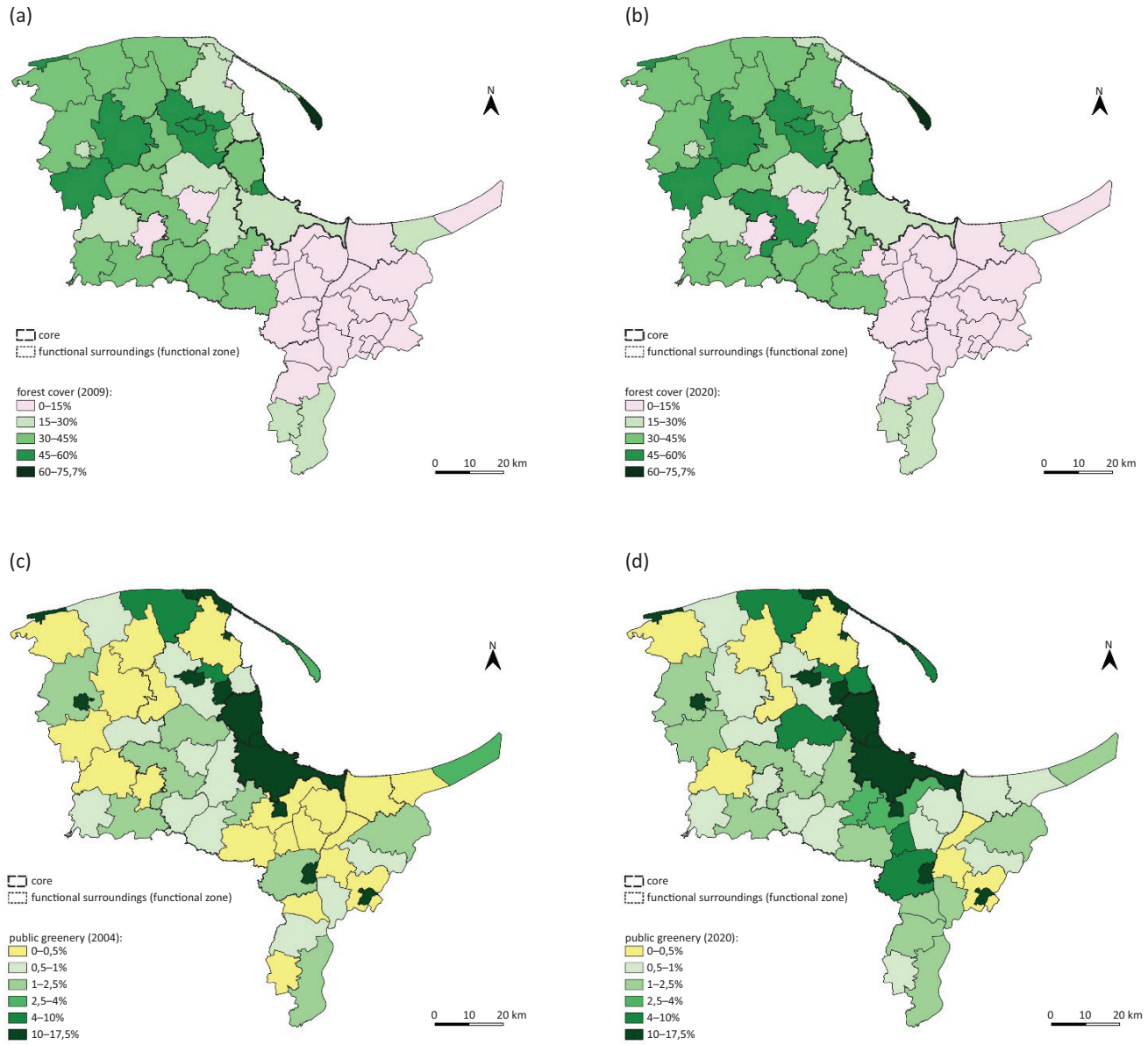

Figure 5. Availability of greenery in municipalities: (a) forest cover (2009); (b) forest cover (2020); (c) the share of public greenery in the area (2004); and (d) the share of public greenery in the area (2020).

5. Discussion

So far, research on the impact of planning on resilience in metropolitan areas has largely focused on social, transport, or, more recently, climate resilience issues. These are undoubtedly fundamental; however, in polycentric areas, the issue of resilience particularly depends on management coordination between different actors. Considering both the scientific context and the coordination of regional and global policies, it is advisable to undertake an analytical discourse on the specificity of polycentric metropolitan areas in the context of holistically understood resilience, including its indicators.

In the context of the analysis carried out, however, it can be stated that the issue of polycentricity and resilience of a metropolitan area is inextricably linked with the question of the importance of suburbanisation processes. Here, two dominant research trends can be identified: one focused on the negative effects of urban sprawl—considering violating ecological connectivity, the costs of transportation, or social problems—and another on reforming the problematic edge cities. Meanwhile, as the analysis shows, coordinated suburbanisation associated with effective public transport may be a response to the development needs of metropolises, at the same time ensuring affordable housing with access to ecosystem services for a wide group of people in the metropolitan labour market.

Regarding the analysed case study, it is also necessary to discuss whether the suburban zone of an Eastern European city, marked by overlapping dysfunctions of the central planning and the transformational

development leap era, has a chance to become an attractive living space, or is it doomed to progressive degradation, and thus an immunity decrease? At the initial stage of political transformation after 1989, the main factor driving the development of buildings outside cities was the supply of land that was relatively cheap and easy to invest in (Lorens, 2010). Research on SMEs, which account for a large share of entities in the Polish economy, shows a change in the trend. It has shown that the main determinants in the location of this type of activity are the proximity of a large city and possibilities of the local market (Chrzanowska & Drejerska, 2015) along with cost-driving factors. For large enterprises, it is factors related to technological infrastructure, proximity to highways, labour costs, and opportunities for cooperation with local enterprises that are important (Flieger, 2013). Recent research on the suburbanisation of Tri-City showed strong tendencies for the formation of SME clusters as well as the presence of the development quality factor in the decision-making process while choosing the location (Martyniuk-Pęczek et al., 2017).

