TOWARDS A SUSTAINABLE URBAN FUTURE: THE 15-MINUTE CITY APPROACH IN PARIS, FRANCE

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Abstract
The rapid pace of urbanization worldwide has led to many challenges, from traffic congestion and air pollution to overconsumption of resources and social inequalities. In response to these pressing issues, and with the opportunity given by the two-year reconsideration of everyday life during the recent pandemic, the concept of the "15-Minute City" has emerged as a promising approach to urban development. This abstract explores the key principles and potential benefits of the 15-Minute City, where essential services and amenities are within a 15-minute walk or bike ride from one's home.

This sustainable city development model envisions compact, mixed-use neighbourhoods that prioritize local living, active mobility, and community engagement. By significantly reducing the need for long commutes, the 15-Minute City holds the promise of reducing carbon emissions, traffic congestion, and energy consumption, all of which align with the European strategy towards a greener and more sustainable environment. This approach fosters a sense of place and belonging, promotes social cohesion, and enhances overall well-being.

The 15-Minute City concept has gained traction in recent years, with numerous cities around the world embarking on pilot projects and policy changes to transform their urban landscapes. This paper highlights the strategies and principles that underpin the 15-Minute City specifically on Paris, France, including the creation of pedestrian-friendly environments, the diversification of land use, and the promotion of sustainable transportation options. Furthermore, the abstract explores the potential challenges and barriers that cities may encounter during the transition to this city model, such as infrastructure redevelopment, funding, and community buy-in. The 15-Minute City represents a bold vision for the future of sustainable urban development, one that aims to reshape our cities into healthier, more equitable, and environmentally friendly spaces for current and future generations.

Key words: *Sustainable city development,15-Minute City, Urban transformation, Participation.*

Introduction

In contemporary urban planning discourse, the concept of the 15-minute city has emerged as a compelling vision for creating more livable, sustainable, and resilient urban environments. At its core, the 15-minute city model advocates for restructuring cities to ensure that residents can access essential services, amenities, and employment opportunities within a 15-minute walk or bike ride from their homes. This vision represents a paradigm shift from traditional urban development patterns, which often prioritize automobile-centric infrastructure and long commutes.

The city of Paris has been at the forefront of implementing the 15-minute city concept, leveraging its unique urban fabric and cultural heritage to redefine the spatial organization of

urban life. Through strategic interventions and policy initiatives, Paris aims to foster compact, polycentric neighborhoods where daily needs can be met within close proximity, thereby reducing reliance on cars, promoting active transportation, and enhancing overall quality of life.

However, the implementation of the 15-minute city model in Paris, as in any urban context, presents both successes and challenges. While Paris has demonstrated remarkable agility in leveraging the opportunities presented by the COVID-19 pandemic to advance its urban agenda, questions remain about the applicability and effectiveness of certain strategies, particularly in diverse urban contexts with varying scales and socio-economic dynamics.

Drawing insights from the experience of Paris, this paper explores the nuances of implementing the 15-minute city model and examines its implications for urban planning practice. By critically analyzing the successes and shortcomings of Parisian initiatives, we can glean valuable lessons for other cities embarking on similar urban transformation journeys. Furthermore, this discussion underscores the need for flexible, context-sensitive approaches to urban planning that prioritize equity, sustainability, and community engagement.

Through a multidimensional examination of the Parisian experience, this paper aims to contribute to the ongoing dialogue surrounding innovative urban planning strategies and their potential to shape more inclusive, resilient, and vibrant cities for the future.

