

Pathways to 15-Minute City adoption: Can our understanding of climate policies' acceptability explain the backlash towards x-minute city programs?

Oriol Marquet^{a,b,*}, Laia Mojica^a, Marta-Beatriz Fernández-Núñez^a, Monika Maciejewska^c

^a Geography Department, Autonomous University of Barcelona – Edifici B, Campus de Bellaterra, Cerdanyola del Vallès, 08193, Barcelona, Spain

^b Institute of Environmental Science and Technology (ICTA), Autonomous University of Barcelona. Barcelona, Spain.

^c Cosmopolis Centre for Urban Research, Vrije Universiteit Brussels, Brussels, Belgium

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ABSTRACT

In recent months, 15-min city policies have faced significant backlash across social media, in opinion pieces, and even through street demonstrations, casting doubt on the future of x-minute city policies as effective tools in the fight against climate change. The protests and backlash not only challenge the effective implementation of x-minute city policies, but also highlight our lack of understanding regarding which acceptability factors affect public reactance to this new kind of urban policy. This paper reviews the existing literature to reveal the four main factors shaping policy acceptability. It then juxtaposes these factors against the common criticisms leveled at the 15-min city model. This comparative analysis not only illuminates the limitations of applying traditional policy frameworks to the x-minute city context, but also identifies critical gaps in the existing literature. By bridging this divide, we aid policymakers in navigating the spectrum of public skepticism of the 15-min city model, from addressing and debunking conspiracy theories to engaging with scientifically-grounded critiques. Our findings offer a roadmap for transforming these innovative urban planning concepts into widely embraced solutions for climate change mitigation.

1. Introduction

In late 2023 to early 2024, a notable wave of protests worldwide challenged the urban planning eco-friendly concept of the 15-min city, a chrono-urbanistic approach that aims to ensure everyday facilities are within a 15-min walk from all neighborhoods. The surprising nature of these protests has evidenced how little we know about how these protest movements start, evolve, and expand throughout our interconnected societies. Most importantly, they have come to challenge the future suitability of the whole 15-min city movement.

These protests have revealed a dual gap in our comprehension of such dynamics. First, several recent demonstrations have been laced with conspiracy theories originating from climate change deniers, COVID-19 skeptics, Agenda 2030 detractors, and other far-right conspiracy theorists, for which planners are not prepared to interact (Douglas et al., 2019; Trapenberg Frick, 2013). Second, these events highlight the gaps in our understanding of policy acceptability, as well

as how little of our current knowledge of climate policy acceptability actually applies to urban built environment transformation policies such as the 15-min cities.

Urban planning is caught between traditional challenges and emerging post-truth tactics. While city planners have long mediated diverse political perspectives, grappling with planning's impact on land value and usage amidst public policy debates (Purcell, 2009; Sager, 2009), conflicts now increasingly draw on misinformation from across the political spectrum, with a notable rise in populist right-wing activism. This activism, interpreted as elitist opposition to justice planning and resistance to equitable reforms (Fainstein et al., 2023), has historical roots in movements like the Tea Party in the US and contestations in Germany and the UK (Berry & Portney, 2017; Dannemann, 2023; Griggs & Howarth, 2008). However, the post-COVID era has intensified these debates, intertwining local planning disputes with wider national or global narratives and a populist dismissal of scientific authority (Fainstein & Novy, 2023; Sassenberg et al., 2023). The

* Corresponding author at: Geography Department, Autonomous University of Barcelona – Edifici B, Campus de Bellaterra, Cerdanyola del Vallès, 08193, Barcelona, Spain.

E-mail address: oriol.marquet@uab.cat (O. Marquet).

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adaptation of post-truth tactics, including the deliberate spread of misinformation, reflects a shift towards defending traditional car-centric lifestyles (Klein et al., 2022) and signals a departure from past protest methods to a new era of conspiracy-driven discourse (Whittemore & BenDor, 2019).

When aiming to approach these new types of criticism, urban planners can either focus on the nature of conspiracy and populism thinking (Marquet et al., 2023; Nwokora, 2023; Sassenberg et al., 2023), or instead they can turn to the academic literature on climate-policy acceptability (Klein et al., 2022; Legacy, 2022; Legacy & Stone, 2019), in an effort to understand what factors might be behind such backlash to planning.

The “15-min city” model aims to ensure residents can reach essential places within a 15-min walk, fostering a human-centric, nearby, and environmentally-sensitive urban design (Allam, Bibri, et al., 2022; Ferrer-Ortiz et al., 2022; Moreno et al., 2021). This time-based urban strategy, which prioritizes individual requirements and is notable for its clarity and ease of communication (Logan et al., 2022), has surpassed in

popularity other recognized approaches like smart growth or new urbanism. Given that 15-min city policies represent a climate-driven urban transformation, their public acceptability may align with established factors for policies like congestion charging, carbon pricing, or low-emission zones (LEZs). However, the unique aspects of 15-min cities complicate the direct application of known climate policy acceptance criteria. Policies affecting plans for x-minute cities touch daily life and the physical layout of communities more directly, thus requiring a carefully tailored approach to understanding how people accept these changes (Schuitema et al., 2010). Additionally, the specific ways these policies affect local spaces and social dynamics mean we cannot rely on a single strategy for all situations.

This paper targets the gap between academic research on climate policy approval and criticisms of the 15-min city concept. Our objective is to underscore the limitations in current research on policy acceptability, particularly how these shortcomings impact innovative urban planning models like the 15-min city. By figuring out these missing pieces, we can direct future research to better understand why people

