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Conference Paper**Author(s):**

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Publication date:

2023-07

Permanent link:

<https://doi.org/10.3929/ethz-b-000622729>

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Democratic discrepancies in urban sustainable development between residents' policy preferences and existing policy plans

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Paper presented at the *AESOP Annual Conference 2023* in Lodz; 11-15 July 2023

Cities are critical for achieving the Sustainable Development Goals (SDGs). As a consequence, cities are increasingly considered policy actors of global relevance. However, there is a wide range of policy issues considered under the umbrella of urban sustainable development (USD) such as biodiversity protection, circular economies, education, transportation, or poverty reduction. Given this wide range of USD, our research seeks to analyze whether residents' USD preferences align with the priorities of existing USD policy plans. To this end, we examine the preferences of 5,800 residents across eight systematically selected European cities – Antwerp, Frankfurt, Helsinki, Lisbon, Manchester, Marseille, Milan, and Valencia - through an original, preregistered survey experiment. Participants were asked to rate randomly composed USD policy plans out of 17 identified potential USD policy issues. In parallel, we analyzed 167 actual existing USD policy plans from the same cities. Our findings indicate a significant discrepancy between residential USD preferences and the cities' pursued USD policy plans. While the USD policy plans predominantly prioritize USD policy issues like education, biodiversity, transportation, and urban green spaces, residents expressed preferences for issues tied directly to their basic and everyday needs such as cost of living, public health, poverty, and unemployment. This democratic discrepancy underscores the importance of securing basic human needs as integral parts of USD.

Introduction

Cities are increasingly recognized as pivotal actors in the global push towards sustainable development (SD). With a striking 57% of the global population living in urban areas (UNCTAD, 2023), their impact is undeniable (United Nations Conference on Trade and Development, 2023). Despite occupying only about 3% of the planet's surface, cities are economic powerhouses, accounting for over 80% of global economic activity (World Bank, 2019). Moreover, they are responsible for three-quarters of worldwide resource consumption and greenhouse gas emissions (United Nations Environment Programme, 2019). Such statistics have prompted international entities to acknowledge the crucial role of cities both as epicenters of SD challenges and as significant players capable of promoting global SD (Parnell, 2016; Acuto, 2016; Satterthwaite, 2017; UN Habitat, 2020; Wittwer et al., 2023).

Recognizing their crucial role, current international policy frameworks such as the Sustainable Development Goals (SDGs), the New Urban Agenda of Habitat III, and the Paris Agreement have emphasized the central importance of cities in driving sustainable development. As such, the international discourse has shifted from a perspective of cities as primary contributors to environmental destruction and social inequality to valuing the cities potential for a more sustainable future (Barnett and Parnell, 2016; Watson, 2016). Indeed, cities are seen as essential in realizing not only the urban-centric SDG 11 but the entire array of SDGs.

Innovative and progressive urban sustainable development (USD) policy plans have emerged across the globe. For instance, Amsterdam, with its 'City Doughnut' plan, aspires to foster a city that thrives socially and ecologically, all while acknowledging its global responsibility to sustainably coexist with the planet and its inhabitants (City of Amsterdam, 2020). Similarly, Helsinki is striving to achieve carbon neutrality by 2035, providing extensive public data on its SDG progress and leading as the first European city to perform a voluntary local SD review (Helsinki, 2021). Lisbon, too, has devised an ambitious agenda, uniting its post-2008 financial crisis economic recovery with a robust ecological transformation, aiming to achieve carbon neutrality by 2050 (Local Governments for Sustainability, 2019). These ambitious USD policy plans are not only addressing local needs but are also shaping national and international SD agendas, thereby endorsing a specifically urban perspective on sustainable development (Wittwer et al., 2023).

Yet, cities do not and will not “save the planet” (Angelo and Wachsmuth 2020). Vulnerable residents may suffer from urban ecological transformations through processes such as “climate gentrification” (Long and Rice 2018, Anguelovski et al. 2019), ecological sustainability can marginalize local equity concerns (Fiack et al. 2021), and mainstream economic growth policies can be disguised under the program of SD (Obeng-Odoom 2014, Valencia et al. 2019). Indeed, these

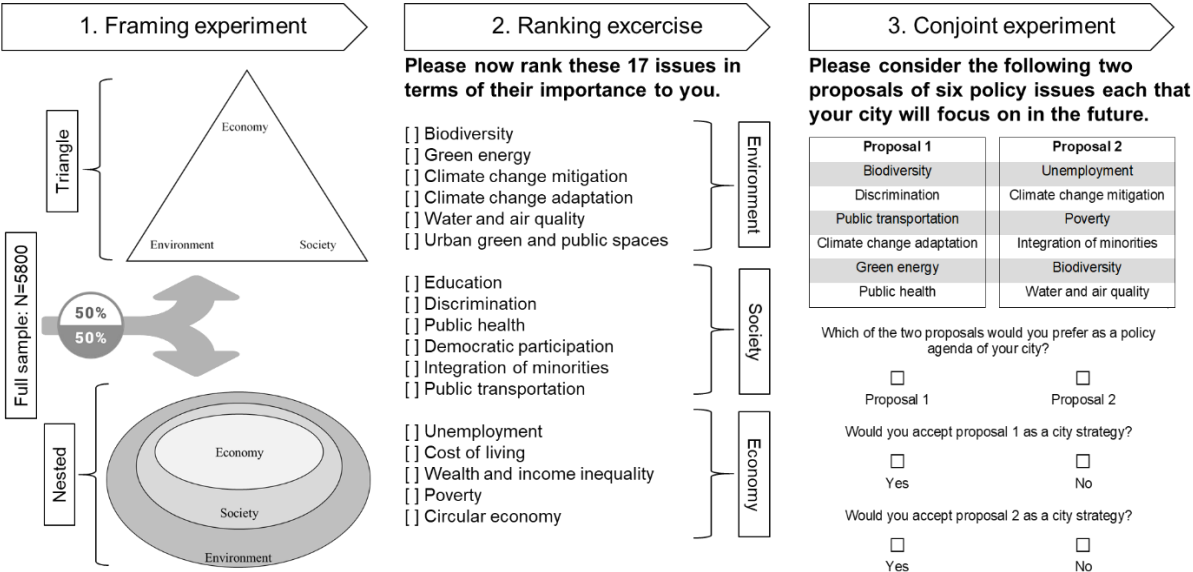
characterizations are not mutually exclusive, given the complexity and multiplicity of urban policy-making (Kaufman and Sidney 2020). Assessed by their prospects for contributing to a sustainable future, the set of policies that cities enact may often be found to be deeply ambivalent (Enright and Rossi 2018).