Methodology

This paper aims to present the results of a brief research conducted in Paris during a visit period between October 2023 and December 2023. The visit took place as part of the ongoing research for a post-doctoral dissertation regarding post-COVID-19 topiography and the possibilities and positive attributes the Greek city can derive from the 15-minute city strategy. Paris was chosen as a short case study due to the significant commitment it showed in promoting and implementing the 15-minute city strategy in the years following the COVID-19 pandemic. The main part of the paper is structured around a critical analysis of the strategic moves made by the Parisian administration, evaluating not only the strategy itself but also the public information process and public inclusion. During the visit, a brief questionnaire was also used to evaluate public awareness of the strategy and estimate the overall public opinion of the implemented measures. However, this short study cannot serve as a definitive criterion for evaluating the four-year transformation process of the city of Paris and needs to be further expanded to include a wider audience of participants, as well as a more in-depth analysis of the political and strategic choices made by the stakeholders. The scope of the paper is to present insights from the data currently collected and more detailed material is due to be published the following year.

Post Covid-19 Paris

The municipality of Paris and specifically the policy implemented in the metropolitan area of Paris during the period after the Covid-19 pandemic is a very characteristic example of an attempt to apply the 15-minute city strategy. Specifically, prompted by the imposed measures to restrict movement and the use of public transportation, intensive implementation of a strategy promoting sustainable mobility was attempted in Paris. Moreover, in the scientific community, the opportunity to utilize the extraordinary circumstances for the benefit of cities with all that this may entail in terms of changes to the economy, mobility, and the environment, was being formulated openly among participants in organizations and alliances advocating for environmental protection, such as the C-40 Mayors' Agenda for a Green and Just Recovery (Bloomberg 2020).

This strategy emerged from the theoretical approach that had already been explored in the previous years by Carlos Moreno, a professor at the Sorbonne University and advisor to the Mayor of Paris. He had been advocating for and exploring this operating model for almost a decade by publishing his position in scientific journals and articles (Moreno, 2016).

Recently, the scientific dialogue expanded to variations of this model, while at the same time examining several related models with minor alterations, such as that of the 20-minute neighborhood (Dunnin et al, 2021). Mayor A. Hidalgo seemed to take advantage of the coronavirus crisis, which required an immediate redefinition of the city's daily operations, and adopted Moreno's 15-minute city strategy, promoting the reduction of unnecessary movements within the city not just for this particular period but consistently and coherently. She supported the idea to such an extent that she even elevated it to a central axis of her political campaign (Chonghaile, 2023).

The Moreno Model of the 15 minutes city in Paris

The 15-minute city model promotes and maximizes the positive characteristics of the dense, compact city and the mix of functions and uses. The benefits of creating an environment within the city where sustainable mobility is promoted and networking is encouraged leave a positive impact not only on the environment, by improving the city's climate and atmosphere, reducing fuel consumption, and enhancing physical health, but also have a positive effect on the economy as businesses targeting a smaller audience can thrive under such organizational conditions.

Image 1: Moreno's representation of the 15-minute city principles, (Moreno 2019)
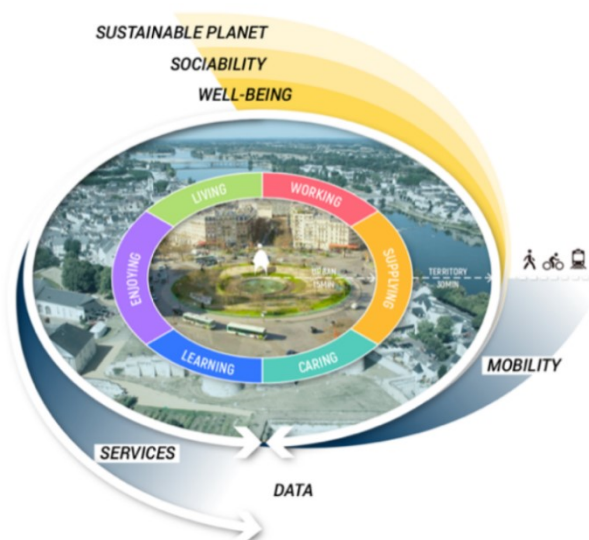
The new chrono-urbanism introduced as a term by Moreno, indicates the importance placed on the model's emphasis on reducing travel time, rather than focusing on specific modes of transportation. A fundamental parameter of his proposal is to meet six basic daily life needs of individuals, all within close proximity to the residential area: Residence, work, supplies, health, education, and leisure.