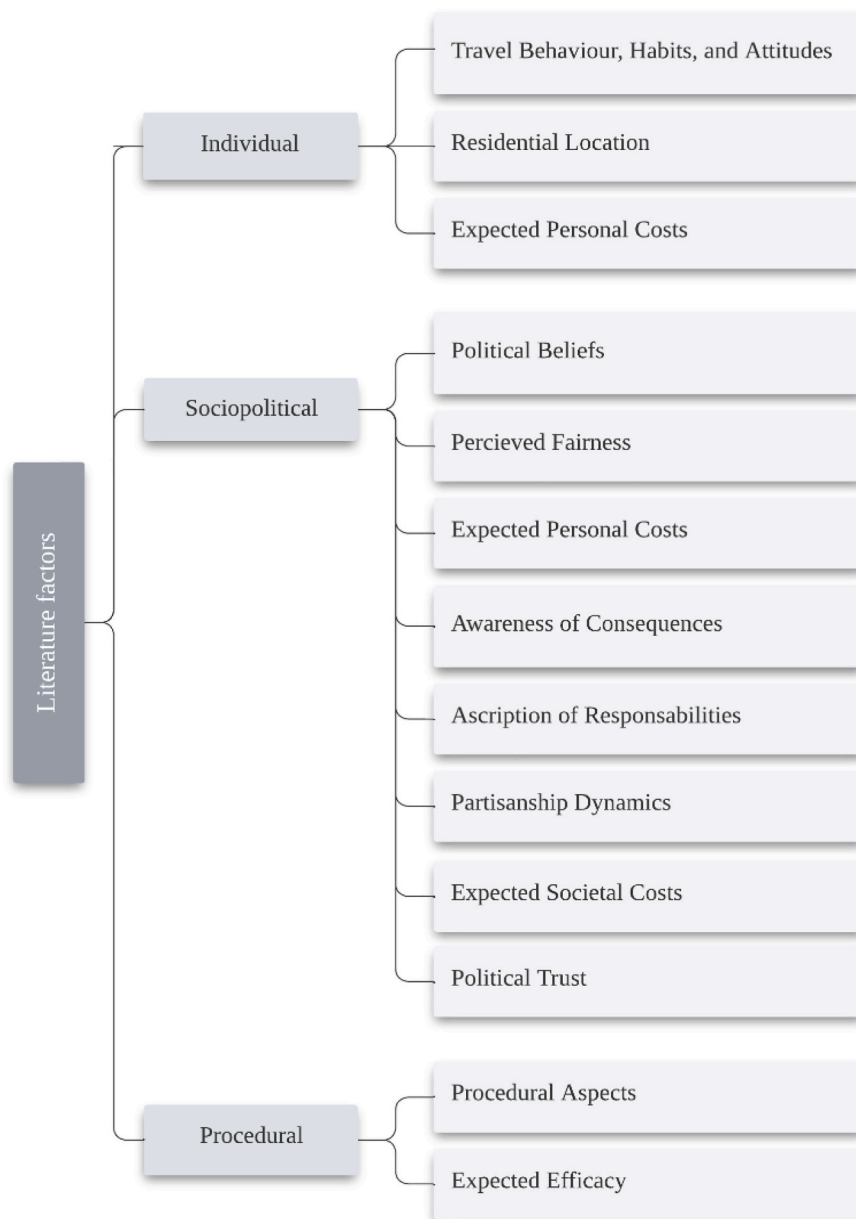


Fig. 1. Breakdown of key acceptability factors for climate-change urban policies.

oppose 15-min cities. This will help us find ways to reduce this opposition and improve 15-min city policies, making them more effective and acceptable to the public.

To this end, we first review the current knowledge on why people accept or oppose urban climate change policies. Then, we break down the more frequent popular criticisms provoked by 15-min city policies, and discuss their diverse origins. We then examine the acceptability factors with the most frequent criticisms, aiming to: (1) identify which parts of the existing research on climate policies help us understand the challenges of making 15-min cities acceptable, (2) connect specific popular criticisms of 15-min cities to known factors affecting climate policy acceptance, (3) determine which factors are important for other climate policies but are not likely to affect 15-min city acceptability, and (4) pinpoint where current research does not fully address why people accept or oppose 15-min cities.

2. What makes an urban transport policy acceptable?

The urgency of climate change has drawn attention to the factors that make people accept or reject environmental policies. The recent literature from the fields of economics, political science, psychology, and geography has advanced our understanding of why individuals support or oppose these policies. This review of the available literature provides several recurrent topics and themes that are consistently found to be relevant when determining acceptability to urban climate change policies. For clarity, we have organized these themes into three straightforward categories: individual, sociopolitical, and procedural factors (Fig. 1).

2.1. Individual factors

The first level of acceptability issues is directly related to individual factors which include travel behavior, habits, and attitudes. These are commonly mediated through individual residential location and expected personal costs. These mechanisms rely on the theory of planned behavior (TPB) and value-belief-norm (VBN) theory which are two primary theories often applied to understand individual factors influencing the acceptability of urban transport policies (Stern, 2000). The TPB postulates that an individual's intention to perform a behavior, such as supporting or rejecting a policy, is determined by their attitude towards the behavior, their perceived behavioral control, and the subjective norms surrounding the behavior (Ajzen, 1991). Similarly, VBN theory suggests that an individual's pro-environmental actions, including support for sustainable transport policies, are influenced by their personal values, environmental worldview, awareness of environmental consequences, ascription of responsibility, and personal norms (Lind et al., 2015).

How people travel, their routine travel patterns, and their attitudes towards different modes of transportation play essential roles in determining the acceptance of urban transport policies, as suggested by recent studies (De Vos, 2022; Kroesen et al., 2017). The likelihood of accepting new transport policies is influenced by these established travel habits, which are a regular part of people's lives (Long et al., 2021; Moberg et al., 2021). Any proposed changes that would significantly alter these habits could face resistance (Morton et al., 2021). Residential location (i.e., the urban or suburban context of their home) also shapes their view of transportation options and policies (Peer et al., 2023). Therefore, reactions to public policy can differ based on how changes are perceived to impact personal travel experiences, with particular sensitivity observed in how changes might affect individuals in their specific living environments (Thaller et al., 2023).

Personal attitudes and norms also play a significant role (Ejelöv, Nilsson, 2020a; Sharman et al., 2020). VBN theory and the TPB suggest that individuals who value environmental sustainability, and perceive societal norms favoring sustainable transport behaviors, are more likely to accept pro-environmental policies (de Groot & Schuitema, 2012).

Expected personal costs have also been found to significantly influence policy acceptability (Attari et al., 2009; Schade & Schlag, 2003). These costs can be perceived as financial but there are also time or inconvenience costs (Player et al., 2023). In general, when individuals estimate that introducing a policy will increase personal costs through decreased convenience, this will generate resistance. On the other hand, perceived personal benefits can enhance acceptability, although all of these dynamics are heavily mediated and moderated by personal attitudes and norms (Ejelöv, Nilsson, 2020b; Eriksson et al., 2008; Jakovcevic, Steg, 2013a).

2.2. Sociopolitical factors

The acceptance of urban transport policies has also been significantly influenced by sociopolitical factors, often shaped by the broader social and political context in which individuals and communities operate.

Political beliefs, for instance, can impact policy acceptability, particularly if policies are perceived as being associated with specific political ideologies (Ferster et al., 2021; Lim & Moon, 2022). A policy that is seen as advancing an environmentalist agenda might be more readily accepted by individuals with liberal political leanings compared to individuals with conservative views (Chan & Lin, 2022; Geiger et al., 2022). Additionally, the concept of fairness (i.e., how benefits and costs are shared among community members) also affects policy support. According to distributive justice theory, people are more likely to back policies that they view as distributing resources or benefits fairly (Kallbekken & Sæhlen, 2011). Applied to urban planning, this could mean that if costs and benefits are perceived to be distributed unevenly, opposition may arise. Fairness, however, is also interrelated with political beliefs or partisanship dynamics (Drews & van den Bergh, 2016; Thaller et al., 2023), as liberals have been found more likely to value the fact that the government ensures fairness through their policy-making (Chan & Lin, 2022).