As this introductory discussion illustrates, the scope and substance of USD policy plans varies, ranging from protecting biodiversity, promoting circular economies, to reducing poverty. To add to this complexity, for USD to be democratically backed-up, accepted and effectively adopted, it should not be implemented in a technocratic manner but rather be co-produced (Frantzeskaki et al., 2017). As in other policy domains, a democratic government will face legitimacy issues if there is a disconnect between the people's will and the political system's policy output (Christensen & Rapeli, 2021; Wlezien, 1995). Given the urgency of sustainability transformation, the democratic legitimacy is especially critical, while at the same time SD is often accused of being technocratic and de-politicized (Keil and Whitehead 2012; Wachsmuth et al. 2016; Wittwer et al. 2023). This paper therefore aims to study the USD policy issues preferences of residents and compares these preferences with actual existing USD policy plans.

To understand the relation between residents' preferences and actual existing USD policy plans, we conducted a preregistered, original survey with a total of 5'800 respondents from eight systematically selected European cities, namely Antwerp, Frankfurt, Helsinki, Lisbon, Manchester, Marseille, Milan, and Valencia. In the survey, we conducted a combination of several framing and conjoint experiments. In the beginning of the experimental part, survey participants were randomly framed with one of two different SD conceptualizations, either the triangle or the nested SD concept (see figure 1 for the two sustainable development frames and for the 17 USD policy issues). This framing experiment putted a bracket around the following conjoint experiment and it resembles a randomized control trial. Survey participants then had to rank 17 USD policy issues that we found in the literature as currently predominantly discussed under the label of USD according to their preferences. Each of the USD policy issues can more or less be assigned to the three domains of environment, society, and economy (see also Maclaren 1996, Halla et al. 2020 for a distinction between SD domains and SD issues). In the following conjoint experiment, survey participants had to assess two USD policy plans that were randomly consisting of six out of 17 USD policy issues that we derived from the literature (see Table S1 in the supplementary information). Next we want to compare USD preferences of residents with actual existing USD policy plans. Therefore, we collected and thematically coded 167 existing USD policy plans in these eight cities to find out what these eight cities actually do in terms of USD planning and policy-

making. See the Methods section for more information about the survey and the thematic analysis of the USD policy plans.

Figure 1: Overview of the three-part survey experiment



Note: This figure provides a visual representation of the three main components of the survey experiment. Framing Experiment (left): Here, two frames, represented as 'Triangles' and 'Nested', were randomly presented to the respondents. Each frame was received by half of the sample. Ranking Exercise (middle): This part of the figure displays the 17 Urban Sustainable Development Issues that respondents were asked to rank. The issues are grouped into three SD domains: Environment, Society, and Economy. It is important to note that while these groupings are shown here for clarity, respondents ranked the issues independently, and these three SD domains were not presented during the actual experiment. Choice Experiment (right): This section provides an example of the Choice Experiment task. Respondents were presented with two proposals, each containing six USD policy issues randomly selected from the 17 issues. The issues shown in this example are for illustrative purposes only, and actual proposals varied due to the random selection of issues.

The results reveal a discrepancy between the USD preferences of residents and the actual pursued USD policy priorities of the cities that they describe in their policy plans. While we could detect priorities for policy issues such as education, biodiversity, public transport, and urban green spaces in the USD policy plans of the eight European cities, residents prefer USD policy issues that secure their everyday needs such as cost of living, public health, education, poverty, and unemployment. This results are largely stable across all eight diverse European cities. This points to a discrepancy between democratic demands and USD policy plans, but probably more important to the need of securing basic human needs when cities want to pursue profound USD policy plans in important SD issues such as climate change, biodiversity, or renewable energy.

USD policy issues and SD concepts

Cities address various policy issues under the label of SD (e.g., Berke and Conroy 2000, Saha and Patterson 2008, Dempsey et al. 2011), including waste management (Baud et al. 2001), housing (Preval et al. 2016, Culwick and Patel 2020), transport (Kenworthy 2016, Denis et al. 2021), or urban green public spaces (De la Sota et al. 2019, Wang and Foley 2021). Cities also combine several issues such as transport and urban form to plan for compact urban settlements (Kenworthy 2016, Lerpold et al 2021), or they coordinate health and environmental concerns with the provision of housing (Preval et al. 2016). Cities also gather already existing but dispersed and ad-hoc initiatives under the umbrella term of USD (Saha and Paterson 2008, Affolderbach and Schulz 2017).

Given the broad range of policy issues encompassed by USD, we aimed to identify a comprehensive but manageable list of specific USD policy issues to examine in this study. To do this, we combined a review of academic literature on urban sustainability with an analysis of various recognized USD frameworks and indicators. On the one hand, we studied articles which specifically collected, discussed, analyzed or evaluated USD policies and their effects (e.g., Berke and Conroy 2000, Saha and Paterson 2008). On the other hand, we additionally drew on various influential USD frameworks (see for example Boesch and Montmollin 2020). The result is a list of 17 distinct USD policy issues, which we categorize into three broad SD domains: Environment, Society, and Economy (see Table S1 in the appendix). We incorporated these many 17 USD policy issues in order to account for a multidimensionality of USD. Yet, we do not claim that we incorporated all potential USD policy issues given their diversity and scope. We categorized them in the three domains because it facilitates a better overview of these divers USD policy issues, yet we are aware that these USD policy issues overlap and that the helpfulness of the domain approach is limited.

Our study recognizes and examines the impact of different conceptualization of SD and USD approaches. We therefore apply a rough distinction between two conceptualizations of SD: the triangle and the nested approach (e.g., Halla and Binder 2020, see also figure 1). To examine conceptual SD frameworks is crucial because they frame what is within the scope of SD and they are the basis for measurements and indicator frameworks (Ravetz, 2000; Hopwood et al., 2005; de Vries & Petersen, 2009; Hák et al., 2016; Pope et al., 2017).

The triangle conceptualization understands SD through its ecological, social, and economic domains (Maclaren 1996, Strange and Baley 2009, Pope et al. 2017), also referred to the 'triple bottom line' approach of sustainability (Elkington, 1997). This conceptualization is often illustrated by a triangle that puts one of the three domains per corner. The quest is to find synergies and allow for trade-offs as one cannot maximize all the three domains of SD (Campbell 2016, Lerpold et al. 2021). The triangle conceptual understanding of SD is also reflected in the current language of the

SDGs, as they frame the SDGs in the preamble as “a plan of action for people, planet and prosperity” (United Nations 2015, p. 1). The idea of framing SD in such rather universal terms is to offer a broad framework under which a variety of initiatives can be subsumed and a variety of actors can unite (Parnell 2016).