It seems that as a result of the analysis presented within this article, the existing and developing concepts of space organisation serving to stimulate metropolitan resilience—with particular emphasis on polycentric metropolises—need to be revised. This applies both to the need for analysis of spatial policy and the organisational and financial solutions that support it. Possible results bear great application potential.

6. Conclusion

The polycentricity of the area in question is endangered by chaotic suburbanisation, which in turn contributes to a decrease in the resilience of the structure. On the other hand, ongoing transformation processes may contribute to intensifying the social stratification of the metropolitan area in the near future. It should be emphasised that similar effects may be caused by improperly carried out re-urbanisation processes. Access to green areas is also essential, and of particular importance considering the needs of residents resulting from the Covid-19 pandemic and the classically understood resistance of urban structures. The planned activation of further railway lines and the construction of a metropolitan bypass will certainly contribute to expanding the functional area of the metropolis and developing new building structures. This creates a potential for shaping centres with good access to the transport network and green areas, which will synergistically build the polycentric potential of the metropolitan area. To properly use the new conditions, it is necessary to adjust the spatial policy of the municipalities that will be affected by these phenomena. Thus, the spatial policy ensuring the resilience of polycentric spaces in metropolises is not synonymous with limiting investments but requires their coordination, also at a regional level.

It seems that the goals of the coordination policies pursued by both the *voivodeship* authorities and the Gdansk–Gdynia–Sopot Metropolitan Area Association are correct and favour shaping a resilient polycentric system; however, their effectiveness is limited by the absence of proper planning and implementation instruments. The regional development plan truly impacted the space only when it was combined with operational programmes and prospects of obtaining funds from local governments which were developing projects through dialogue with their neighbours. With these experiences in mind, it turns out that at the metropolitan level, organisation, use of investment preferences, and informal tools along with network planning give better results than attempts at rigid planning coordination. In the absence of a legal basis for political management, it was networking and collaboration that turned out to be the solution. Referring to the experiences from the central planning period, the unified political management does not guarantee avoidance of dysfunctions in spatial management, resulting in the development of less resistant structures. The optimal solution seems to be the development of a cooperation culture and maintaining supra-local authorities in the role of soft coordinators and facilitators of development processes.

Conflict of Interests

The authors declare no conflict of interests.

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Article

Examining Socio-Economic Inequality Among Commuters: The Case of the Jakarta Metropolitan Area

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Abstract
The rapid development of urban areas in surrounding regions has led to an increasing number of commuters within and between core-peripheral regions. However, variation in jobs and economic levels has exacerbated the socio-economic inequalities between metropolitan residents. Using the commuter data of the Jakarta Metropolitan Area, this study examines the socio-economic disparities of commuting behaviour, spatial patterns, and health between commuters with incomes lower and higher than the regional minimum wage. The article conducts quantitative descriptive statistics and a non-parametric test using the BPS—Statistics Indonesia 2019 commuter data that included 13,000 sample respondents from the Jakarta Province and its neighbouring districts. Our result reveals a significant impact of income level on the choice of private transportation mode, whilst having no effect on the choice of public transportation modes. Higher-income peripheral residents tend to commute to the core metropolitan area (Jakarta Province), while lower-income commuters typically travel between peripheral areas. The article also indicates the negative physical health impact of prolonged and early-hours commuting, especially for lower-income groups. The article proposes better public transportation that is convenient, safe, and reliable, to ensure a sustainable and resilient metropolitan area.

Keywords
commuters; health; inequality; Jakarta; metropolitan area; transportation

Issue
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1. Introduction

Metropolitan areas represent the rapid development of urban areas that sprawl to surrounding peripheral regions. This development transforms both urban and peripheral regions unprecedentedly, impacting social, economic, spatial, and health aspects. The emerging decentralisation of urban regimes globally exaggerates the impact of this urban and peripheral transformation as the variation of the local economy and governance capacities critically determine development. Thus, it is crucial for urban planning literature and empirical case studies to adapt and respond to the transformation.

The above conditions are reflected in the Jakarta Metropolitan Area (JMA) as the largest metropolitan area in Indonesia. Following the decentralisation in 2001, the metropolitan area included one province and eight autonomous districts in two other provinces. Following the dispersion of manufacturing industries in the late 1980s and residential housing development in the 1990s, economic activities in the JMA developed rapidly, supported by infrastructure and transportation expansion. This development and growing economic activities led to the increasing population and commuters within the metropolitan area.

Presently, studies on commuting in Indonesia focus on socio-economic characteristics (Herdayati & Eryando, 2020; Kusmawan et al., 2021), travel experience and psychology (Kusmawan & Susilowati, 2020), and mode choice (Adhi, 2012; Ilahi et al., 2021; Rizki et al., 2019; Rosida et al., 2019). In a spatial context, studies of the JMA mainly cover politics and governance (Firman, 1998;

Hudalah, 2017; Salim & Hudalah, 2020), socio-economics (Rukmana & Ramadhani, 2021; Winarso & Firman, 2002; Winarso et al., 2015), urban economies (Aritenang, 2020; Firman & Fahmi, 2017; Hudalah & Aritenang, 2017; Hudalah & Firman, 2012; Hudalah et al., 2013), and geographical networks (Aritenang, 2021; Hidayati et al., 2019; Indraprahasta & Derudder, 2017, 2019).

Despite the wide variation within the metropolitan area, there is limited understanding of how socio-economic inequality determines commuters' transportation mode choice, commuting behaviour, and health conditions. The JMA provides an important case study with Jakarta as the core metropolitan area, the country's capital, financial centre, and the densest city. With Jakarta as the core, Indonesia's largest metropolitan area is surrounded by eight districts from two neighbouring provinces.