How well the public understands a policy's impact and who is held responsible for these impacts can influence public support or opposition (Bondemark et al., 2022; Palm & Handy, 2018). As shown by Manville and Cummins (2015), people tend to support policies if they believe the policy addresses an issue caused by a specific group, especially if the cost of addressing the issue is also borne by that group. Similarly, recognition of solving the problem as part of the city's administration responsibility will generally affect acceptability in positive terms. Previous research, however, has found that travel-related decisions and opinions are less affected by environmental or social justice framings (Attari et al., 2009), suggesting that transport-related opinions might have more to do with personal practices and habits than other societal considerations.

Recent research has investigated how political allegiance affects public support for policies, finding that policy views are increasingly tied to partisan identities (Goldberg et al., 2020; Mildemberger & Tingley, 2019; Schuldt et al., 2019). The influence of partisan politics on policy discourse and decision-making has been found to be even greater in polarized societies (Attari et al., 2009). Partisanship dynamics may increase in importance as urban climate policies become increasingly engrained along political divisions. Together with that, expected societal costs, such as environmental or economic impacts, also need to be taken into account (Maestre-Andrés et al., 2019). If a policy is perceived to have adverse societal costs, it may face resistance, while a policy with perceived societal benefits may enjoy higher acceptability.

Additionally, trust in political leaders and institutions significantly impacts policy support (i.e., a lack of trust can result in opposition to even the most well-meaning climate policies), underlining the need for credible and trustworthy governance in implementing urban climate strategies. Finally, trust in political leaders and institutions, conceptualized by political trust theory, have also been found to alter policy opposition (Balsas, 2021; Ejelöv, Nilsson, 2020b; Lim & Moon, 2022). A lack of trust can result in opposition to even the most well-meaning climate policies, underlining the need for credible and trustworthy

governance in implementing urban climate strategies (Zografos et al., 2020).

2.3. Procedural factors

In the context of urban transport policies, procedural factors concerning policy development and implementation have also been found to significantly influence public acceptance. Central to this category is the aforementioned procedural justice theory, suggesting that the fairness of decision-making processes, and how individuals are treated during these processes, can significantly affect the perception of the outcomes (Hough et al., 2013). However, our focus here is on two main factors: procedural aspects and expected efficacy.

Procedural aspects of policy-making, encompassing the transparency, inclusiveness, and thoroughness of the development, announcement, and implementation stages, are crucial for public acceptance (Maestre-Andrés et al., 2019; Morton et al., 2021). This also includes the concept of procedural legitimacy, which emphasizes the importance of clear communication and public involvement in urban planning decisions (Jagers et al., 2017). For instance, urban planning initiatives that clearly communicate the reasons behind policy changes, and allow for public input, tend to be more accepted. In contrast, policies that appear to be imposed without consultation or justification may

face opposition. Expected efficacy, expressed as the perceived likelihood of a policy effectively addressing the issue it is designed to resolve, can also influence policy acceptability (Morton et al., 2021). If a policy is perceived as unlikely to achieve its stated goals, it may be seen as useless, while the findings of both Manville and Cummins (2015) and Palm and Handy (2018) demonstrate that believing policies will achieve what they set out to achieve is an important determinant of support of transportation policies. These issues are particularly important in the context of post-political and austerity urbanism, where the suppression of democratic debate and the implementation of economic efficiency often take precedence over citizen participation and social equity (Legacy, 2016; Verlinghieri et al., 2023)

3. Unpacking public criticisms and dissent

Recent protests in cities such as Oxford (UK), Edmonton (Canada), or Madrid (Spain; particularly the municipality Rivas-vaciamadrid) have been characterized by a variety of claims and objections (ITV News, 2023; The Objective, 2023) that range from outlandish conspiracy claims to legitimate concerns about the 15-min city model (Evans, 2023; The Globe, 2023). One common keystone in these protests, spanning from the UK to the US or Spain, has been the internal consistency of their messages and the similarity of slogans and protests. Following a

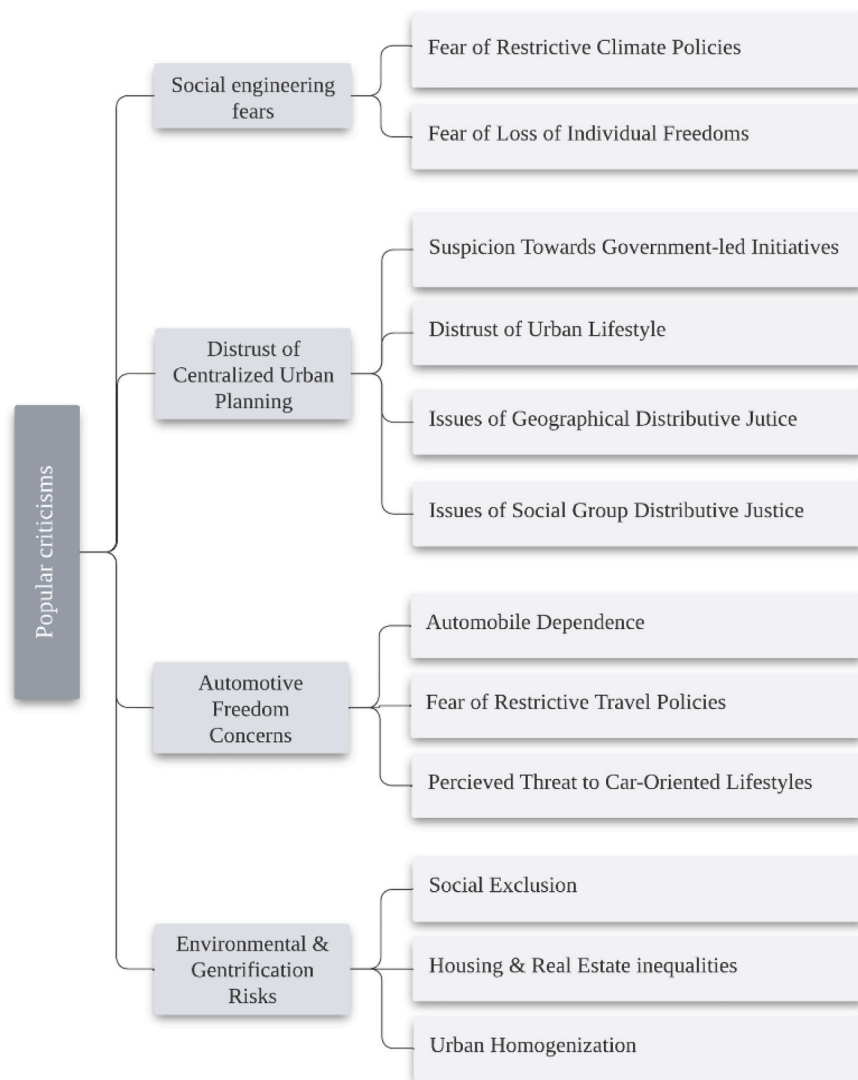


Fig. 2. Breakdown of main criticisms towards minute city policies.