The nested conceptualization of SD rejects the implicit, and sometimes explicit assumption, of the equality of the three domains and advocates for a more ecological-centric perspective in which human activities are nested within the biophysical environment (Halla and Binder 2020). It is based on a so-called strong interpretation of sustainability, whereby it is not possible to substitute between the three domains (e.g., by compensating environmental damages with economic gains) (Neumayer 2013, Wurster 2013). Thus, it explicitly rejects the trade-off notion and instead incorporates the notion of environmental limits and minimum standards in which SD occurs. An application of this SD understanding is the so-called “doughnut model”, introduced by Raworth (2012), that integrates planetary ecological boundaries and social foundations of SD. The model operationalizes the environmental limits with the planetary boundaries framework that proposes nine interlinked biophysical boundaries at the planetary scale (Rockström et al. 2009). The social foundations consists of fundamental and social human needs are operationalized as the eleven social priorities stemming from the Rio + 20 Earth Summit (Raworth 2012, Dearing et al. 2014). The planetary boundaries should not be exceeded, while the social foundations should not be undershot. SD only occurs within both of these boundaries. This then culminates in a new definition of sustainable development in the Anthropocene: “Development that meets the needs of the present while safeguarding Earth’s life-support system, on which the welfare of current and future generations depends” (Griggs et al. 2013, p. 306).

Residential USD preferences and potential discrepancies with existing USD plans

Based on these more conceptual considerations, we want to examine residential USD preferences. Residential policy preferences are often shaped by various factors such as their socioeconomic status, age, cultural background, political ideology, and lived experiences, all of which can lead to a diversity of opinions on policy priorities (Checkoway 1995, Campbell 2012, Wolch et al. 2014, Wicki et al. 2022b). We study residents preferences on a variety of USD policy issues because there are potential trade-offs between USD policy issues inherent in the SD concept (Campbell 1996) as well as in actual existing USD plans (Berke and Conroy 2000). This complicates the quest for developing more democratically accepted USD policies and plans.

The literature of sustainability studies recognizing the importance of democratic acceptance of – USD and the potential divergence between residents' USD preferences and actual implemented USD as they work with the concept of negotiated understandings of sustainability that is in contrast pre-determined definitions of SD (e.g., Pope et al. 2017; Binder et al. 2020). The urban planning and urban governance literature points to different rationalities at work between planners and residents. We would expect disparities between the more technocratic expert rationalities and the more everyday rationalities of residents. Vanessa Watson (2003, p. 404) describes that policy-makers, planners, and academics all too often based their interventions or recommendations “on values, beliefs, or rationalities of those for (or with) whom they plan, which frequently do not hold.” The technocratic nature of policymaking processes and limited public participation can lead to divergences governmental policies and democratic demands of residents (Swyngedouw, 2005; Hofer and Kaufmann, 2022). This discrepancy may also be caused through complex urban governance arrangements where various stakeholders interact and negotiate, each with unique perspectives, interests, and incentives to collaborate (Lubell et al., 2007). It might also result from powerful interests influencing policies towards their own (economic) interests, overshadowing social or ecological aspects (Anguelovski and Martínez Alier, 2014; de Satgé and Watson 2018). Policymakers might also align more with global or national agendas, deviating from local preferences in the context of multilevel policy-formulation (Pierre and Peters, 2005; Kaufmann and Sidney, 2020). Furthermore, policy adoption and implementation may not keep pace with residents' evolving priorities, creating time-lag discrepancies. Understanding this potential mismatch between resident preferences and USD policies offers valuable insights for enhancing public support for sustainability measures and fostering democratic urban policy-making.

Based on the discussed literature, our analysis is guided by two expectations. The first expectation is related to the influence of SD framing on residents USD policy issue preferences. Following on that, the second expectation is concerned with potential discrepancies between residents USD

policy issue preferences and policy issues priorities in actual existing USD plans. First, different SD conceptualization can be important because they form the foundation for determining the priorities, scope, and limits of SD. We will present both the triangle and the nested SD concepts as randomized frames before the survey experiment. Given the distinct prioritization of environmental USD policy issues in the nested SD concept and the absence of such hierarchical distinctions in the triangle SD conceptualization, *we expect that residents that are presented with the nested SD concept are more likely to give preference to environmental USD policy issues compared to residents that are presented with the triangle SD concept.* Second, given the different rationalities of policy-makers and resident (Watson 2003), *we expect differences with regard to USD policy issue preferences between everyday preferences of residents and more long-term priorities in actual existing USD plans.* We will examine this second expectation by juxtaposing residential USD preferences from experimental survey data with a thematic analysis of policy issues in USD policy plans.

Cases, data and methods

Our research aims to dissect the complex interplay between resident preferences and actual urban sustainable development (USD) policies in different European cities. This requires a multi-faceted and multi-method approach. In order to achieve this, we collected comprehensive data from eight systematically selected European cities. We designed an original survey data about the preferences of residents towards different facets of USD and coupled this with a collection and analysis of all publicly available USD policy plans for each city. The robustness of our methods is strengthened by the conjoint experimental design of the survey, ensuring that the derived results hold under various framing conditions, thus reducing the impact of potential bias.

Throughout the following sections, we elaborate on our case study selection, data collection process, survey design and analysis, and finally the coding of USD policy plans. Our methodological rigor is designed to ensure the robustness and generalizability of our findings, providing insights that extend beyond specific local contexts.