According to Moreno, in order for these basic daily needs to be met, the subunit of the city should have four main characteristics: proximity, diversity density, and ubiquity (Moreno, 2019). These characteristics should be concentrated in areas of the city that operate around a centrality, a core of this unit that provides 15-minute mobility. In his proposal, schools are the core of the unit. Given that their dispersion in the city is theoretically

satisfactory and calculated in such a way as to cover the entire served population, according to Moreno, they can be used as a reference point for the 15-minute city.

Image 2: Anne Hidalgo campaign image, promoting the 15-minute city strategy

Therefore, the city should be organized with safe routes and a mix of functions within this new city cell so that the principles and methods used can be repeated at every area in the broader Parisian area.

Image 3: Explanation of the new model of 15-minute city operation in Paris
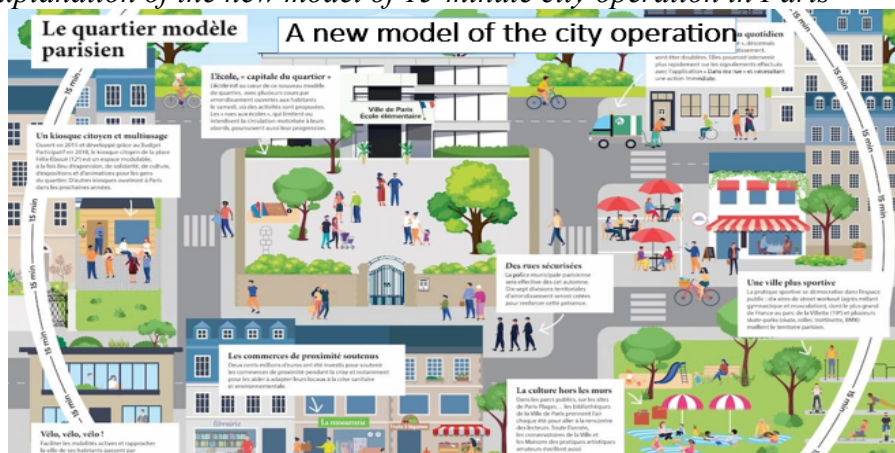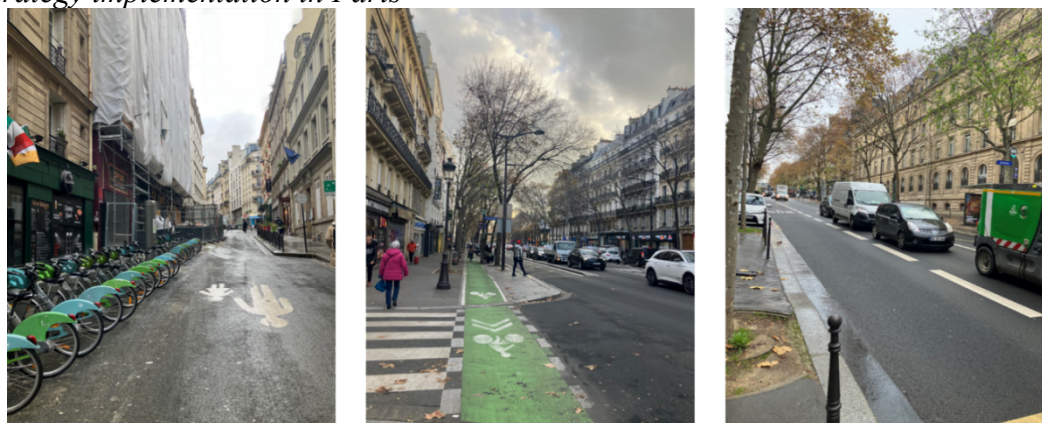

Implementation of the Strategy

Examining the changes in the city of Paris over the last four years, we observe a clear intention to transform its daily functioning, primarily in terms of mobility. In recent years, from 2020 onwards, traffic regulations have shown a clear orientation towards reducing car usage and encouraging the use of non-motorized transportation means. In this context, speed limits within and around the center of Paris have been reduced to as low as 30 km/h, while throughout the city, traffic lanes have been designated exclusively for bus use, pedestrian use, and cycling. Additionally, the main boulevard that used to run the city alongside the Sein River, has been abolished, with the former roadway now serving as a pedestrian walkway. Last but not least, the number of permanent vehicle parking spaces has also been significantly reduced.