breakdown of these public concerns by Marquet et al. (2023), we further group them into four main complaints regarding public concerns, using past data from similar contestations in urban planning, such as the Tea Party movement or several urban planning contestation movements in Germany and the UK (Berry & Portney, 2017; Caiani & Lubarda, 2023; Dannemann, 2023; Griggs & Howarth, 2008; Liekefett et al., 2023; Mert, 2019; Trapenberg Frick, 2013, 2016). The analysis is also informed by a pragmatic synthesis of current and public events. Because the recentness of the phenomenon prevents us from being able to conduct a literature review on recent specific protests against the 15-min city, our analysis in this section is underpinned by critical examination and interpretation of the gray literature, such as media reports, opinion pieces, and social media trends. This interpretative method allows us to construct a contemporary framework reflecting the multifaceted nature of the criticism, ranging from conspiracy theories to legitimate urban planning concerns. Main criticisms towards 15-min city policies include social engineering fears, distrust of centralized urbanism, automotive freedom concerns, and environmental and gentrification risks (Fig. 2).

3.1. Social engineering fears

In debates focused on 15-min city policies, a prominent criticism centers on fears of social engineering and climate confinement (Chapman, 2021; Roth, 2021). Critics argue that x-minute city policies are actually efforts to control and limit personal mobility in the name of climate action (Moore, 2023; Partington, 2023). Proponents of this view often invoke conspiracy theories, suggesting that the push for x-minute cities is part of a hidden agenda that seeks to limit the freedom of individuals and reshape urban life under the banner of sustainability. An example of this perspective can be seen in the recurring conspiracy theory regarding “Agenda 21”, a non-binding action plan related to sustainable development from the United Nations, which some critics interpret as a clandestine plot for establishing a totalitarian world government (Berry & Portney, 2017; Himelboim et al., 2023). Opponents of the 15-min city concept describe it as a form of ‘climate confinement’, restricting movement and shrinking living spaces. Those opponents view these policies as an infringement on personal freedom, particularly regarding car usage, and authoritarian impositions by the government.

3.2. Distrust of centralized urban planning

Behind several criticisms of the x-minute city concept lies a broader ideological resistance towards centralized planning and urban life, a pattern of thought that has found resonance in conservative circles over a long period of time (Gordon & Richardson, 1997). The x-minute city, according to such critics, becomes a symbol of overreaching government authority and an erosion of public trust. This is especially true for critics who align with libertarian principles, harbor doubts about technocratic solutions, or express apprehension over the potential for increased surveillance (Skrede & Andersen, 2022; Whittemore & BenDor, 2021).

A global unrest towards urbanization, which is particularly pronounced in the United States, intensifies these concerns (Conn, 2014; Meyer & Graybill, 2016). This resistance against x-minute city plans can be seen as part of a broader criticism of urban life that has been consistent throughout the 20th century (Conn, 2014). The x-minute city encapsulates an urban vision characterized by diversity, enhanced community interaction, and a vibrant public realm (Allam, Nieuwenhuijsen, et al., 2022; Moreno et al., 2021). However, these ideals are not universally appealing. Decades of spatial segregation, specialization, and decentralization have resulted in urban spaces that are often lacking in the richness of community engagement and social interaction. While some individuals view the prospect of reversing these trends positively, other individuals are comforted by the status quo and are thus resistant to such transformative change (Talen, 2008, p. 7).

However, opposition to x-minute city programs is not entirely grounded in ideology. It also manifests from a sense of

disenfranchisement among certain demographics, where individuals feel overlooked by urban-centric transformative initiatives. For instance, individuals living in less dense and extensive settlements might perceive these urban planning policies as favoring urban core inhabitants disproportionately, which can instigate feelings of distributional inequity. Such sentiment also resonates with some social groups who believe that the push towards more feminist and care-centered cities neglects traditional labor and productivity-driven priorities. As a result, these groups argue for a more universal approach to urban planning, focusing on broad-based benefits rather than catering to specific interest groups or urban elites.

3.3. Automotive freedom concerns

Opposition to the 15-min city concept, interestingly, is also tied to deeply ingrained travel behaviors; specifically, the heavy reliance on automobiles. The patterns of urban sprawl and car-centric planning that have come to characterize many of our cities have resulted in lifestyles that are profoundly dependent on the use of cars (Guerra & Reyes, 2022; Zografos et al., 2020). These lifestyles have thrived in an era defined by cheap and unrestricted car travel with easy access to urban spaces (Boussauw et al., 2023; Mattioli et al., 2020; Zografos et al., 2020). As such, urban transformation policies aimed at diminishing the dominance of cars often encounter resistance (Aumain et al., 2023). This resistance tends to be especially pronounced among suburban dwellers prone to overestimating the potential impacts of such changes on their personal mobility and consumption patterns (Belanger-Gravel et al., 2015).

In our fast-paced modern world, the car is viewed by many as the only feasible means with which to achieve the expected flexibility in personal mobility (Freudental-Pedersen, 2009). Consequently, policies aimed at redistributing public spaces in cities may be perceived as anti-car measures by individuals who consider public policies a zero-sum game. This perception of being “anti-car” is often equated with an infringement on personal freedom, limiting the choice of where and when to travel, and imposing a reliance on public transit. Cognitive biases such as hyperbolic discounting, loss aversion, and status quo bias contribute to exacerbate these perceptions and decisions (Börjesson et al., 2016). This perspective, when combined with political conservatism, can lead to denunciations of political authorities for perceived infringements on personal freedoms and lifestyle choices. We conclude that people may react negatively to 15-min city proposals because they see such proposals as a direct threat to their car-oriented lifestyle.