We hypothesise that a wide range of socio-economic and income inequality between Jakarta and its neighbouring districts may explain commuting behaviour and transportation mode choice and, consequently, health conditions. In this sense, the core implies the central financial district with a concentration of companies and employees that attracts high- and low-income commuters. Thus, this study expands on how socio-economic disparity determines commuting patterns and health conditions. Our study is important to understand how socio-economic variations among districts exert commuting and health conditions within metropolitan areas.

As such, the article asks the question: To what extent are there current socio-economic inequalities in the JMA and how does this socio-economic disparity determine commuting behaviour and health issues in metropolitan areas? Drawing from the BPS—Statistics Indonesia 2019 commuter data that included 13,000 sample respondents from five districts in Jakarta and eight neighbouring districts in the JMA, the article found wide socio-economic disparity and the significance of the impact of income level on the choice of transportation mode. The article further found that the odds of physical health issues are higher among commuters that had daily long-duration commuting. This article presents these contributions and concludes with the importance of local governments and urban planners in expanding the provision of public transport for commuters from the metropolitan peripherals.

This article is structured as follows: In the next section, we elaborate on the literature framework of metropolitan inequalities, such as socio-economic and health issues. After, in the section that follows, we present commuting data and research methodologies. The analysis section examines commuting behaviour and spatial flow and links with socio-economic and health problems in JMA. The last section concludes the discussion and elaborates on research contributions.

2. Socio-Economic Variation and Its Impact on Spatial Pattern, Transportation, and Health in the Metropolitan Area

2.1. Metropolitan Socio-Economic and Health Inequalities

Cities grow and develop and together form urban areas with a broad scope transcending administrative boundaries. On a larger scale, a metropolitan area emerges as an urban area that is administratively separate but spatially connected and consists of the city centre and the surrounding area (Heinelt & Kübler, 2005). Through the development of cities, capital accumulation creates an increasingly large and complex variety of activities. Supported by advances in transportation and communication technology and connected with other cities, this accelerates capital accumulation in metropolitan areas (Sheppard, 2019). Thus, metropolitan areas often act as centres of high concentration activities to become an engine of regional growth on a regional, national, and even international scale. This accumulation of capital simultaneously attracts activities and people to engage in activities in the metropolitan area.

Cities have the potential to enhance development and growth, not only internally within their territory but also beyond their territory boundaries (Fan, 1999). The influence of urban growth and its activities increase the benefit distribution effect on the economy through two main types of development, i.e., intensive margin or internal growth and extensive margin or external development (Cordoba, 2008; Eaton & Eckstein, 1997). Studies have shown that average commuting activities reflect a range of socio-economic characteristics and urban forms (Watts, 2009). In the US, 45 of 916 metropolitan areas had gaps wider than the national gap. The average income of the top 1% was at least 35 times greater than the average income of the bottom 99% (Sommeiller & Price, 2018). The extensive studies on metropolitan areas by Ingram (1998) and Suarez-Villa (1988) in various parts of the world found a similar development pattern into metropolitan evolution based on population and economic characteristics. This metropolitan evolution has six phases, categorised as three stages, namely: the rapid development stage consisting of phases one and two; the second stage is maturity consisting of phases three and four, with phase three as the peak of metropolitan growth; and the stability stage, namely in phases five and six which show the stability of the region and the possibility of a decline in development. In this phase, there are two possible developments where the metropolitan area has the opportunity to expand internationally. The other possibility is a decline in growth that depends on the policies implemented in the future development of the metropolitan area.

Although rapid urbanisation has created economic opportunities for many cities, it has also resulted in serious challenges for local governments: increased air

and water pollution, transportation gridlock, deteriorating infrastructure, increased violence and crime, rising poverty and urban slums, and widening income disparities. Another causal-effect problem is that urban transport could contribute to poverty reduction indirectly by boosting the urban activities and directly by meeting the daily needs of poor people. However, urban growth also increases transport costs as efficiency and economies of agglomeration generate urban growth. As these cities grow and become more affluent, vehicle ownership and use grow more rapidly than the available road space, increasing congestion and traffic-generated air pollution (Carruthers et al., 2005). The study proposes to improve transportation affordability by identifying urban income distribution, provision of passes and concessions for targeted groups, and changing fare structure and level.

The above problems are magnified in a larger metropolitan area. The more districts and populations included in a metropolitan area, the more socio-economic challenges, infrastructure and transportation issues, and health problems occur. Recently, Unceta et al. (2020), using spatial analysis, examined socio-economic disparities (economic level, land, and property size) in the metropolitan area in the Global South. The study suggests problems occurring in metropolitan areas became harder to tackle once the metropolitan size and issues expanded and diversified, such as socio-economic, spatial, and health concerns. Studies in US metropolitan areas show that housing for lower-income households is less affordable in metropolitan areas with higher inequality. Thus, average commuting distances and the number of trips have increased between sub-centres. Jobs located in sub-centres are filled by non-residents who generally live quite far from their employment sub-centre. Hence, the average commuting distance has increased regardless of where people live (Aguilera, 2005). In particular, Sandow (2019) statistically confirms long-distance commuters pay high costs as the activity has reduced the relationship quality and increased the risk of separation. However, a more sustainable work-life balance may be more possible if the woman is a persistent long-distance commuter.

Spatial disparities also occurred among metropolitan areas. In Mexico, metropolitans suggest informal work locations may depend, in part, on the distance to the place of residence. Informal work represents close to 57% of the economic activity in the city and is present in all economic sectors and income categories and concentrated in lower-income groups (Suárez et al., 2016). In Germany, less educated people live more commonly outside the core cities of the Central German Metropolitan Region and its respective city regions and are more inclined to commute to their workplaces within one of the city regions (Kauffmann, 2016). These studies show that less educated and informal workers prefer jobs where income is maximised, and transportation costs minimised.