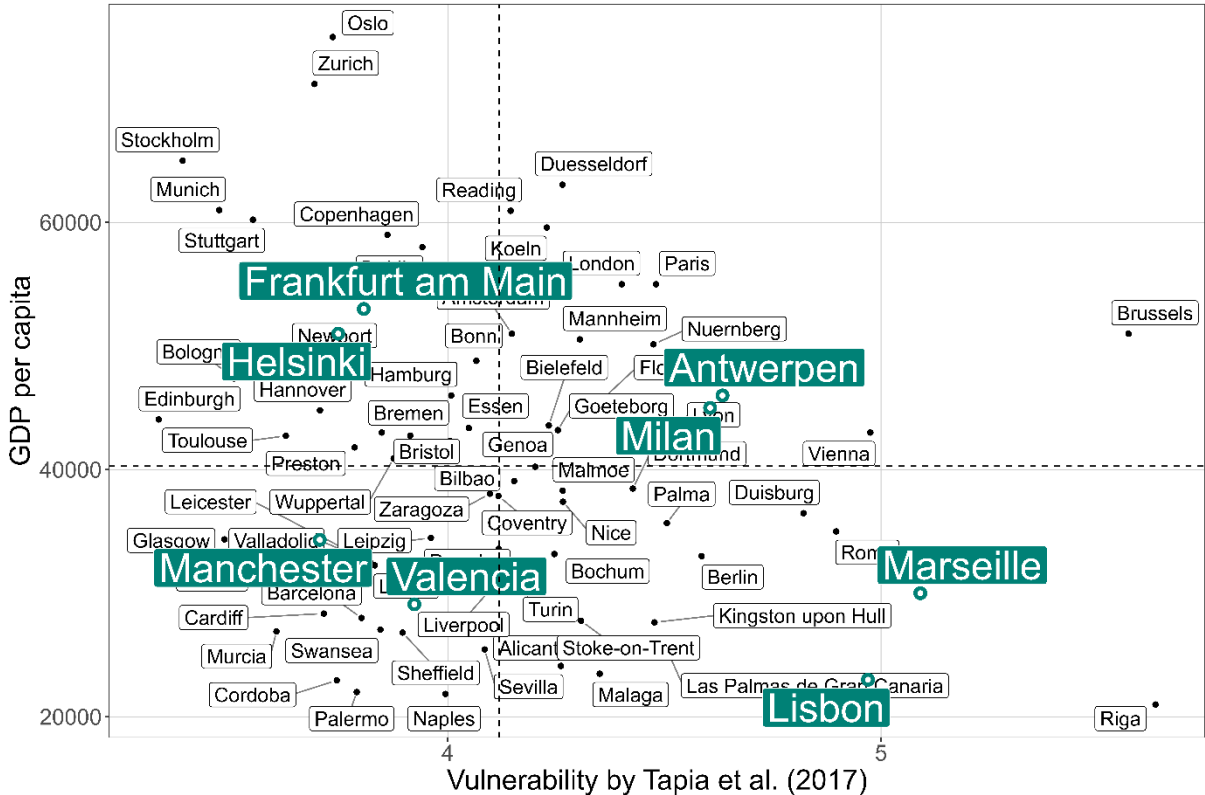
Case selection

We selected eight cities from our sample of all 86 European cities with more than 300'000 inhabitants. These cities were systematically selected based on the sample of all 86 European cities above 350'000 inhabitants. Given the limits but also importance of systematic case selection in comparative urban studies (e.g., Robinson 2022), we want to ensure that we select cities in diverse contexts. The case selection aimed to capture diverse urban contexts in terms of ecological vulnerability and financial capacity (see Figure 2). Ecological vulnerability in our study refers to the potential adverse impacts of climate change on cities, particularly concerning heatwaves, droughts, and flooding (Tapia et al. 2017). Financial capacity, on the other hand, refers to the city's ability to finance and implement USD policies (Saha and Paterson, 2008; Lubell et al., 2009). We also ensured to not select cities from the same country because of the importance of national SD policy agendas, local autonomy, and national intergovernmental frameworks. We also did not select the biggest European cities above 2 million inhabitants, namely Berlin, Madrid, London, Paris, and Rome. Thus, the selection criteria was to compare similar European cities (with regard to population size), while ensuring variance of the urban contexts. We aimed for this systematic case selection because it increases the generalizability of our findings and it allow us to produce insights from diverse European cities beyond only so-called global cities, C40 cities, or European sustainable development champions like Amsterdam, Barcelona, Paris or Stockholm.

Given this case selection strategy, we selected Frankfurt am Main and Helsinki, representing contexts with high financial capacity but relatively low ecological vulnerability, Milan and Antwerp with high financial capacity yet high ecological vulnerability, Manchester and Valencia with low

financial capacity and low ecological vulnerability, and finally, Marseille and Lisbon that represent cities with low financial capacity and high ecological vulnerability.

Figure 2: Systematic case selection



Data collection and survey design and analysis

The study relies on a sample among the 18+ years old population of eight systematically selected cities (Frankfurt, Helsinki, Antwerp, Milan, Manchester, Valencia, Marseille, Lisbon). The sample of respondents is proportional to the population of the eight cities in terms of age and gender, and we implemented a soft quota on income deciles. The study sample consists of 5’800 participants (900 in Manchester, 700 in the other seven cities). Participants were invited through online panels coordinated by IPSOS.

Survey participants were asked to complete the online survey, with a median response time of 19.9 minutes. The questionnaire included questions on participant’s socio-demographics, general political attitudes, and some socio-psychological items. In a second part, a combination of several framing and conjoint experiments was conducted. Participants randomly received a different SD frame (see the two different conceptualizations of SD in Figure 1), putting a bracket around the following conjoint experiment. This resembles a randomized control trial.

Survey participants then first had to rank all the 17 USD policy issues that we found in the literature. After the ranking, the participants entered the conjoint experiment (Hainmueller et al. 2014) in which they had to assess two urban sustainable development policy agendas that were randomly consisting of six out of 17 USD policy issues. Respondents had to do 6 iterations of comparisons. This results in a total sample 69'600 observations (6*5'800). All the USD policy issues have been described before the experiment in two to three sentences and we created an info button so that the survey participants could recall the meaning of the USD policy issue. The survey questionnaire is attached in the appendix.

Before fielding the survey, we conducted several pretest interviews with students, during which they went through the survey while we noted down any questions or parts they found confusing. Following this, we conducted further quantitative pretests with 42 students and researchers in our institution, before we conducted a soft launch of the survey with 200 residents in Manchester. This comprehensive pretesting process ensured the clarity and effectiveness of our survey.

Figure 3: The conjoint experiment implemented in the online survey

In the following, we will now present different proposals for Urban Sustainable Development Agendas. Please consider the following two proposals of six policy issues each that your city will focus on in the future.

Proposal 1	Proposal 2
Education ⓘ	Public Health ⓘ
Unemployment ⓘ	Green Energy ⓘ
Poverty ⓘ	Urban Green Spaces ⓘ
Water and Air Quality ⓘ	Education ⓘ
Wealth and income inequality ⓘ	Biodiversity ⓘ
Climate Change Mitigation: ⓘ	Democratic Participation ⓘ

Please consider the following two proposals.
Which of the two proposals would you prefer as a policy agenda of your city?

- Proposal 1
- Proposal 2

Would you accept Proposal 1 as a city strategy?

- Yes
- No

Would you accept Proposal 2 as a city strategy?

- Yes
- No

Can you elaborate on your choice between the two proposals?

In our analysis of the conjoint survey experiment data, we estimated both Average Marginal Component Effects and Marginal Means, given that all attribute characteristics are randomly assigned (Hainmueller et al. 2014, Leeper et al. 2020). The calculation of Average Marginal Component Effects allowed us to discern which USD policy issues are of greater importance to residents. Concurrently, we employed Marginal Means, defined as a quantity measuring favorability toward a given feature, to study the average effect of each level of every attribute, assuming a balanced distribution across all other attributes (Leeper et al. 2020). In line with Leeper and colleagues, we utilized Marginal Means specifically to analyze subgroup effects, such as the potential impact of SD frames and to investigate whether the framing experiment influenced the residents' rating of USD policy issues.