3.4. Environmental and gentrification concerns

Perhaps the most science-based criticisms of x-minute city designs are based on social inclusivity concerns. Critics argue that x-minute cities can inadvertently promote segregation by compartmentalizing amenities and limiting interaction between different neighborhoods (Casarin et al., 2023; Gillette, 2010; Mehaffy et al., 2015). Particular concern has been raised about the potential exclusion of essential workers and lower-income residents, who often rely on long commutes and multi-modal transportation for work. These groups are less likely to benefit from x-minute city schemes, due to increasing urban housing inequalities and loss of affordable housing in city centers across Europe, North America, and developing Asia. Without the flexibility to choose where and how they live and work, these populations face barriers to accessing the benefits of x-minute cities.

The x-minute city also faces criticisms from the perspective of social gentrification research. Gentrification is the process where residents are displaced from greener and more livable neighborhoods due to increased housing prices, high-end real estate investments, and land speculation (Gould & Lewis, 2016). Critics argue that by concentrating urban improvements in specific areas which are already suffering significant housing pressure, we can contribute to these spaces becoming

the exclusive domain of urban elites and investors (Anguelovski et al., 2022; García-Lamarca et al., 2022). These environmental justice concerns are not exclusive from chrono-urbanistic approaches as they are shared with other transformative urbanism experiences.

Lastly, the 15-min city concept has faced procedural criticisms. Some critics argue that the strong top-down approach by governments in funding and implementing policies promoting active travel can seem overly authoritative and lacking consensus (Dudley et al., 2022). The COVID-19 pandemic has expedited some of these initiatives, leading to quick implementations and limited public consultation. This fast-track policy practice has been problematic in various cities, including London and Athens (Dudley et al., 2022; Kyriakidis et al., 2023).

4. Examining policy acceptability factors with popular criticisms

In Sections 2 and 3, we have explored what influences people to accept or reject urban climate policies, according to the literature, and the specific reasons people oppose 15-min city projects. Now, in Section 4, we critically compare the academic insights on policy acceptability with the real-world criticisms and protests against the 15-min city model. To accomplish this, we utilized a detailed classification process involving individual assessments and group consensus among co-authors and research group members. This process helped in categorizing the strength of links between literature-based acceptability factors and popular criticisms. This comparison will help us understand which aspects of the public backlash can be explained by existing research and where this research is lacking.

Our analysis in this section (see Table 1), will dissect each major concern raised against the 15-min city. We assess how well the current literature explains each of these popular concerns, identify their root causes, and suggest potential proactive or reactive strategies. We have categorized these relationships as ‘Strong link’, ‘Weak link’, or ‘No association’. This process will not only (1) illuminate areas where the academic understanding aligns with public opinion, and thus an informed prospective analysis could have predicted the arousal of tensions and opposition, but will also (2) pinpoint where further investigation is necessary. This could be due to either a lack of exploration by studies in the body of literature, or because the unique challenges presented by the 15-min city model are yet to be fully understood and addressed. This section thus acts as a crucial link between theoretical understanding and practical application, guiding us in identifying and addressing research gaps in the context of these innovative urban strategies.

4.1. Social engineering fears

Public apprehension towards restrictive climate policies, including fears of loss of personal freedom, is shaped by a mix of political, personal, and sociopolitical factors. Key concerns include the impact on established travel habits and behaviors, especially in areas with limited public transport or for individuals reliant on cars. Personal attitudes towards climate change, along with beliefs about freedom associated with car use, are likely significant predictors of these fears. Distrust in political institutions and concerns over societal costs like disrupted routines or increased traffic add to this opposition.

While studies the body of literature provide evidence that response to a policy is proportionate to its perceived impact on daily habits, they fail to anticipate the scale of any opposition that would be fueled by conspiracy theories. These theories exaggerate a policy's impact, misleadingly portraying an increase in accessibility as a major infringement on civil liberties. The transport planning literature, with few exceptions, such as the works by Klein et al. (2022) and Verlinghieri et al. (2023) with their analyses of LTN, and the works by Anguelovski et al. (2023) and Zografos et al. (2020), with some analyses set in the Barcelona (Spain) Superblocks barely touches upon the dynamics of

conspiracy, post-truth, and post-COVID erosion of trust in experts and institutions. This gap is critical, as it shows our underestimation of how disinformation and conspiracy theories can drastically overstate negative perceptions, significantly influencing individual opposition to policies.

4.2. Distrust of centralized urban planning

In the realm of urban planning, differing views on city life and the allocation of resources are commonplace, often leading to ideological disagreements. These tensions are inherent to the field of urban planning, particularly when significant changes to the status quo are proposed. The introduction of 15-min city concepts, focusing on active mobility and accessibility by proximity, naturally invokes such debates. Criticisms against these initiatives, rooted in skepticism towards government-led projects and concerns over urban lifestyle changes, are not new or unique to this context. Historically, ideological disputes have been a predictable part of urban planning, as seen in various studies (Berry & Portney, 2017; Liekefett et al., 2023; Trapenberg Frick, 2013).

4.2.1. Suspicion towards government-led initiatives

On an individual level, this skepticism often stems from a general distrust in governmental institutions and interventions, reflecting deeply ingrained personal norms and beliefs about government roles. At the sociopolitical level, the suspicion is closely linked to political ideologies. Individuals who identify with libertarian or conservative principles, which typically advocate for minimal government intervention, are likely to view x-minute city policies as excessive government overreach. This viewpoint is fueled by a fundamental belief in reducing government involvement in societal affairs. Furthermore, distrust in political institutions naturally heightens suspicion of government-led initiatives. When individuals have low confidence in these institutions, they are more inclined to question and oppose government actions, including urban planning policies. Additionally, local political dynamics significantly influence this suspicion. In areas where specific political parties represent and champion libertarian or conservative ideals, local political polarization can intensify opposition to such policies. The correlation between individual beliefs and the local political landscape can amplify skepticism towards government-led urban initiatives, making political polarization a critical factor in public reception of these policies.

4.2.2. Distrust of urban lifestyle

These criticisms depend on travel behavior, habits and attitudes, and residential location at the individual level, as those individuals are already averse to urban lifestyle norms, including public transportation and compact living conditions, and they will likely be more prone to express distrust (Belanger-Gravel et al., 2016). Similarly, those individuals who self-selected themselves to reside in suburban or rural areas may have formed unfavorable views of urban living conditions (Amorim-Maia et al., 2023). Among sociopolitical factors, political beliefs, particularly conservatism, might be highly correlated with anti-compact city views, particularly in specific geographical areas such as the UK and the US (Norton, 2014; Wild et al., 2018). Lastly, if policies promoting urban lifestyles are perceived to be imposed without sufficient public consultation or participation, this could exacerbate the distrust.

4.2.3. Issues of geographical distributive justice

On the individual level, the residential location factor is very relevant as individuals may perceive policies as unjust if they feel their area is negatively affected or overlooked compared to others. On a sociopolitical level, perceived fairness is clearly at the core of this criticism as people outside the 15-min city boundaries may feel either (1) left out of the potential benefits or (2) unfairly burdened with the consequences (i.e., individuals perceive that they are paying for something for which

Table 1
Correlation between individual and socio-political factors with popular criticisms of minute-city policies.