Image 4: The transformation of the Boulevard alongside Seine River into a pedestrian and bicycle root as part of the 15 minutes city strategy implementation


These actions were taken within the framework of promoting network connectivity and implementing the 15-minute city strategy in Paris. Particularly in the direction of sustainable mobility and specifically in promoting bicycle usage, interventions have been dramatic in numbers. According to data published by the Paris Municipality, the goal is for Greater Paris to be fully accessible by bicycle by 2030. This translates to 4,017 kilometers of new bicycle lanes in addition to the existing 2,158. Furthermore, these routes are planned to be supported by 163,000 existing bicycle parking spaces, to which another 54,300 are proposed to be added. Securing bicycle parking spaces is achieved, among other methods, through the removal of car parking spaces.

Image 5: The creation of bicycle lanes and bicycle parking spaces as part of the 15 minutes city strategy implementation in Paris

As indicated by the Municipality's data, 4.36 million residents live within a 3-kilometer radius of each Grand Paris Express station. After the implementation of the bicycle strategy, all these residents will be connected to the stations through safe 15-minute bicycle routes.
The encouragement of bicycle usage is such that long-term plans include the creation of a high-speed bicycle lane for networking longer distances within Greater Paris (RER Velo).

Image 5: Map of RER VELO
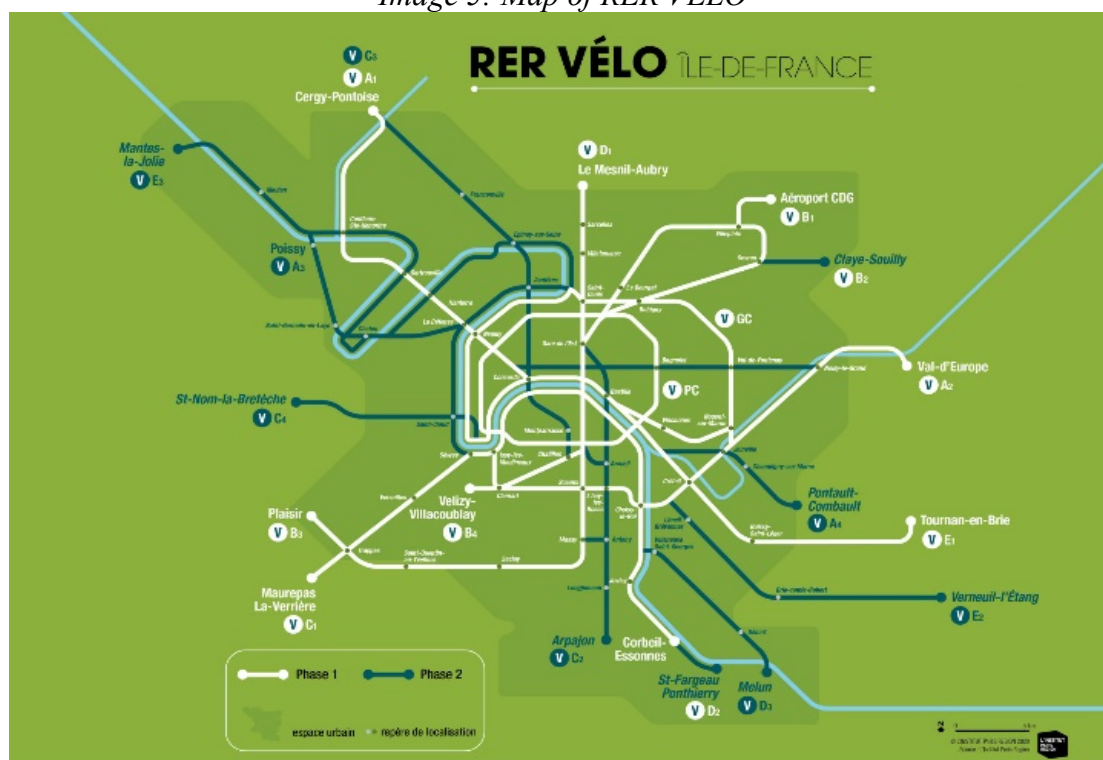
The implementation of the strategy appears to be progressing rapidly by late 2023, possibly accelerated due to the upcoming organization of the Olympic Games in Paris in the summer of 2024. So far, the implemented infrastructure does not seem to be costly or overly complex and relies heavily on traffic regulations and securing bicycle and pedestrian routes with simple lane separations. By 2023, 20% of Paris's expressways already included at least one bicycle traffic lane, and it is estimated that around 385,000 trips - mostly to and from work - are made monthly by cycling. (APUR 2023).