Thematic coding of USD policy plans

We qualitatively coded 167 USD policy plans in the eight cities: Antwerp, Frankfurt, Marseille, Lisbon, Valencia, Manchester, Helsinki, and Milan (see Table S2 in the supplementary information). We have initially collected 219 plans that we reviewed. After reviewing all the plans, we included and coded 167 USD policy plans. We excluded plans without explicit reference to USD, SD or sustainability, plans not authored by the city government (for example by regional or metropolitan authorities) or reports that were rather evaluative or diagnostic. The goal of the analysis was finding out how cities are prioritizing different USD policy issues by detecting how many times an USD policy issues is mentioned in the plans (i.e., frequencies of USD policy issues).

We searched the eight city and departmental websites along with basic text searches on google. We searched in both English and the official language of the cities. We were not limited to the main city strategy (i.e., the one that the city put forward as their main USD plan) and searched for any strategy that involved any of the 17 issues under study. While cities would not always identify a strategy as its core plan, it was made clear by reading it, its location on the website, and how the city presented it. If the plan was available in both English and the official language of the city, we would use the English strategy to aid the coding process. This was only the case in the city of Helsinki.

We thematically coded the 167 USD policy plans (Boyatzis, 1998; Jabareen, 2006) in order to identify USD policy issues in the USD policy plans. We developed a baseline dictionary of words associated with each USD policy issue (see Table 1). We developed this dictionary for each city due to translation and an iterative coding approach. We translated each term to the official language of the city to develop a dictionary that capture the issue in each language. We searched for every USD policy issue in English along with the local language because some plans were provided in English

besides the local language. We iteratively developed the dictionary for each city by reading the core USD document and developing a corpus that suited each city's unique approach to planning. For example, Lisbon used the term citizen councils when talking about democratic participation while Marseille used the term citizen assemblies.

We utilized MAXQDA to conduct the thematic coding and we measured absolute and relative frequency of USD policy issues in the USD plans. We uploaded all the USD policy plans in MAXQDA and used the "text search & autocode function" provided by. Upon searching, we would read every instance of the found USD policy issue and its surrounding context to ensure that it was actually speaking to the issue. If it was not, it was not coded as an instance of the USD policy issue in the plan. We generated absolute and relative frequencies of USD policy issues. The relative frequencies are relative to the total page count for each city.

Table 1: Baseline dictionary of terms for each USD policy issues, in English

USD Policy Issues	Search Terms
Biodiversity	biodiversity
Climate Change Mitigation	climate change mitigation; mitigate climate change; carbon neutral, carbon neutrality, carbon free, mitigation of climate change
Climate Change Adaptation	adapt to climate change, climate change adaptation
Green Energy	green energy, wind energy, solar energy, geothermal energy, renewable energy, and clean energy, renewables
Water and Air Quality	water quality, air quality
Discrimination	discrimination, inequality, racism, discriminatory
Unemployment	unemployment, unemployed, joblessness
Education	education, further education, adult education, child education
Wealth and Income Inequality	wealth inequality, income inequality
Poverty	poverty
Integration of Minorities	integration of minorities, minority integration, ethnic integration, integration of migrants, migrant integration, integrating migrants/immigrants
Public Health	public health, mental health, physical health
Cost of Living	cost of living, living costs, food costs, and housing costs
Public Transportation	public transportation, public transport
Urban Green and Public Spaces	urban spaces, green spaces, public spaces
Circular Economy	circular economy
Democratic Participation	democratic participation, participative democracy

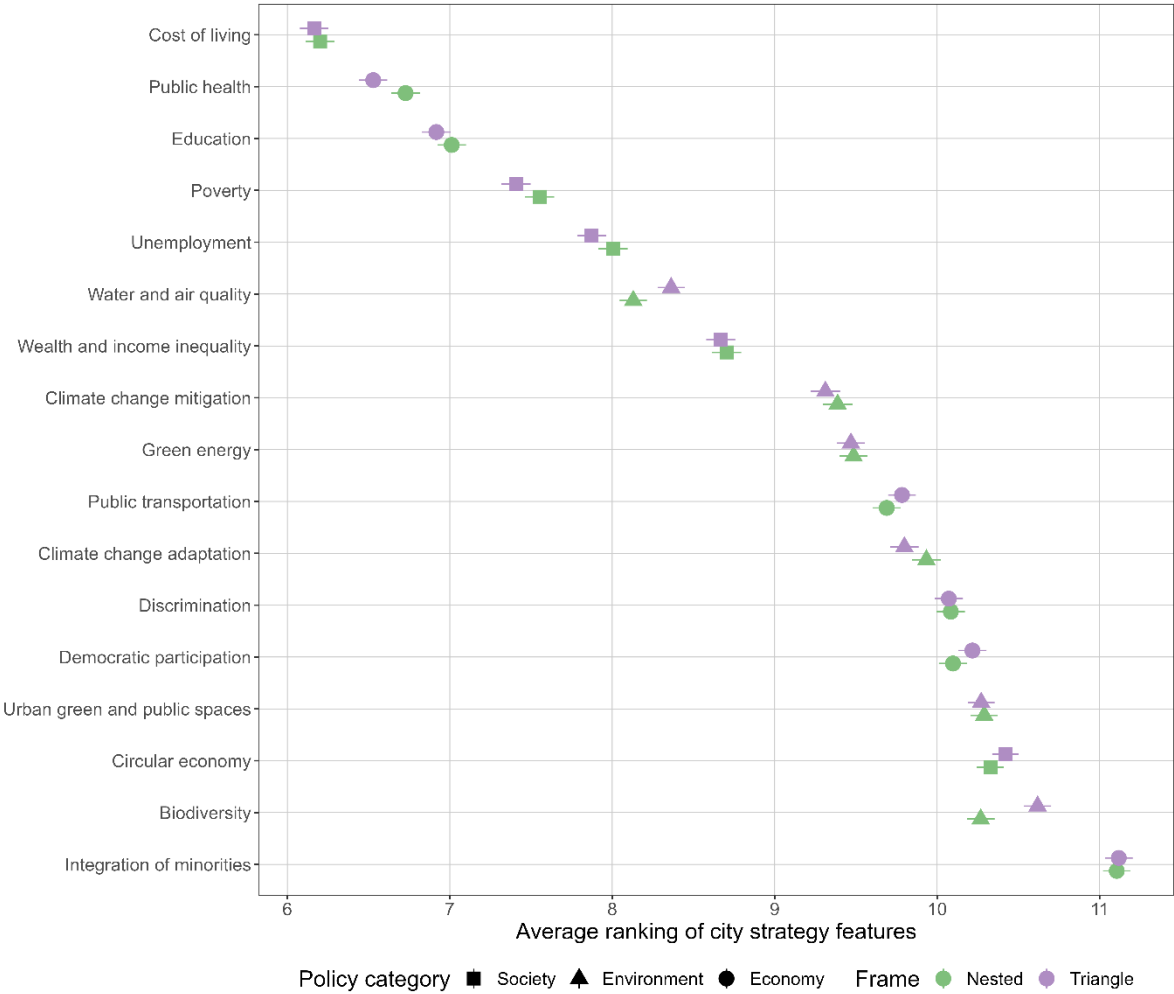
Results

We first going to present the results of the ranking exercise and then of the conjoint survey experiment. We also going to examine the effects of the two conceptual SD frames on residents USD policy preferences and we will examine whether the results are stable across the eight cities. In a next step, we will then present the results of the analysis of 167 actual existing USD plans in the eight cities and we compare them with the findings of the survey.