Literature-based acceptability factors		Popular Criticisms											
		Fear of social engineering		Distrust of Centralized Urban Planning				Automotive freedom concerns			Social and gentrification risks		
		Restrictive Climate Policies	Personal Freedom	Suspicion Towards Government-led Initiatives	Distrust of Urban Lifestyle	Issues of Geographic Distributive Justice	Issues of Social Group Distributive Justice	Loss of Automobile Dependence	Fear of Restrictive Travel Policies	Perceived Threat to Car-Oriented Lifestyles	Social Exclusion	Housing & Real Estate Inequalities	Urban Homogenization
Individual	Travel Behavior, Habits, and Attitudes	++	++	+	++			++	++	++			
	Residential Location	++	++		++	++		++	++	++	++	++	
	Personal Attitudes and Norms	++	++	++							++		
Socio-political	Expected Personal Costs	++	++			++	++	++	++	++		+	
	Political Beliefs	++	++	++	++		++	++	++	++	+		
	Perceived Fairness	++	++			++	++	++	++	++	++	++	
	Awareness of Consequences and Ascription of Responsibilities							++	++	++	++	+	
	Partisanship Dynamics			+			+						
	Expected Societal Costs	++	+								++	++	
	Political Trust	++	+	++							++	++	
Procedural	Procedural Aspects	+	+	+	+	+	+	++	+	++	+	++	
	Expected Efficacy	+	+	+				+	+	+	++	++	

++ Strong link

+ Weak link

they are not responsible). Finally, the procedural aspects themselves, particularly those relating to transparency and inclusiveness, can also be slightly influential. If people perceive that decisions about resource distribution are made without adequate consideration of all affected communities, it can further fuel concerns about geographical distributive justice.

4.2.4. Issues of social group distributive justice

Those individuals having social group distributive justice concerns are likely to behave in a highly similar manner to those individuals who are concerned with issues of geographical distributive justice (except for the fact that residence location is not a factor in this case). An additional notable disparity resides in the significance of political ideologies, as they wield the capacity to shape individuals' perceptions regarding the allocation of costs and advantages among diverse societal factions.

4.3. Automotive freedom concerns

The issue of automotive freedom concepts is among the most prominently present concepts in 15-min city debates. The existing literature already provides a good account of the mechanisms linking pro-pedestrian policies and car-centric anxieties. However, it has not taken into account the recent politization and polarization of car-use, as exemplified by (1) the Plan for Drivers instigated by the UK Prime Minister, Richi Sunak (Department for Transport, 2023), (2) national political resistance to lower maximum speeds in Germany, or (3) the anti-cycle lane stance of right-wing parties in Spain, among many others. As culture wars on transportation topics intensify, so does the relative weight of car-freedom concerns among 15-min city debates.

4.3.1. Loss of automobile dependence

The fear of losing automobile freedom is rooted first in travel behavior, habits, and attitudes as individuals heavily reliant on automobiles may resist changes that threaten their car-dependent lifestyles. Such changes are perceived as direct threats to their comfort, convenience, or independence. These views will be affected by residential location as individuals living in car-dependent urban environments could perceive the changes as disproportionately burdensome. Because of that, the most important sociopolitical factor will be, once again, perceived fairness, as the perception that policies disproportionately disadvantage car-dependent individuals could lead to resistance. Failing to understand the prominent role that car use has on carbon emissions and climate change can create the feeling among car-users of not having to take responsibility. Consequently, the expected efficacy of a relevant policy is a significant factor, as individuals may doubt whether reducing automobile dependence will effectively address issues such as climate change, thereby influencing their acceptance of such policies.

4.3.2. Fear of restrictive travel policies

The most prominent factor being triggered by this fear is travel behavior, habits, and attitudes, as individuals may fear that travel restrictions towards specific modes of transport can significantly alter their daily travel routines. This may be exacerbated by residential location and the availability of transport alternatives to the nearby convenience of the car. In this case, expected personal costs, such as increased travel time or inconvenience, are also likely to be a major concern. Once again, perceptions of fairness are also crucial: if the costs and burdens of such policies are perceived to be unevenly distributed, resistance may grow.

4.3.3. Perceived threat to car-oriented lifestyles

Individuals accustomed to a car-centric lifestyle may perceive policies promoting alternative transportation modes as direct threats to their established routines and preferences. From a sociopolitical standpoint, political beliefs can play a role. The car, as a symbol of personal freedom, is often deeply ingrained in certain political and cultural

ideologies, which may oppose policies perceived as challenging this norm (Norton, 2014). Perceived fairness is another key factor, with individuals potentially feeling that policies disproportionately target or penalize car users. In all that, failure to appropriately ascribe responsibilities is also high on the list. In that specific case, the expected efficacy of the policy would have to be great to justify changing car-oriented lifestyles.

4.4. Social and gentrification risks

This final set of criticisms is among the least covered by the existing body of literature on transport policy acceptability. The idea that improving the conditions of an area could backfire by making life harder for its residents (i.e., by triggering gentrification or population displacement) is among the central contentious issues in global cities such as Barcelona or London (Aldred & Goodman, 2021; Anguelovski et al., 2023).

4.4.1. Social exclusion

Social exclusion fears are rooted in personal attitudes and norms, perceived fairness, and expected societal costs, as these concerns stem from a perception that x-minute city policies could disproportionately disadvantage certain social groups, exacerbating existing social disparities. Political views and the role of the state in providing equal opportunities are also modifying the perception of this risk. Procedural aspects such as perceived efficacy are highly important, as is political trust, because people will need to trust their local representatives and the efficacy of the proposed policies, so that they can avoid leaving anyone behind and also limit social exclusion.

4.4.2. Housing and real estate inequalities

Concerns regarding housing and real estate inequalities, in the context of environmental gentrification risks, connect strongly with both individual and sociopolitical determinants of policy acceptability. The residential location stands out as the most directly relevant concern. As such policies can directly affect property values and the cost of living in certain areas, residents of these areas may feel particularly threatened. The perceived fairness of the policies is at the core of these concerns, as critics may see them as exacerbating existing housing and real estate inequalities. Similarly, the expected societal costs, awareness of consequences, and ascription of responsibilities play significant roles.

4.4.3. Urban homogenization

The concern regarding urban homogenization is strongly tied to residential location as 15-min city initiatives could potentially standardize urban landscapes, leading residents to feel threatened by the potential loss of local character and diversity in their neighborhoods. Other factors include perceived fairness, as critics may argue that policies promoting urban homogenization unfairly erase cultural and social diversity, thereby leading to a loss of community identity. Lastly, procedural factors, particularly transparency and participation in decision-making processes, can have a more distant, yet still relevant role.