Users' Reaction to the implemented measures

According to the report of the Paris Urban Planning Office (APUR 2023), the number of cyclists appears to be increasing rapidly after the implementation of traffic regulations and the strategic development of a network of cycle routes throughout the Paris region. On-site research conducted in Paris from October 2023 to December 2023 found that new cycle paths are being significantly used, confirming the increasing prevalence of cycling for both short and longer distances. Bicycles have exclusivity in many areas of the cycle path without having to share them with pedestrians, and the assertion of their space is now strong among city users, to the point of possibly posing a danger to pedestrians who are not accustomed to this rapid transition. Bicycles are also served with provided special parking spaces distributed densely throughout the city, and they are required to adhere to the current traffic signaling.

From a short survey conducted using a small questionnaire during the same period of 2023, some trends in user behavior and perception emerged after the implementation of the cycling strategy. The limited sample size of respondents does not allow for definitive results but is used herein as a reference for the general direction of the issues under consideration.

Specifically, it appears that the pro-cycling strategy has resulted in a change in the mode of transportation used daily by approximately 30% of respondents.

Image 6: Questionnaire segment 1
- Have you changed your mode of transportation after the implementation of the strategy?
*- What is your primary mode of transportation?*
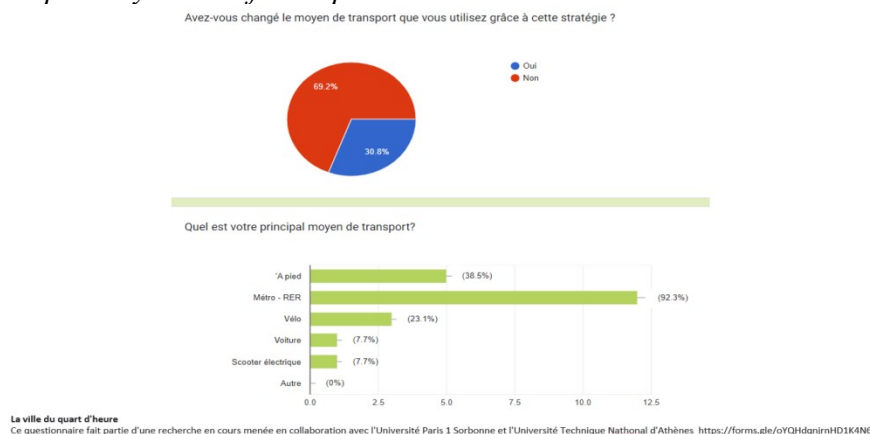
The majority seem to prefer the use of the metro network, a fact justified by the dense coverage of Paris by metro stations. However, according to the survey responses, bicycles rank third in the preference for mode of transportation after the implementation of the strategy, despite the fact that respondents were allowed to select multiple choices. Last but not least, the car is the least preferred mode of transportation among users.