In contrast, skilled labour markets span over larger territories. However, they tend to do this within the borders of the respective states as found in large cities such as Paris (Aguilera, 2005), Central German Metropolitan Region (Kauffmann, 2016), and London (Manley, 2021), and also cities in developing countries, such as Lima (Fernández-de-Córdova et al., 2021) and Jakarta (Rukmana & Ramadhani, 2021). Furthermore, studies also found further segregation with the most economical resources found in the higher-income community (Hipp & Kim, 2021; Manley, 2021; Sommeiller & Price, 2018).

Inequality is a function of economic forces at the wider metropolitan scale through the strong relationship between levels and changes in income inequality over time in cities and metro areas. A recent study shows that the polycentric urban model could contribute to reducing the commuting distance by allowing people to locate within or close to their employment sub-centre (Watts, 2009). Metropolitan resilience requires comprehensive strategies to tackle significant disparities between rich and poor households in terms of institutions, education and workforce development, transportation, and minimum wages (Berube & Holmes, 2016). In this sense, local governments are demanded by residents to expand and maintain urban services, both infrastructure such as water, sewers, transit, and roads, and socio-economic services such as social services, education, and health (Slack, 2019). Various studies on metropolitan areas have pointed to the importance of multi-level governance as a one-tier consolidated structure struggles to determine the appropriate geographic boundary for the metropolitan government. In addition, geographic boundaries of metropolitan governments rarely coincide with the boundaries of the economic region. These economic boundaries tend to expand over time and may outgrow their local political boundaries.

2.2. Socio-Economic and Health Inequalities in the Jakarta Metropolitan Area

This article follows the neoliberalism literature on spatialities as proposed by Herlambang et al. (2019). The article argues that neoliberal application from a geographical perspective leads to two implications; first, various spatialities of neoliberalism are interdependent. Thus, neoliberalisation in any territory depends on both local place-based context and relations with other places and across scales. Second, as these spatialities are not fixed contextual features, neoliberalisation would produce spatialities that implicate subsequent spatio-temporal trajectories. In the case of the JMA, urban land transformation is dominated by large real-estate development. Consequently, a new generation of middle-class gated communities was segregated from other parts of the urban area while simultaneously interacting in terms of mobility and other activities.

There are various studies on the variation of socio-economic disparities in metropolitan and urban areas in the JMA. The study by Rukmana and Ramadhani (2021)

suggests that the population in the JMA is dominated by the middle occupational group, which includes clerks, machine operators, industrial workers, technicians, and sellers. However, between 2011 and 2018, the study reveals an increasing share of JMA residents in top occupational groups, such as managers and professionals.

The study by Suryahadi and Marlina (2019) shows that the poverty rate in the JMA only slightly declined from 6% in 2004 to 5.3% in 2014, suggesting high economic growth in the JMA area is insignificant to reduce the poverty rate in the metropolitan area. In particular, poverty rates in the areas within the core metropolis, Jakarta, are lower than in the peripheral areas, with the lowest poverty rate in South Tangerang City (1.7% poverty rate) and the highest in Bogor City (7.7%).

This was confirmed by Rukmana and Ramadhani's (2021) study that focused on occupational and household indexes. The study found that urban transformation in the JMA has led to a homogenous socio-economic area in the peripheral region. Household expenditure inequality is lower than in the core metropolitan area of Jakarta. The high Gini indices in the municipalities of Jakarta province refer to the existence of urban kampongs neighbouring the high-rise building with luxury apartments, offices, and shopping centre. On the other hand, segregation in the periphery occurred because of gated communities developed by the private sector since the 1980s (Winarso et al., 2015). Furthermore, a spatial analysis study by Rukmana and Ramadhani (2021) found a high concentration of the top occupational groups in South Tangerang City, where the development of a new central business district and middle-upper class housing is supported with good accessibility and connected with highways and train routes. Previous studies mapped that these middle-upper class housings include elite real estates such as Bumi Serpong Damai, Gading Serpong, Bintaro Jaya, and Alam Sutera (Herlambang et al., 2019; Winarso et al., 2015).

In the early period of real estate development in the JMA, the housing development sector was dominated by middle-upper class buyers with an average of 3.1 million Indonesia rupiah (IDR), compared to the average Jakarta wage of 255,463 IDR. In addition, it was highly educated, 59% compared to only 2.89% in Jakarta (Winarso & Firman, 2002). However, the figure shifted with the average income in the JMA becoming comparable to the average urban Indonesian income in 2015 (Winarso et al., 2015). A recent study suggests that Central Jakarta City became a concentration area for both the top occupational groups and bottom occupational groups due to the concentration of luxury houses and apartments, shopping malls, and the central business district that are side-by-side with many informal housing areas of urban kampongs. These urban kampongs are residential locations for informal sector workers such as street vendors, cleaning workers, and security guards. Besides central Jakarta, many bottom occupational group workers reside in Tangerang City, which is considered close to the core metropolitan area. With more than 60% of Jakarta's urban population estimated to live in kampong, this reveals the un-controlled developments in the JMA. The kampong itself has persistently been a source of socio-economic conflicts since the 1990s (Marulanda, 1993; Steinberg, 2007).

Considering the decentralisation structure in Indonesia, it is crucial to strengthen local government level capacities to govern local resources and financial capacity to overcome the implication of being part of a metropolitan area.

3. Data and Methodology

The article uses the commuters 2019 survey raw data collected by the BPS—Statistics Indonesia with a spatial stratified sampling strategy with a two-stage sampling selection method at the subdistrict level. The sampling considers household and population size distribution based on Indonesia's 2010 census data. The survey also employed the 2015 Indonesia inter-census data and the annual Indonesia National Labour Force Survey to determine the sample distribution (Sofiyandi & Siregar, 2020).

The survey consists of comprehensive data on commuters' residential location and economic and social characteristics, including income, job characteristics, education background, health conditions, and their daily commuting activities such as destination and transportation modes. The household data are linked to the questionnaire responses for each individual. There are more than 13,000 respondents from the JMA.

