

Politizing futures of territories: Municipal climate change adaptation plans and the issues of gender equality and mobility

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Abstract

Mobility and transport are central themes for understanding the future of territories. Mobility practices and styles are strongly associated with complex realities, such as those related to climate change. Despite the centrality of the concepts, both mobility and climate change have taken a long time to be problematized, under the prism of gender equality. However, the existing literature allows us to establish that, given the complexity of the societal challenges that lie ahead, gender is increasingly a determining variable, to be considered, from a double perspective, both by policymakers at the local level and by decision-makers. In this sense, our argument focuses on the political and sociological relevance of gender in the climate debate and urban mobility. More specifically, this article seeks to understand how gender and urban mobility issues were integrated into Municipal Plans for Adaptation to Climate Change, in 17 municipalities in Portugal. To this end, a thematic content analysis of the Municipal Plans was carried out, aiming to (i) map the priority measures of the municipalities, in relation to mobility; (ii) and understand how gender is considered in adaptation measures to climate change. This text summarizes the results achieved, starting with a brief theoretical framework on the various proposed concepts.

Introduction

Mobility and transport are central themes for understanding the future of territories. Mobility practices and styles are strongly associated with complex realities, such as those related to climate change. Despite the centrality of the concepts, both mobility and climate change have taken a long time to be problematized, under the prism of gender equality. However, the existing literature allows us to establish that, given the complexity of the societal challenges that lie ahead, gender is increasingly a determining variable, to be considered, from a double perspective, both by policy makers at the local level and by decision makers. In this sense, our argument focuses on the political and sociological relevance of gender in the climate debate and urban mobility. More specifically, this article seeks to understand how gender and urban mobility issues were integrated into Municipal Plans for Adaptation to Climate Change, in 18 municipalities in Portugal. To this end, a thematic content analysis of the Municipal Plans was carried out, aiming to: (i) map the priority measures of the municipalities, in relation to mobility; (ii) and understand how gender is considered in adaptation measures to climate change. This text summarizes the results achieved, starting with a brief theoretical framework on the various proposed concepts.

Literature review

The literature is extensive and consensual regarding gender inequality and mobility (Cubells et al., 2020; Kawgan-Kagan, 2020; Montoya-Robledo et al., 2020; Olivieri & Fageda, 2021). The literature has shown that the movement patterns of women are more complex than those of men (Montoya-Robledo et al., 2020; Olivieri & Fageda, 2021). On average, women travel shorter distances, make more trips (Carvalho and Oliveira, 2017; Cubells et al., 2020; Olivieri & Fageda, 2021), despite longer travel times (Cubells et al., 2020), use the car less and use public transport more (Cubells et al., 2020; Montoya-Robledo et al., 2020; Olivieri & Fageda, 2021). These mobility differences are intrinsically linked to gender representations and lead women to specific mobility needs (Carvalho & Oliveira, 2017). This happens,

among other reasons, due to the time that women dedicate to housework (Olivieri & Fageda, 2021) , tend to work closer to their area of residence (Kawgan-Kagan , 2020) and to have greater responsibilities in relation to the care of children. family members (Kawgan-Kagan, 2020; Montoya-Robledo et al., 2020) , particularly in relation to childcare. According to Kawgan-Kagan (2020), both men and women, when they do not have children, have a higher rate of car use when they are in paid employment.

Some studies (in particular research on the use of time) point out that this inequality is due to the persistence of traditional gender roles in all activities related to family mobility and, in particular, of children, young people and other dependents. The authors speak of the existence of the " gendered car culture " (Cubells et al., 2020; Olivieri & Fageda , 2021) to demonstrate that there tends to be an increased concern on the part of women with the issues of adopting sustainable mobility, while men have a greater affinity with cars, technology and innovation (Kawgan-Kagan, 2020) being also more dependent on the car (Cubells et al., 2020).