Ranking exercise

We asked survey participants to rank the 17 USD policies in terms of their importance to them, ranking the most important issue on top and the least important on the bottom. The results show that USD policy issues that can be categorized as aiming to secure basic human needs matter the most: the highest ranked USD policy issues are (1) cost of living, (2) public health, (3) education, (4) poverty, (5) unemployment, (6) water and air quality, and (7) wealth and income equality (see Figure 4). These top seven USD policy issues show a more a less steady interval, while we can observe a bit of a gap between issue ranked seventh (wealth and income equality) and the USD issue ranked eight (climate change mitigation). The SD conceptual framing seems to not matter much, with an exception of the two USD policy issues biodiversity and water & air quality in which we can observe the expected effect.

Figure 4: Ranking results

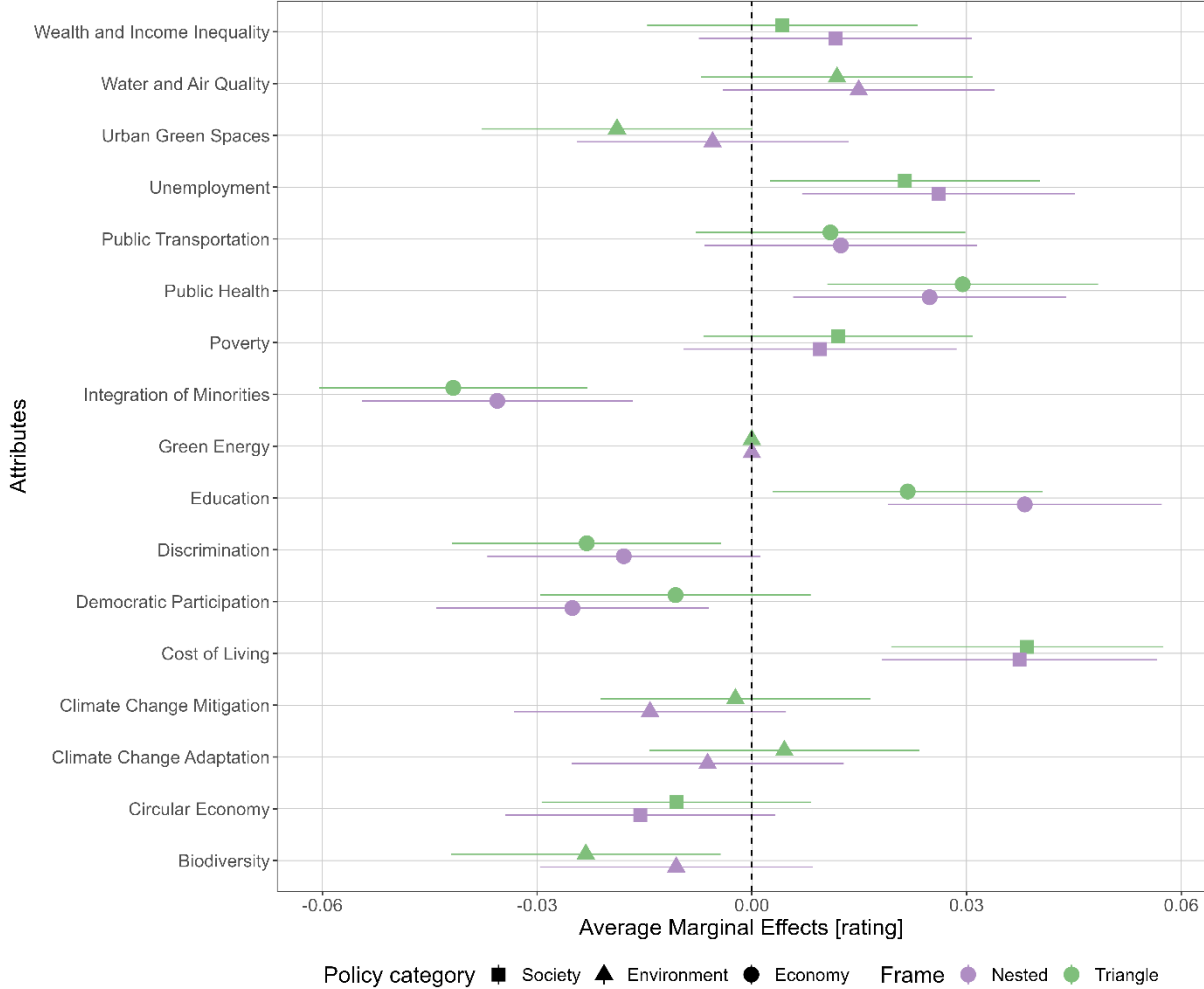


Conjoint experiment results

We found similar results in the conjoint experiment as in the ranking exercise. When the conjoint experiment included USD policy issues such as the cost of living, education, and public health, in that order, they consistently received higher acceptance levels (see Figure 5). Conversely, USD policy issues such as biodiversity, circular economy, and certain socio-political issues (e.g., integration of minorities, discrimination, and democratic participation) tend to decrease the likelihood of residents accepting the randomized USD policy plans. What's striking is that these patterns of preference remained stable, irrespective of the conceptual SD framing. In other words, residents' USD preferences seemed robust, even when the presentation of SD was modified or reframed. These patterns remain consistent in the results for the conjoint experiment with forced choice (see Figure S1 in the supplementary information). This stability of USD policy issue preferences across different framings and across different methods (ranking and conjoint experiment with and without forced choice) contributes significantly to our understanding of public perspectives on USD, underscoring the presence of USD policy preferences in urban

populations. However, the limited and inconsistent impact of SD framing on conjoint results also suggests that framing strategies may not be as effective in shifting public opinion on USD policies as previously thought.

Figure 5: Conjoint results



City differences

The results show that the average acceptance of USD policy agendas is with 72.61% rather high. Comparing the results across the respondents in the eight cities revealed interesting differences although not in the pattern that we would have expected. The two cities with the significantly highest acceptance levels of USD are Lisbon and Valencia (see Figure 6). Both cities are display comparably low GDP. Lisbon is ecological vulnerable according to Tapia et al. 2017, while Valencia is not. The comparably rich cities and ecological vulnerable cities, Milan and Antwerp, do show average USD acceptance levels. These city patterns are also supported by the experimental conjoint preferences results of the 17 USD policy issues (see Figure 7).With regard to the SD framing, the triangle SD framing seems to get higher acceptance rates than the nested SD framing, but in general the conceptual SD framing does not matter much with regard to public acceptance.