Despite the extensive use of bicycles, acceptance of the changes is not guaranteed. Paris has changed significantly in a very short period, and as expected, users may not necessarily align with these changes. When asked about how they perceive the changes in the city since 2020 when the pro-cycling strategy began to be extensively implemented, with zero indicating no change and 10 indicating a significant change, approximately one-third of respondents rated the change as 8. In the next question, whether they consider this change positive or not, the results show that the dissatisfied public outweighs the satisfied or indifferent.

Image 7: Questionnaire segment 2
- To what extent have you seen a change in Paris since 2020?
- Do you think the change was for the better?
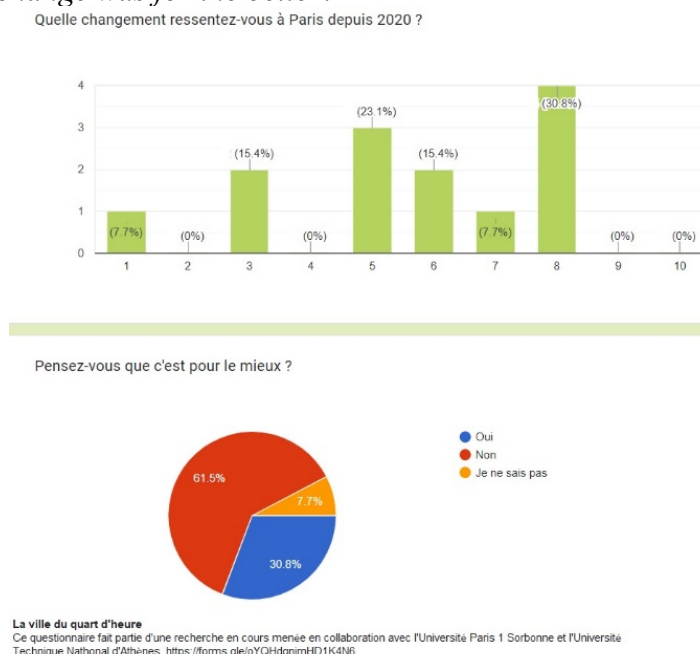
These results certainly cannot be used to judge the overall effectiveness of the strategy or its long-term impact since, as noted, the sample size does not include a large number of respondents, and it is considered that a longer period of time is needed for users to assimilate such radical changes in the city's urban environment. However, they could possibly serve as a guide for drafting, implementing, and communicating the strategy. Below are some weaknesses identified regarding the promotion of the 15-minute city in Paris.

Weaknesses and gaps of the strategy

A fundamental weakness of the overall strategy for the city of Paris is the communication to the public of the intentions and the set of actions required for its fulfillment. Specifically, despite the announcements for specific targeting with the primary three of the main objectives being multifunctionality, coherence, and proximity, in practice, the implementation of the strategy is limited to very large-scale interventions specifically in the direction of sustainable mobility. The rapid development of a network of safe bicycle routes and traffic regulations and other measures that discourage the use of private vehicles, as legitimate and pursued as dictated within the framework of the European Goals for Cities (EU SDGs), constitute only a fragment of the desired strategy for the 15-minute cities. Paris enhanced networking and attempted to define the radius oof15 minutes movement, but seems to overlook the other very serious and equally important objectives of the promoted model. The cohesive city and the mix of functions require, among other things, at least the upgrading of the building stock, access to housing, business reinforcement, and protection from gentrification phenomena.

Specifically in Paris, some of these policy objectives are covered by actions undertaken either by the City of Paris itself, the Paris Region, or the urban planning service of Paris. All services run programs to upgrade the city (Paris Climate Action Plan, Paris Habitat 2030, Participatory budget, etc.), all of which aim to improve the quality of life of residents either by facilitating access to housing, encouraging participation in planning processes, or financing small neighborhood projects.