But the gender variable is not always taken into account in urban and transport planning (Gauvin et al., 2020) in a territorial context. Several studies have focused on the reasons that can explain this invisibility and erasure: most decision-makers in terms of mobility are men (Uteng , 2021); there are no robust data on women's daily mobility (Gauvin et al., 2020; Uteng, 2021) ; the absence of gender as an academic and political discipline in the fields of transport and urban planning (Uteng, 2021) ; lack of structures and in-depth knowledge of how gender can be incorporated into the planning process (Levin, 2019).

As we have already seen, the relationship between gender and mobility has unique characteristics that deserve to be studied and understood, as women have different needs and challenges in terms of mobility and transport (Carvalho & Oliveira, 2017). In the understanding of Kawgan-Kagan (2020) only when gender differences are considered in planning processes will it be possible to improve the quality of life in urban areas.

As with urban mobility, gender is increasingly being introduced into the climate debate (Ga y -Antaki , 2020). Studies on gender and sustainability show that gender is a pivotal issue to be taken into account in the mitigation of climate impacts and, in particular, in the management of its consequences in terms of lifestyles and lifestyles (water management, environmental health, etc.). In addition, studies show that there are serious inequalities to be managed in terms of gender, showing that women will face heavier psychological burdens deriving from societal transformations (Gay - Antaki , 2020). It is in this sense that Sima Bahous emphasizes the importance of women's participation in sustainability and the need to empower young women to participate in decision-making regarding climate change.

As we have seen, we have an increasingly extensive and in-depth literature on the need to include gender (along with other variables such as class, age and race) in decision-making that involves changes for transition and sustainable mobility and, at the same time, for managing the consequences of climate change. But has politics in particular been concerned with this dimension? How are the plans to combat climate change actually including the gender dimension? These are the questions that we will try to answer in a synthetic way in this text, based on a content analysis of 17 Plans that are published and that constitute the references for the action and decision-making of the municipalities.

Methodology

In Portugal there are 308 municipalities. Of these, 83%, according to DECO hold a Climate Change Adaptation Plan. This text is the result of research carried out using content analysis of that official documents that work as guides for action and decision- making at the local level. ¹

Until now we have analysed until only 18 plans. These were founded and published in public websites, as shown in table 1. In order to present a preliminary view about the extent to which mobility and gender makes part of that plans, we

made the selection following criteria: (i) consider cases of the entire territory, covering different regions, which have distinct needs and present singularities concerning climate change challenges, linked to their natural and socio-economical features; (ii) having been done at different years; (iii) be available online; (iv) and include climate change adaptation measures associated with mobility. The table 1 includes this information, contemplating the sentences respecting to the measures being planned. It is still an incomplete analysis, but it allows to define a consistent trend regarding the plans that tend to be very similar, sometimes complying more with the legal requirement than with the specificities of the places.

Preliminary Results

Based on the analysis carried out in the Municipal Strategy Plans for Adaptation to Climate Change (Table 1) there are changes in what they consider to be the priority measures. Before 2020, the measures were mainly aimed at promoting travel using collective transport and soft modes (bicycle and walking), the creation of pedestrian and cycling infrastructures, the banning of car access to city centers, the creation of car parks in peripheries, among others. In 2018, Lisbon stood out with the implementation of measures aimed at the development of new communication and innovation technologies and bringing the transport offer closer to needs, measures not verified in the other municipalities under study. From 2020 and with the increase in electric mobility, the plans have been encouraging this type of mobility, promoting car-sharing services, with a focus on electric mobility and active mobility in the fight against climate change. In these cases, the measures do not involve banning the car, but replacing fossil fuels with renewable energy sources to supply vehicles, promoting the acquisition of efficient vehicles, efficient accessories and fleet renewal, establishing an age limit for them, among others, among others.

Regarding gender, we observe that the documents that shape and embody the mobility plans explicitly take the “subjects” of the action (sustainable mobility and transition) as depersonalized entities, without explicitly considering the gender variable, regarding problems that concretely involve gender inequality and gender differences.