The commuters survey data include samples from the population that resides within the 13 districts in the JMA. These districts are eight municipalities and three regencies from the three provinces; Jakarta Province (Central Jakarta, North Jakarta, South Jakarta, East Jakarta, and West Jakarta districts) as the core metropolitan area and West Java Province (Depok, Bogor, Bogor City, Bekasi, and Bekasi City) and Banten Province (Tangerang, Tangerang City, and South Tangerang) as the peripheral regions.

The following map presents the JMA infrastructure connectivity (highway, primary roads, and railway) and distribution of residential areas (real estate and houses) with its location within the Java Island (inset map; Figure 1). The map suggests a high concentration of infrastructure and residential area in Tangerang Regency (West JMA), Bekasi (East JMA), Depok (South JMA), and leapfrogging development in Bogor City (Far-South JMA). The map is obtained from OpenStreetMap Indonesia, which has been updating and verifying various digital map features of Jakarta and other provinces in Indonesia (OpenStreetMap Indonesia, 2021).

Several variables are analysed to examine commuters' socio-economic, spatial, and health aspects. First, socio-economic variables included transportation mode, house size, and income, whereas salary range determines commuters' transportation choice. We also

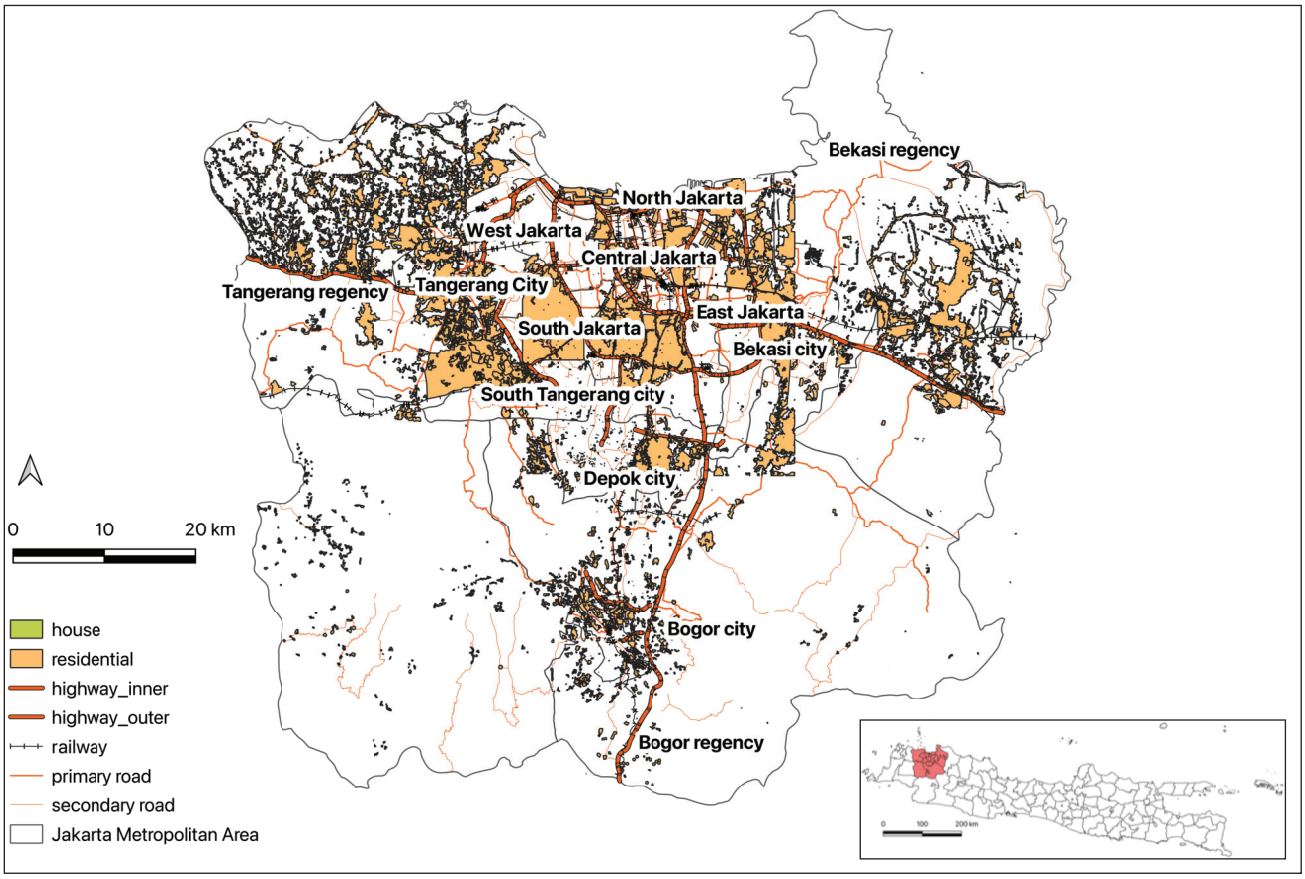

Figure 1. Distribution of infrastructure connectivity and residential areas in JMA.

use the property size to approach socio-economic inequality as privacy in the residence may describe the level of welfare of a household. This variable is reflected in the floor area of the house per capita with a decent size; the minimum is 8 m^2 per capita (BPS—Statistics Indonesia, 2000). In Jakarta, 72.3% of households occupy a floor area per capita of less than 8 m^2 (BPS—Statistics Indonesia, 2019). Specifically, more than 33% of households have a 50 m^2 or 12.5 m^2 per person (Beritagar, 2015).

Second, spatial commuting is approximated by commuting destination (core or peripheral region), and commuting characteristics are distance, duration, and hours of commuting. Third, health aspects, including mental and physical health, have been widely studied in previous metropolitan commuter studies (Jacob et al., 2021; Tajalli & Hajbabaie, 2017; Wener et al., 2003).