Despite the existence and parallel support of such actions, there is no apparent connection to the strategy of the 15-minute city. The various plans are funded and organized by different authorities or departments and do not appear to have been designed with the intention of supporting this specific effort. This does not mean that they are not successfully implemented or that they do not bring the desired results. According to the recent report of the Paris Urban Planning Office (APUR), the housing strategy, for example, is being successfully implemented and sets high goals for the upcoming period. However, at no point in the report is there any mention of any connection to the 15-minute city, nor are its results in any way combined with those of reducing car use and reducing the demand for travel from the point of residence.

Even greater interest is aroused by the communication of the cycling strategy. As shown by the reports of the Urban Planning Office, despite the very encouraging elements regarding the progress of its implementation, there is no connection there either to the strategy of the 15-minute city and to the combined results towards achieving the four objectives and the six functions that the Moreno model sets as prerequisites. It is therefore concluded that these are various parallel strategies that are implemented simultaneously, despite the fact that they aim in the same direction, that of upgrading the city environment and quality of life improvement.

The above finding may not be considered such a significant problem at first glance, but it raises a number of issues, mainly communication and diffusion of results. Firstly, it makes the planning and implementation of the 15-minute city strategy fragmented and incomplete. The unilateral development of cycling routes may be a starting point for the transformation of the city's landscape, but it is not a comprehensive strategy. Furthermore, it may give the public a

wrong impression regarding the final intention and the medium- to long-term outcome of the interventions, as most users perceive interventions in favor of only a fraction of the commuters and city users.

For example, in the context of the limited research conducted during the period October 2023-December 2023, the respondents seem by a majority not to have known about the 15-minute city strategy being attempted in Paris, while those who knew about it considered that its objectives are largely limited to promoting cycling and discouraging car use.

Image 8: Questionnaire segment 3
- Are you familiar with the 15-minute city strategy?
- If yes, what does it propose?
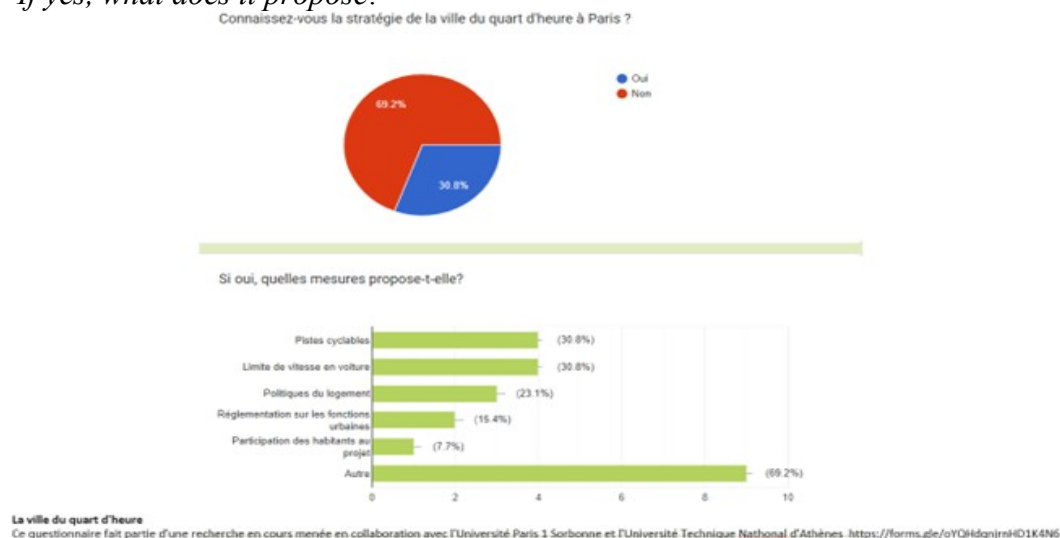
Such phenomena are likely to hinder the positive outcome of the promoted strategy and make it difficult to achieve individual goals. The importance of consultation and active citizen participation has been established and is now high on the priorities of both major metropolises and the European Union itself. Inadequate or absent information creates fertile ground for misinformation and the development of erroneous and misguided theories that hinder strategic planning and implementation. In the case of the Moreno model, it was found that there was a tendency, both within Paris and outside it, to demonize the strategy proposed as a means of controlling and restricting city users. This position became so widespread that it even led to mobilizations against Moreno's visit to Britain. Surprisingly enough, according to a June 2023 survey, 33% of Britons adopt this stance, that the 15 minut3s city strategy hides ulterior motives beyond those of the environmental protection and urban life upgrade. (Le Monde, 2023).