¹See <https://deco.pt/alteracoes-climaticas/>

Table 1. Content of municipal climate change adaptation plans (sentences extracted from the plans)

City	priority measures
Amarante (2016)	<ul style="list-style-type: none"> - Promotion of actions to disseminate and exchange experiences in the field of sustainable mobility; - Promote the pedestrian and cycle paths network - Create car parks on the outskirts
Braga (2016)	<ul style="list-style-type: none"> - Implementation of an integrated mobility plan that effectively reduces the use of individual motorized transport, promoting travel in collective transport and soft modes (bicycle and walking)
Évora (2016)	<ul style="list-style-type: none"> - Increase pedestrian and public transport; - Create cycle paths; - Idea of joining all schools in a single pedestrian circuit, with security guarantees.
Guimaraes (2016)	<ul style="list-style-type: none"> - Amend legislation to address the issue of school insurance for students who choose to cycle to school. - Restrict car parking near schools, to increase the use of public transport and bicycles; - Public transport careers have to take into account the equipment, as mobility depends a lot on the location of the infrastructures - Have tiers in the pass as age increases. - Prohibit/condition the access of cars to the historic center; - Increase parking outside the historic center, and only public transport can enter the center.
Viana do Castelo (2016)	<ul style="list-style-type: none"> - Implement cycling network in the urban area and surroundings; - Develop the Sustainable Mobility Plan
Lisbon (2018)	<ul style="list-style-type: none"> - Capacity for innovation (new solutions -ticketing- and habituation to the culture of innovation) - Improved modal split - Bringing transport supply closer to needs - Development of new communication technologies
Ílhavo (2018)	<ul style="list-style-type: none"> - Actions to promote smooth modes of mobility
Leiria (2018)	<ul style="list-style-type: none"> - Creation of temporary restrictions on the circulation of more polluting vehicles in critical urban areas - Promote increased sustainable urban mobility and the use of soft modes in urban areas
Gondomar (2019)	<ul style="list-style-type: none"> - Increase sustainable mobility solutions, either through cycling pedestrian corridors or through network improvement collective public transport.
Faro (2019)	<ul style="list-style-type: none"> - Shared mobility and matching transport supply to demand.

	- Increase in pedestrian and bicycle use
Guarda (2020)	-Improve the quality and safety conditions of transport use. - Promote soft mobility in urban areas through clickable and pedestrian networks.
Maia (2020)	- Implementation of the sustainable mobility plan that effectively reduces the use of individual motorized transport, promoting travel in collective transport and smooth modes (bicycle and walking)
Aveiro (2021)	- Strengthen / expand support infrastructures for smooth mobility; - Improve the supply and transport network;

	<ul style="list-style-type: none"> - Promoting an increase in " pedestrianism " and the use of bicycles; - Promoting urban rehabilitation and improving accessibility; - Promote sustainable mobility, with incentives for the use of soft modes
Arruda dos Vinhos (2021)	<ul style="list-style-type: none"> - Promotion of electric mobility - Awareness actions for smooth modes of mobility
Oliveira de Azeméis (2021)	<ul style="list-style-type: none"> - Increase in the area and quality of urban spaces dedicated to pedestrians and smooth modes of travel; - Promote car-sharing services, with a focus on electric mobility and active mobility.
Águeda (2021)	<ul style="list-style-type: none"> - Creation of infrastructures to support smooth mobility - Implementation of shared smooth mobility systems - Implementation of requirements regarding CO2 emissions and energy consumption in the life cycle of vehicles - Promote the acquisition of efficient vehicles, efficient accessories and fleet renewal, establishing age limits for them - Promote the improvement of the transport supply and network - Promotion of on-demand (flexible) public transport in low-density areas - Creation of alternatives at the route level - Promote the transport of bicycles on public transport (short) - Promoting the replacement of fossil fuels by renewable energy sources for the supply of vehicles
Bragança (no date)	<ul style="list-style-type: none"> - Promoting smooth mobility with the creation of cycle paths to increase the use of bicycles; - Public transport powered by renewable energies.
Santarém (2022)	<ul style="list-style-type: none"> -Purchase of electric vehicles, incentive to the use of low CO2 emission public transport; -Maintenance / increase of electric charging network, fleet management technology, intermodal transport network, for optimisation of resources and reduction of CO2 emissions; -Increase / creation of cycling and pedestrian network, in urban / rural landscape enhancement environment, for reduction of CO2 emissions, health, well-being.