The table below depicts the transportation choice of JMA commuters based on the salary range that captures the transportation choice of more than 2.43 million commuters, calculated from the district-based weighted 13,000 samples (Table 1). Here we define *active transport commuters* as people that favour walking and cycling for daily mobility (Scheepers et al., 2014). The table reveals that the income level of JMA commuters is around the regional minimum wage (between 3.4 and 4.5 million IDR), with more than 78% having a higher income than this threshold. The table further suggests the importance of motorcycle ride-hailing for JMA commuters. It accounts for more than 33% of total commuters that use motorcycles. A motorcycle is more popular in the lower-income group, with only 0.15% using public transportation (minibus, bus, commuter train, and TransJakarta), compared to 19.5% of the higher-income group.

3.1. Methodology

In this article, we utilised two research methods: summary statistics and logistic regressions. First, summary statistics explore a series of salary range variables conditioned by other variables such as transportation mode choice, area of residents, destination, commuting characteristics, and health conditions.

Second, we also use logistic regression, which is used to model binary outcome variables. In this article, the model attempts to explain the descriptive statistics further. Hence, the model examines the odds of an observation belonging to a particular category, such as choice of transportation mode, commuting characteristics, and health conditions.

4. Analysis and Discussion

To examine the socio-economic and health variation of commuters, we conduct several analyses on

Table 1. Salary range proportion (in million IDR), by transportation mode.

Transportation Mode	<1.5 million IDR	1.5 to 3 million IDR	3 to 4.5 million IDR	4.5 to 6 million IDR	6 to 7.5 million IDR	>7.5 million IDR
Active transportation	721	3,126	1,364	0	581	0
Motorcycle	15,881	190,206	811,451	317,061	768,732	146,552
Motor-ride-hailing	336	15,795	37,508	17,354	711,248	14,827
Car	1,689	527,623	9,189	24,572	26,135	170,508
Car-hailing	0	658	0	0	285	4,232
Company car	0	1,753	27,170	11,201	10,347	8,449
Car-sharing	0	785	4,356	733	522	2,513
Minibus (angkutan kota/*angkot*)	6,284	27,306	40,527	8,506	4,051	6,151
Bus	0	3,196	17,236	17,347	10,383	14,657
Commuter train	5,360	22,837	88,556	35,865	34,197	48,889
TransJakarta	342	6,708	38,504	15,777	15,922	13,193
Others	593	892	1,407	0	0	0
Total	31,206	279,407	1,077,268	448,416	279,707	429,971

transportation mode, spatial flow, commuting characteristics, job type, and health conditions.

First, we examine the salary range with the choice of transportation mode among JMA commuters. The salary range threshold is 4.5 million IDR as the minimum salary in the JMA (*upah minimum regional* [UMR]). Below the average, the threshold is lower than UMR and vice-versa (Table 2). There is a significantly higher share of commuters in the lower-income group that travel by motorcycle than the higher-income group, 74 and 46%, respectively. In the lower-income group, the following transportation mode is commuter trains, buses, and TransJakarta, suggesting the importance of public transportation for this income group. While in the higher-income group, the next transportation modes are private cars, commuter trains, and buses. The share of commuters from the high-income group is higher than ride-hailing, indicating the higher disposal budget or demand for time-effective transportation, considering JMA's heavy traffic. Overall, the table reveals a relatively similar share of commuters who travel with a private vehicle, about 73%, in both income groups, with higher-income commuters using motorcycles and cars.

Table 3 presents a cross-analysis of the share of commuters' income level group with the residential area. The table suggests a variation in the socio-economic share of the size of residential areas and the origin of districts in the core and peripheral areas. This table also indicates that commuters from Jakarta have a small residential area, with 68% of commuters living in a residential area of less than the threshold of 8 m^2 per capita. Thus, the table captures the high share of the small residential area and low-income groups in Jakarta, as suggested by previous studies which suggest that commuter characteristics reflect the Jakarta population, especially in residents in the urban kampong (Herlambang et al., 2019; Winarso et al., 2015).

Furthermore, the table also shows that commuters from South Tangerang City and Bogor Regency are among the wealthiest residents in the JMA with a higher

Table 2. Salary range proportion (%), by transportation mode.

	Above UMR	Below UMR
Active transportation	0.14	0.36
Motorcycle	56.09	73.49
Ride-hailing	5.34	3.78
Private car	17.81	3.61
Car-ride-hailing	0.26	0.05
Public bus	6.57	6.70
Commuter train	10.13	8.51
TransJakarta	3.59	3.34
Others	0.06	0.17

Table 3. Salary range proportion (%) and area of residents (m^2), by residential districts.

	Not decent (less than 8 m^2)	Decent (between 8 m^2 and 12.5 m^2)	More than decent (more than 12.5 m^2)	Above UMR	Low UMR
South Jakarta	13.78	7.28	5.66	6.66	7.61
East Jakarta	15.05	10.89	9.43	10.3	10.69
Central Jakarta	8.42	4.09	1.74	2.84	3.38
West Jakarta	21.2	9.88	5.79	7.93	9.56
North Jakarta	9.58	3.84	3.21	3.97	4.53
Bogor Regency	4.55	14.31	13.79	10.93	14.42
Bekasi Regency	1.09	5.99	9	8.74	5.77
Bogor City	2.82	2.88	2.29	2.3	2.65
Bekasi City	5.84	6.93	13.68	12.75	9.92
Depok City	10.02	9.18	13.25	13.8	10.17
Tangerang Regency	1.56	9.29	7.95	6.8	7.77
Tangerang City	3.88	8.2	7.63	6.76	7.68
South Tangerang City	2.21	7.25	6.56	6.21	5.86

share of the population in the large residential areas, whilst commuters from Bekasi City and Depok City are among the highest income earners in the JMA. This finding confirms previous studies on the distribution of real estate development and socio-economic distribution in the JMA (Rukmana & Ramadhani, 2021).