Figure 6: Acceptance of USD policy agendas in eight cities

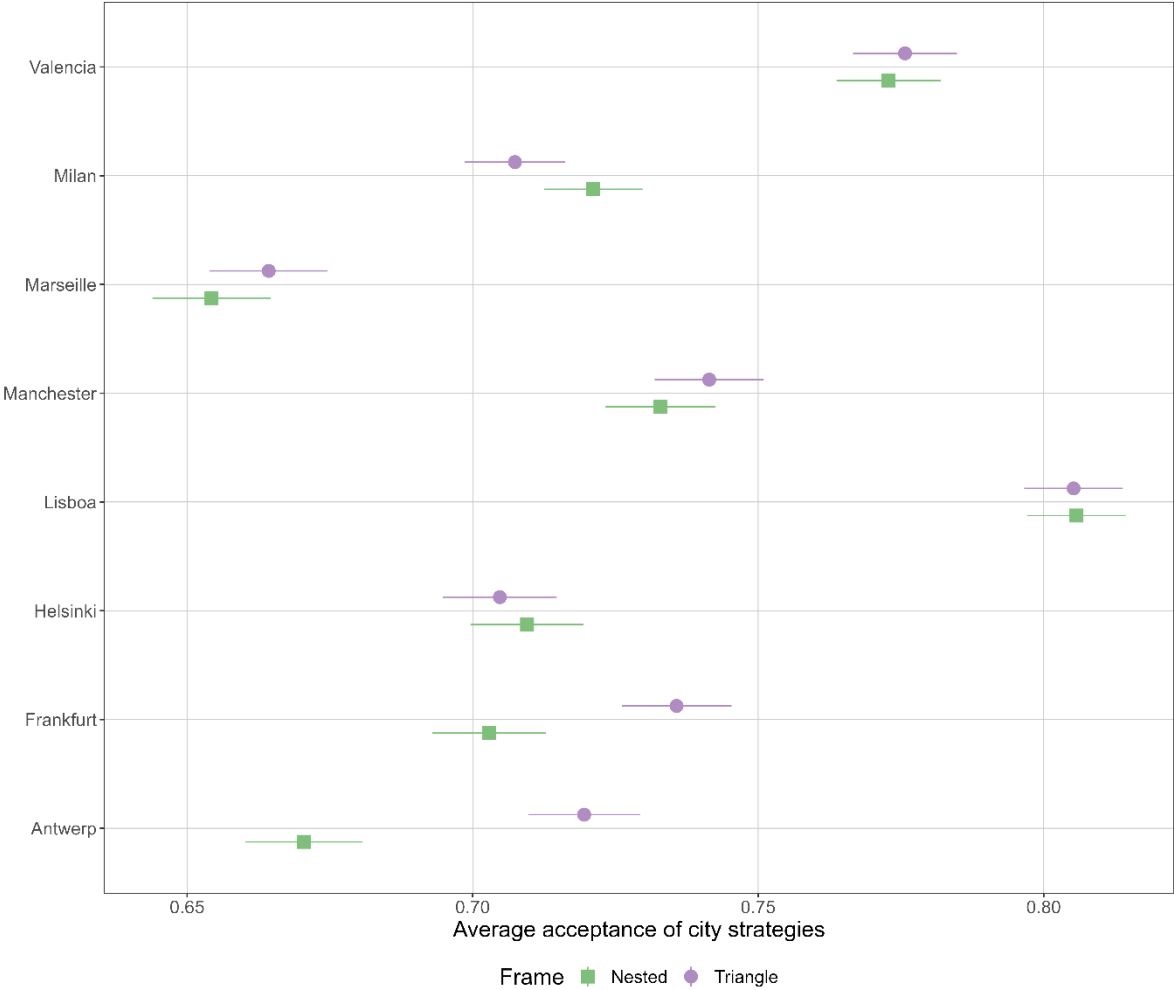
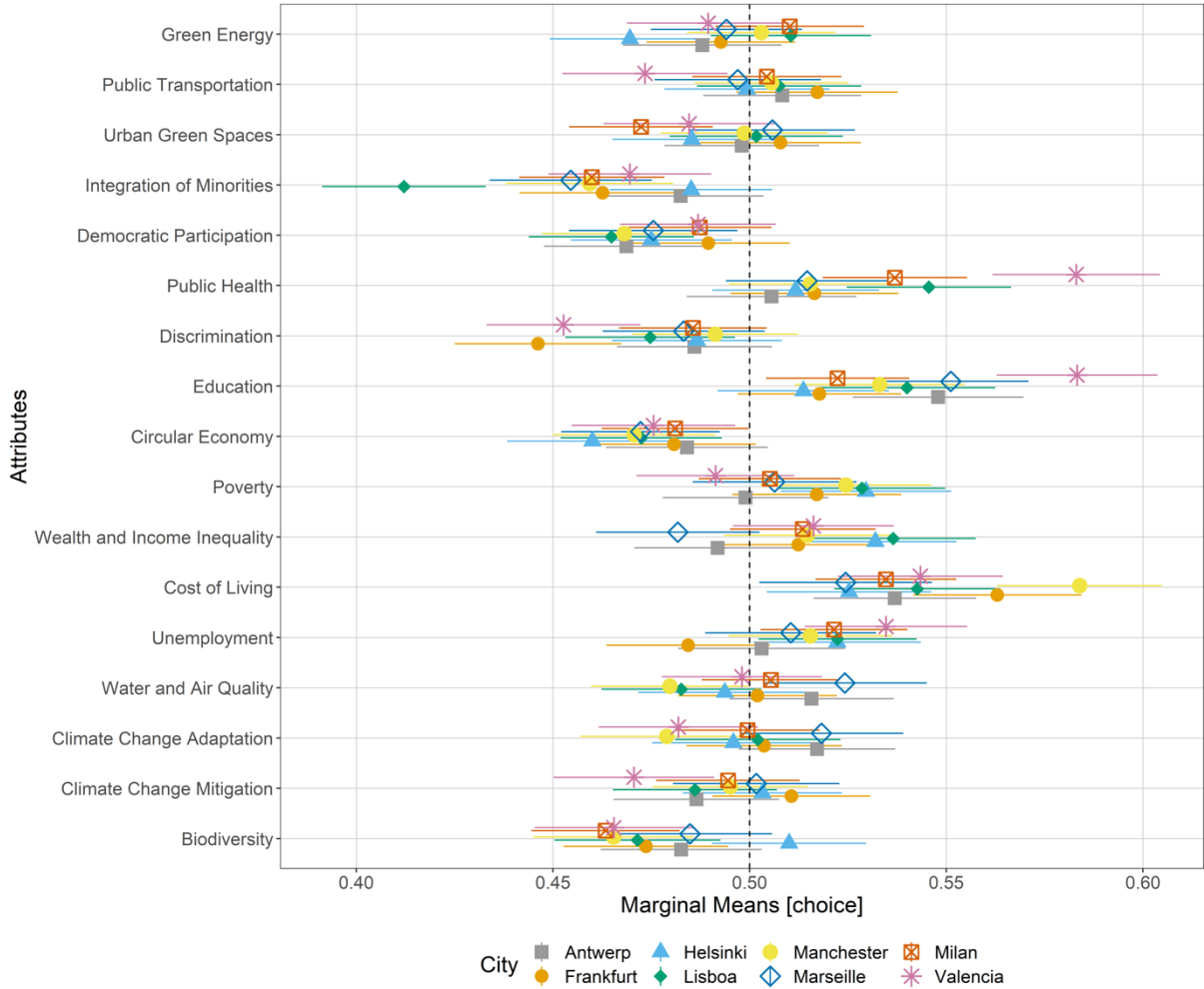