5. Findings and planning recommendations

Our analysis shows a strong link between the fear of social engineering felt by conspiracy theorists and what makes 15-min city policies acceptable. During uncertain times, people often seek explanations for events and they may believe in conspiracies orchestrated by secretive, powerful groups (Oleksy et al., 2021). The COVID pandemic, for instance, has fostered a mistrust in public authorities and fueled beliefs in hidden agendas among certain groups, like anti-vaxxers (i.e., vaccine skeptics) and anti-lockdown activists. These beliefs (or disbeliefs) range from the aforementioned vaccine skepticism to theories about climate change and population control (Freeman et al., 2022; Pummerer et al., 2022). Liekefett et al. (2023) observed that government-imposed

confinement brought together both political left-wing and right-wing groups in a shared belief in conspiracies linking vaccines to a global plot. While it may seem straightforward to debunk these overarching narratives with facts, people who are deeply invested in their beliefs often experience cognitive dissonance when faced with contradicting evidence. This discomfort leads them to dismiss this information, as it challenges their ideology or interests (Nwokora, 2023). This suggests that to successfully implement active travel interventions, such as the 15-min city, it is important to understand and address people's concerns about social engineering. Climate change deniers and anti-science rhetoric are particularly powerful at triggering the main determinants of policy opposition (Pummerer et al., 2022). By creating unfounded fears of climate lockdowns and restriction of movement, the deniers are creating misconceptions and overestimations of the potential negative impacts of x-minute city policies. In that sense, the absence of connection with Ascription of Responsibilities could indicate a tendency among individuals with conspiracy-based fears to blame or target abstract or ill-defined entities, such as 'the government' or 'the elites', rather than attributing responsibility to specific actors or actions (Douglas et al., 2019; N. Klein, 2023). This can create a vague, overarching sense of threat that is difficult to address or debunk because it is not tied to specific, identifiable claims or accusations.

The distrust of centralized planning appears to stem from a diversity of origins. Ideological and political beliefs surface prominently in this opposition, particularly in relation to suspicion towards government-led initiatives and a broader distrust of an urban lifestyle. These critics reflect a fundamental ideological divide, with opposition rooted more in the nature and source of the policies than in their specific provisions or impacts (Chan & Lin, 2022). Other criticisms in this category (distributional geographical fairness and social justice) emanate from concerns over expected personal costs and perceived fairness. These objections underscore the importance of the tangible impacts and implications of policies on individuals' lives (Maestre-Andrés et al., 2019). These types of protests are less concerned with the specificities and mechanics of the policies, and more rooted in broader, more abstract concerns about the philosophy and principles underlying centralized planning.

Automotive freedom concerns are triggering individual concerns, particularly around travel behavior, habits, and travel attitudes, as well as anticipated personal costs. The personal freedom and choice argument has been a keystone of studies dealing with acceptability issues regarding transport (Attari et al., 2009). In the case of x-minute city policies, these fears are often intertwined with residential location and awareness of consequences, suggesting that the perceived threat to car-oriented lifestyles can trigger significant opposition, particularly among individuals who are deeply embedded in car-dependent lifestyles. A persistent theme in this topic is the perceived inequity in the allocation of sacrifices (Kyriakidis et al., 2023), which suggests a disconnection with a correct ascription of responsibilities that would have car travel at the center of climate change reduction strategies (Jakovcevic, Steg, 2013b).

Finally, social and gentrification concerns are primarily rooted in concerns about fairness, expected societal costs, and personal attitudes and norms. These concerns often arise from the perception that implementing 15-Minute City policies might disproportionately impact vulnerable populations and exacerbate existing inequalities, leading to negative societal consequences. In this case, procedural aspects are important as they can significantly influence the degree to which these concerns are manifested and addressed in policy implementation. Urban planners should strive to reduce these social justice issues without falling for policy perfectionism discourses that stall positive change by emphasizing the downsides of transformative policies. Policy perfectionism and excessive appeals to social injustice in the proposed solutions have been well documented as an integral part of discourses of climate delay (Lamb et al., 2020).

5.1. What elements are we missing?

The literature on policy acceptability has provided a wealth of insights into the key factors that shape public acceptance of climate-related policies (Steg, 2016; Sun et al., 2016). However, based on our analysis of the fears and protests expressed by opponents of the 15-min city concept, there are a number of key themes that have yet to be fully explored in the existing literature, or where the insights provided by the available literature cannot be directly applied. Firstly, the specific dynamics of the urban-rural divide and the city center-metropolitan area debate may be particularly pertinent in the context of 15-min city policies, given the urban focus of this concept (Tamaru et al., 2023). X-minute city policies are inherently urban and area-specific, which may be intensifying the urban-rural divide and the center-metropolitan imbalance (Schwanen et al., 2011). City decisions can significantly impact metropolitan commuters, which are not electorally represented in the city, raising issues of representation, fairness, and the equitable distribution of 15-min city benefits (Remme et al., 2022; Törnblad et al., 2014; Tvinnereim et al., 2020).

The existing literature also seems to not take into account the fact that x-minute cities transform both transportation options and urban design, two elements that are strongly tied to cultural identity, habits, and lifestyle values (Freudendal-Pedersen, 2009; Steg, 2005, 2016). These are stronger ties than just ideology and political views and thus might trigger more visceral reactions (Moberg et al., 2021). Similarly, available analysis on acceptability determinants seem to omit the importance of maintaining community cohesion. Given the links between urban form and social cohesion (Križnik, 2018; Madrid-Solorza et al., 2023; Mouratidis & Poortinga, 2020), urban transformation policies that are based on changing the built environment may face opposition rooted in fear of change and fear of losing community identity.

While the literature acknowledges the importance of perceived fairness in the allocation of policy costs (Maestre-Andrés et al., 2019), the spatial nature of minute-city policies makes spatial distributional justice concerns a particularly poignant issue. In the case of an over-localized minute-city policy implementation, opposition may arise from neighboring areas through a feeling of being left out of political priorities. The spatial and geographical component of such accessibility is a topic that has been understudied (Peer et al., 2023), especially given the established links between residential self-selection, lifestyle habits, and transportation patterns (Ettema & Nieuwenhuis, 2017; Van Acker, 2021). In that sense, x-minute city policies can learn about how other transformative urbanism policies, such as the aforementioned Superblocks in Barcelona, have addressed the spatial justice component (Amorim-Maia et al., 2023; Anguelovski et al., 2023; Zografos et al., 2020).