Source: data retrieved from municipality plans

Conclusion and implications

In synthesis, mobility and sustainability are intrinsically related with gender for multiple reasons, as there are different expectations and roles socially ascribed to people, and part of them link with family temporalities and mobilities. Regrettably, the lack of attention concerning gender is a common feature of public measures for climate change adaptation, and Portugal is no exception. Amongst all other important singularities of the relationship between gender and climate changes, it is relevant to rehearse the fact that women are still strongly responsible for mobilities in the families, despite the fact of being weekly involved in scientific innovation focused on mobility and decarbonisation of the living spaces, as well as on the promotion of sustainable mobility (what means to use; at what time, by whom). Contrary to what literature has been asserting, gender seems to be out of the discussion about the promotion of electric mobility and smooth modes of travel which paradoxically appear at the forefront of the concerns and priorities of the Municipal Plans to combat climate change. In fact, besides continuing to feed certain types of mobility and justify certain types of urban planning proposals, they do not consider gender agency and, in particular, the already established inequalities, in particular between men and women, and sequentially the dominant patterns of masculinity in the mobility sector (Cubells et al., 2020). Therefore, on the line with the conclusions of Zhang et al. (2021) , in China, we consider that Portugal needs to pay more attention to emphasizing gender equality at a strategic level in order to promote the formulation of gender policies. Linked to mobility and climate change. It needs to strengthen research on gender and sustainable mobility, support and encourage women's participation, strengthen capacity building and improve women's access to mobility-related resources, knowledge and information (Olivieri & Fageda, 2021) in planning processes, with a view to improving the quality of life in urban areas by reducing urban spatial scarcity, local and global emissions, and noise exposure (Kawgan-Kagan, 2020).

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References

- Gauvin, L., Tizzoni, M., Piaggese, S., Young, A., Adler, N., Verhulst, S., Ferres, L., & Cattuto, C. (2020). Gender gaps in urban mobility. *Humanities and Social Sciences Communications*, 7(1), 1–13. <https://doi.org/10.1057/s41599-020-0500-x>
- Kalbarczyk, E., & Kalbarczyk, R. (2022). Credibility assessment of municipal climate change adaptation plans using the ex-ante method: A case study of Poland. *Sustainable Cities and Society*, 87, 104242. <https://doi.org/10.1016/j.scs.2022.104242>
- Kawgan-Kagan, I. (2020). Are women greener than men? A preference analysis of women and men from major German cities over sustainable urban mobility. *Transportation Research Interdisciplinary Perspectives*, 8, 100236. <https://doi.org/10.1016/j.trip.2020.100236>
- Montoya-Robledo, V., Montes Calero, L., Bernal Carvajal, V., Galarza Molina, D. C., Pipicano, W., Peña, A. J., Pipicano, C., López Valderrama, J. S., Fernández, M. A., Porras, I., Arias, N., & Miranda, L. (2020). Gender stereotypes affecting active mobility of care in Bogotá. *Transportation Research Part D: Transport and Environment*, 86, 102470. <https://doi.org/10.1016/j.trd.2020.102470>
- Olivieri, C., & Fageda, X. (2021). Urban mobility with a focus on gender: The case of a middle-income Latin American city. *Journal of Transport Geography*, 91, 102996. <https://doi.org/10.1016/j.jtrangeo.2021.102996>
- Uteng, T. (2021). Gender gaps in urban mobility and transport planning. *Advances in Transport Policy and Planning*, 8, 33–69. <https://doi.org/10.1016/bs.atpp.2021.07.004>
- Zhang, Y., Huang, L., Chao, Q., Yang, Q., & Chen, C. (2021). Analysis of gender equality in climate governance. *Chinese Journal of Population, Resources and Environment*, 19(1), 98–103. <https://doi.org/10.1016/j.cjpre.2021.12.010>