Table 4 depicts the comparison of income groups with a destination within the metropolitan area. The table suggests a higher share of commuters to Jakarta, the core metropolitan area, with more than 63% in both income groups. Nevertheless, the figure may suggest the presence of polycentricity in the JMA, with almost one in three commuters travelling daily to the peripheral regions. The table further shows that commuters within Jakarta are higher among the lower-income group with more than 44%, compared to only 37% of commuters that has higher income commute within Jakarta. On the other hand, the table also reveals a higher share of higher-income group commuters that travel daily between peripheral regions. Furthermore, the table shows that residents from Bekasi and Depok cities are among the highest share of commuters to core cities. In contrast, commuters from Bogor and Tangerang regencies are the highest contributors within peripheral regions.

Table 5 presents the income group and commuting characteristics. The table reveals that commuters in the JMA mainly travel less than 20 km, less than one hour, and during rush hour before 7 am. In particular, the table shows a slightly higher share of the lower-income group that spends less than an hour commuting compared to the higher-income group, 76.72 and 72.44%, respectively. As such, a higher share of the higher-income group commutes early before 7 am. Typically in Indonesian metropolitan areas, due to congestion and school hours, the daily rush hour is before 7 am, which is confirmed by the table with more than half of commuters in the JMA departing during rush hour.

Table 4. Salary range proportion (%), by commuting destination.

	To Core Regions		To Peripheral Regions	
	Above UMR	Low UMR	Above UMR	Low UMR
South Jakarta	4.55	5.14	2.20	2.48
East Jakarta	7.81	8.03	2.56	2.87
Central Jakarta	2.59	3.24	0.28	0.20
West Jakarta	6.27	7.48	1.81	2.27
North Jakarta	3.83	4.08	0.16	0.54
Bogor Regency	3.73	5.74	7.31	8.66
Bekasi Regency	4.02	3.02	4.20	2.32
Bogor City	0.64	0.48	1.66	2.20
Bekasi City	10.00	7.12	2.83	2.89
Depok City	10.91	7.37	3.08	3.00
Tang Regency	2.50	1.81	3.93	5.42
Tang City	5.55	5.21	1.28	2.47
South Tangerang City	5.29	4.61	1.02	1.34

Table 5. Salary range proportion (%), by commuting characteristics.

	Above UMR	Lower UMR
Distance		
<20 km	55.21	59.19
<40 km	36.85	33.41
>40 km	7.94	7.40
Duration		
<30 minutes	33.93	35.15
<1 hour	38.51	41.57
>1 hour	27.56	23.29
Time		
<7 am	54.66	50.5
Between 7 and 10 am	38.52	43.28
>10 am	6.82	6.22

We also analyse the share of type of job in different income groups. It suggests a relatively higher share of the lower-income group that works as labour and staff in offices. The share of higher-income commuters work as freelance/informal workers and self-employed is about 23.50% of the total number of commuters in this income group. The table may represent the booming share of gig labour and entrepreneurship in the JMA. This variation in the type of job may determine the income level and commuting hours.

We also examined the income group and health conditions among commuters. The analysis reveals a higher share of the lower-income group that experience daily health problems, both physical and mental issues, 27.13 and 24.18%, respectively. Specifically, the analysis shows that both physical health problems such as headaches and sore pain are found higher in the lower-income group, in both private and public transportation commuters. In terms of mental health, the variation among income groups is indifferent, with about 32–42% among the commuters. This finding also confirms several studies in Europe and the US that long-distance commuters suffer from headaches, backaches, and mental illness, among others, as reported by Schaefer (2005).

Furthermore, the health issue is consistent with a higher share of lower-income commuters that use public transportation. Compared with commuters in the US (Kylstra, 2014), Indonesian commuters have longer daily commute hours, 25.5 minutes and more than 30 minutes, respectively. As such, health threats are much higher to Indonesian commuters, including physical and mental health.

We also examine the socio-economic determinants of peripheral commuting (Table 6). The table suggests that a 1% increase in income would reduce the probability of commuting between peripherals by 0.535. In the service sector, commuting between peripherals is less likely by 0.529 times compared to the manufacturing

Table 6. Odds ratio of logistic regression of commuting between peripheral districts.

	Coefficient	Standard Error	Odd Ratio
Income	−0.625***	0.086	0.535
Economic Sector			
Primary	−0.040	0.270	0.961
Service	−0.638***	0.088	0.529
Formal job	−0.465	0.360	0.628
Private vehicle	0.316**	0.107	1.372
Married	0.224*	0.089	1.251
Constant	8.571	1.337	—
Tests	Coefficient	P > |z|	
LR	140.97	0.000	
Wald	125.35	0.000	
Hosmer-Lemeshow	7.53	0.480	

Note: * p < 0.05; ** p < 0.01; *** p < 0.001.

sector. Furthermore, the table also indicates that commuting between peripherals using a private vehicle is more likely 1.372 times compared to the use of public transportation. This finding indicates that between peripherals, commuters tend to have lower incomes and work in the manufacturing sector. There is also a higher probability that these commuters use a private vehicle and are married.

Table 7 presents socio-economic determinants of transportation mode choice. The table suggests that a 1% increase in income would increase the probability of commuting using a private vehicle by 1.367, while commuters with less duration and shorter distances and having a formal job would have higher odds of commuting using a private vehicle. The odds of using a private vehicle are also lower for peripheral to core commuters compared to other commuters, which may lower private vehicle ownership for peripheral commuters or the presence of alternative commuting transportation modes such as trains and buses. The tests suggest that the fitted model is correct and rejects the null hypothesis.