Perhaps the greatest gap, however, relates to the lack of thought on how these conspiracy theories, with their incorporated set of misinformation and disinformation, might affect spatial planning initiatives. To date, most research on the effects of conspiracy theories has been devoted to national policies regarding climate, vaccination, or political debates (Cassam, 2023; Imhoff & Lamberty, 2018; Pummerer et al., 2022). Conspiracy-based argumentation in urban planning, while certainly not new (Trapenberg Frick, 2013, 2018; Trapenberg Frick et al., 2015), may have long-lasting ramifications, especially since it has been found to foster intergroup hostility and feelings of anger (Imhoff & Lamberty, 2018), create political distrust, and weaken respect for the democratic process (Pummerer et al., 2022).

Finally, while the available literature recognizes the role of procedural aspects on policy acceptability, the exact mechanisms will have to be adapted to a built environment-based policy. These issues include considering the geographies and timing of implementation, the intensity of the participation process for those individuals who live or use the affected area, and the integration with other policies and services that share the space with the urban intervention, such as parking policies or transit services.

5.2. Unsuitable acceptability factors

Despite the high quality of the research on policies regarding urban climate change mitigation or travel demand policies such as congestion charging (Schuitema et al., 2010; Sun et al., 2016; Twinnereim et al., 2020), carbon pricing (Drews et al., 2022; Maestre-Andrés et al., 2019), or low emission zones (Gonzalez et al., 2022; Morton et al., 2021; Oltra et al., 2021), some of the key findings in that literature pertaining to policy implementations cannot be directly applied to x-minute city programs. A prime example of this is the potential positive impact of revenue reinvestment in policy acceptability (Börjesson et al., 2016; Gu et al., 2018; Petraki et al., 2022). Different from congestion charging, x-minute city policies generate no direct revenue and thus they cannot offer the possibility of a reinvestment of revenues to socially accepted activities, such as public transport funding. Similarly, x-minute cities affect all members of society and do not have the capacity to apply exemptions or discounts for certain groups, which is something that has been repeatedly found to mitigate fairness concerns (Schuitema et al., 2010). Despite the extended use of tactical urbanism, and unlike congestion pricing plans (Eliasson & Jonsson, 2011), the types of interventions in the built environment in the context of x-minute city plans are enduring and cannot be easily implemented as a trial or as street experiments (Bertolini, 2020; VanHoose et al., 2022).

6. Conclusions

Our examination of what the climate-policy literature has learned on policy acceptability in the past, and the contents of recent protests against the 15-Minute City provide several insights and recommendations that can interest policymakers and urban planners.

First, our analysis allows us to better understand the seeming popularity of conspiracy beliefs and scares over x-minute city theory. Fears of climate lockdowns and social engineering, a dominant theme in the protests, are triggering a wide variety of acceptability levers, from individual, sociopolitical, and procedural issues. Because of that, in fighting against these conspiracy theories, a comprehensive approach is essential. This approach should include public education and myth debunking, policy clarification and safeguards assurance, and community engagement for transparency. Such an approach should entail not just dispelling misinformation, but also providing accurate information regarding the implications of chrono-urbanistic guidelines, delineating the associated responsibilities, and directly addressing the diverse concerns and anxieties voiced.

Second, the inherent geographies of 15-minute city policies present both challenges and opportunities for their implementation. On the one hand, and given their localized focus, decisions about where and when to implement these policies can significantly influence perceived fairness and, therefore, acceptability. An emphasis on participatory co-design processes, addressing rural concerns through broader dialogue, and integrating lay knowledge into democratizing planning can play a critical role in reducing opposition, as can ensuring spatial consistency across policy effects. Most transformative urbanism policies are also prone to criticisms from those individuals who live away from the city center, and perceive that their right to access the city should be above the right of the city to guarantee sustainable and healthy urban conditions for its inhabitants. Direct engagement in addressing economic fears, equity and gentrification assessments, and creating dissent-prevention tools, plus inclusive planning are crucial in this context.

On the other hand, the localized nature of these urban transformations, brought about by x-minute city policies, make the transformations tangible and visible. Thus, citizens can directly observe the effect(s) of these policies in their daily life and environment, and in that they offer more readily observable benefits compared to emissions reduction policies or city-scale low-emission zones. Highlighting the alternative transport benefits and using participatory methods for local adaptation can make a significant difference. This visibility will likely

not modify initial opposition, although observing tangible benefits in an already transformed area might increase acceptability in another area, but can potentially lower opposition in the post-implementation phase.

Finally, our recommendation is to strengthen the x-minute city policy flexibility potential in order to not only (1) design unique solutions for each urban area but also to (2) continue adapting the policy goals to the population's needs. In that sense, chrono-urbanistic approaches should avoid static all-encompassing criteria such as the 15-min threshold and instead prioritize short walking access to the most beneficial urban functions based on citizens' needs. This process entails gathering population perception on what is too far away and should be closer, adjusting the policy design by changing pedestrian and biking infrastructure to optimize active travel access to essential destinations, as we simultaneously emphasize service distribution and allocation. The x-minute city tag is thus more adequate than the 15-min city tag at transmitting the goal of planning for travel time-based proximity, and not for an arbitrarily set threshold. The x-minute city policy should not be viewed as a finish-line policy, but rather as a continuous process of monitoring, feedback gathering, indicator updating, and timely intervening.

Our examination has also revealed that future research needs to focus on how these transformative urbanism policies generate environmental justice fears of social change that can manifest through fears of loss of social cohesion, or through concerns about gentrification. Future research also needs to provide more insight into responsibility allocation, and the idea of fairness regarding travel and transportation habits. The apparent disconnection between car-dependent lifestyles and a reluctance to take personal responsibility through personal behavior change seems to guide a number of opposition protests, either directly (i.e., loss of personal freedom) or underlying ideological or political motives (i.e., car-oriented lifestyles).

In conclusion, while 15-Minute City programs offer great promise concerning urban livability and travel behavior change towards meeting sustainable development goals (SDGs), their eventual success largely depends on their implementation and acceptability. By being open to sensible critique, debunking conspiracy theories, and maximizing the flexibility potential of the policy, we can enhance the likelihood of acceptance of 15-Minute City programs, with a reduction in the degree of opposition.

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CRedit authorship contribution statement

Oriol Marquet: Writing – review & editing, Writing – original draft, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Laia Mojica:** Writing – review & editing, Supervision, Project administration. **Marta-Beatriz Fernández-Núñez:** Writing – review & editing, Supervision. **Monika Maciejewska:** Writing – review & editing, Writing – original draft, Investigation, Data curation, Conceptualization.

Data availability

Used data is from a literature review. We can share that if anyone is interested

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