Nevertheless, from the experience of Paris, we can draw both successful and unfortunate points in the implementation of the strategy. Undoubtedly, Paris has shown exceptional reflexes in exploiting the pandemic situation for the benefit of the city's image and function. Many cities follow a similar example (Portland, Melbourne, Liverpool, etc.(Pozoukidou, Chatziyiannaki 2021)). They do not all have the same needs nor the same morphological and social elements. The parameterization of Paris, where the intention is to create units centered around the school unit, is seemingly a safe method of subdivision of city subunits, but it has already been questioned as to whether it can realistically respond to all cases (Dunning 2021). It is very likely that in cities like for instance the Greek ones, which have a small scale compared to European ones, and a different distribution of functions, the centralities sought by the Paris model have already been informally created by the city itself. In these cases, a

more bottom-up approach is more suitable, where centralities are "read" and reinforced appropriately in order to implement the 15-minute city model. Certainly, if gaps are indeed identified after this first analysis, and if deemed necessary, the strategy may possibly be complemented with a more top-down approach, where a certain centrality is created through specific maneuvers. Therefore, it is necessary to redefine the method of implementing this planning model according to each specific case. Moreno himself has pointed out that the typology he proposes is not necessarily applicable everywhere, in every city, and is subject to changes and parameterization in order to serve its purpose each time (Kathimerini 2024).

Conclusions

The experience of Paris in implementing the 15-minute city model offers valuable insights into the complexities of urban planning and the challenges of translating visionary concepts into tangible realities. While Paris has made significant strides in reimagining its urban landscape and promoting sustainable mobility, several critical considerations emerge from its experience.

Firstly, the Parisian case highlights the importance of context sensitivity in urban planning. While the 15-minute city model holds promise as a framework for enhancing urban livability, its application must be tailored to the unique socio-economic, cultural, and spatial characteristics of each city. What works in Paris may not necessarily be replicable in other urban contexts, underscoring the need for flexible, adaptable approaches that account for local nuances and priorities.

Secondly, the Parisian experience underscores the significance of community engagement and participatory decision-making in urban planning processes. Meaningful stakeholder involvement ensures that urban interventions reflect the diverse needs, aspirations, and perspectives of local residents, fostering a sense of ownership and inclusivity. As cities worldwide embrace the principles of the 15-minute city, prioritizing citizen input and co-creation will be essential for building resilient, equitable urban environments.

Furthermore, the Parisian case prompts reflection on the role of governance structures and policy frameworks in driving transformative urban change. Effective coordination between municipal authorities, regional stakeholders, and grassroots organizations is crucial for aligning diverse interests, mobilizing resources, and overcoming bureaucratic barriers. As cities navigate the complexities of urbanization and climate change, fostering collaboration and fostering innovation will be essential for realizing the vision of the 15-minute city.

In conclusion, while the journey towards achieving the 15-minute city is fraught with challenges, the Parisian experience demonstrates the transformative potential of visionary urban planning strategies. By learning from both the successes and setbacks of Paris, cities worldwide can chart a course towards more sustainable, equitable, and resilient urban futures. Through continued collaboration, innovation, and community empowerment, the vision of the 15-minute city can serve as a beacon of hope for creating cities that truly thrive in the 21st century.

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