Table 8 examines the marginal effect of using private vehicle commuting time, distance, duration, and formal worker commuters from peripheral to a core area and between peripheral areas. Early hour commuters (before 10 am) would have about 83% probability of using private vehicles among peripheral commuters. However, there would be around a 74.4% probability of using private vehicles for peripheral-core commuters. In contrast, long-distance commuters (more than 30km) would have about 86.4% probability of using a private vehicle between peripheral areas, but only a 78.7% chance of using a private vehicle for the peripheral-core commuter. Furthermore, shorter duration commuters (less than one hour) would have an 89.2% probability of using private vehicles for peri-peri commuting, compared to only an 85.3% chance of using a private vehicle for peripheral-core commuting. Formal worker commuters would have about an 83.1% probability of using a private vehicle for peri-peri commuting. However, they would have less than a 74.5% probability of using a private vehicle for peri-core commuting.

We also compare the marginal effect of income and job status of using a private vehicle for commuters from the peripheral to the core and between peripherals. High-income formal worker commuters would have about 79.9% probability of using a private vehicle for peri-peri commuting but would have less than 78.8% probability of using a private vehicle for peri-core commuting, while low-income informal worker commuters

Table 7. Odds ratio of logistic regression of transportation mode choices.

	Coefficient	Standard Error	Odd Ratio
Income (ln)	0.312***	0.083	1.367
Duration	0.978***	0.101	2.658
Distance	0.651***	0.106	1.918
Formal job	0.888*	0.399	2.430
Commute			
Between peripherals	0.353**	0.120	1.423
Core-peripheral	0.469**	0.174	1.598
Between cores	0.311**	0.110	1.365
Married	0.515***	0.091	1.674
Constant	−5.768	1.335	—
Tests	Coefficient	P > |z|	
LR test	297.13	0.000	
Wald test	273.05	0.000	
Hosmer-Lemeshow test	9.30	0.317	

Note: * p < 0.05; ** p < 0.01; *** p < 0.001.

Table 8. Margins of transportation mode choices of commuters.

	Margin commuting time	Margin commuting distance	Margin duration time	Margin formal workers
Peri-peri	0.830***	0.864***	0.892***	0.831***
	(0.013)	(0.011)	(0.010)	(0.013)
Peri-core	0.744***	0.787***	0.853***	0.745***
	(0.011)	(0.012)	(0.012)	(0.011)

Note: * p < 0.05; ** p < 0.01; *** p < 0.001.

would have about 61.7% probability of using a private vehicle for peri-peri commuting but would have less than 60.1% probability of using a private vehicle for peri-core commuting.

Finally, Table 9 presents the socio-economic determinants of health status among commuters. The table suggests that commuters from core to periphery and being married have 1.47 and 1.18 times higher odds of health problems, either physical or stress-related. Nevertheless, the analysis suggests the insignificance of socio-economic statuses such as income level and commuting using a private vehicle to explain the odds of having health issues. However, using a private vehicle may lower the odds of having health issues indirectly, by reducing waiting time for public transportation and, hence, commuting duration.

5. Conclusion

This article contributes to the current literature on socio-economic inequalities among commuters in metropolitan areas. This study examines to what extent uneven cities and suburbs exacerbate socio-economic and health inequalities in the JMA. Our study presents significant socio-economic and health diversity among commuters using the BPS—Statistics Indonesia 2019 commuting data. The empirical study results highlight income level variation in the choice of private transportation mode, with the lower-income group dominated by motorcycle users and the higher-income group varying from using a motorcycle, private cars, and ride-hailing. This may also suggest that the latter group has a higher disposable income for ride-hailing services. On the other hand, there is no significant effect of income level on the choice of public transportation modes, with about 6.6% and 9% of each income group using the bus and commuting train, respectively.

Our subsequent analysis suggests that higher-income peripheral residents commute to the core metropolitan area, Jakarta, and a higher share of lower-income commuters travels between peripheral areas. On the other hand, the analysis suggests that peripheral commuting is less congested as the commuters have longer distances and shorter commuting duration and, on average, have lower incomes. Furthermore, the commuting patterns such as distance, duration, and time of commute are indifferent among income groups. More than 50% of commuters in each income group travel less than 20 km, the mean travel distance, and about 33% travel between 20 and 40 km. Furthermore, our logistic regressions suggest that, as private vehicles are more affordable for high-income groups, their commute time would be shorter. The study also highlights that commuting duration and origin-destination influence physical health. In contrast, there is no evidence that socio-economic status explains health conditions among commuters.

This article contributes to the literature and policy implications in metropolitan studies. First, the study reveals that a large share of lower-income commuters travelled long commutes between peripheral areas leading to higher odds of having health issues in this income group. This finding reflects the importance of local government and urban planners' critical role in expanding the public transport provision between JMA peripherals, as commuters from peripherals have lower incomes and commute long hours. Consequently, expanding public transportation and easing commuting time would improve commuters' health, leading to the promotion of JMA resilience. Alternatively, the government could promote active commuting which has been proven to improve health and wellbeing (Chatterjee et al., 2020; Götschi et al., 2016; Olsson et al., 2013). As Berube and Holmes (2016) suggest, metropolitan resilience needs transportation and institutional strategies to reduce

Table 9. Odds ratio of logistic regression of commuters' health.

	Coefficient	Standard Error	Odd Ratio
Income (ln)	−0.001	0.064	0.999
Commute			
Between peripherals	0.144	0.095	1.155
Core-peripheral	0.388**	0.143	1.474
Between cores	0.074	0.096	1.076
Duration	−0.488***	0.074	0.614
Married	0.169*	0.074	1.184
Transportation mode	0.042	0.086	1.043
Constant	−0.254	0.974	—
Tests	Coefficient	P > |z|	
LR test	72.50	0.000	
Wald test	71.37	0.000	
Hosmer-Lemeshow test	5.00	0.757	

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

disparities between rich and poor. On the one hand, local governments are obliged to expand urban infrastructure, and, on the other, multi-level governance is required to operate and maintain these transboundary urban infrastructures.

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Conflict of Interests

The author declares no conflict of interests.

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