Figure 7: Conjoint results USD policy issues in eight cities



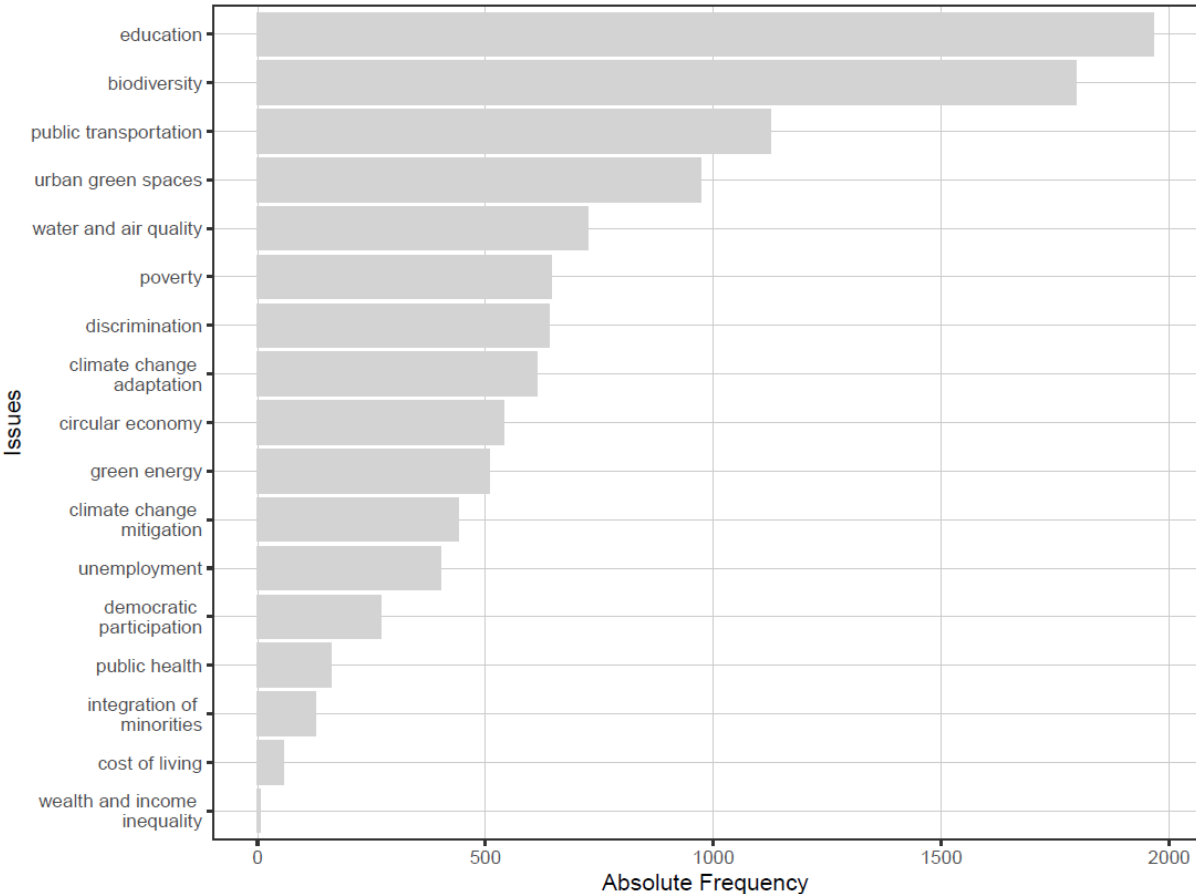
Overall, when looking at the results of the survey analysis we can see that residents prefer USD policy issues that can be described as aiming to secure basic human needs. Environmental USD policy issues that are in the sustainability literature more discussed as SD policy issues show comparably lower preference ratings. Hence, one main take-away is that basic human needs need to be secured in order to enable to conduct more substantial and environmental-oriented USD agenda. We are now comparing these residents' USD preferences with the analysis of actual existing USD policy plans to see if residents' preferences align to USD policy plans.

Analysis of actual existing USD policy plans

In the analysis of 167 USD policy plans, we find that the most important addressed USD policy issues were (1) education, and (2) biodiversity. With a considerable gap follows (3) public transportation, and (4) urban green spaces, and, with another considerable gap, follows (5) poverty and (6) water and air quality (see Figure 8). Education and Biodiversity were among the highest mentioned USD policy issues in every single city (see Figure 9). In several cities, wealth and income

inequality, cost of living, and integration of minorities had a frequency count of zero (see Figure 9), meaning that these policy issues were not included in the USD policy plans that we collected in the eight cities. A democratic discrepancy emerges with regard to residents' USD preferences, especially with a considerable overconsideration of biodiversity, public transport, and urban green spaces, and a remarkable underconsideration of the USD policy issues cost of living, wealth and income equality, unemployment, and public health. Residents USD preferences and actual existing USD policy plans, however, match exceptionally well with regard to education and also with regard to poverty and water and air quality.

Figure 8: Frequency of mentioned USD policy issues in USD policy plans



City differences in actual existing USD policy plans

If we compare the different USD plans across the eight cities, we can see that the USD plans for Lisbon by far mention the most USD policy issues in absolute numbers, ahead of Valencia in Helsinki. If we, however, control for the number of pages of USD plans, Helsinki appears to mention the most USD policy issues relatively, while there is no significant difference anymore between Lisbon and Valencia and the other cities (see Figure 9). We can also observe that Lisbon,

Valencia and Helsinki mention more diverse USD policies than the other cities. Manchester, Marseille, Frankfurt, and Antwerp seem to not address USD holistically and rather fall into thematic silos (see Figure 10).

We can not observe a pattern between the cities: Helsinki has a comparably high GDP and low ecological vulnerability, Lisbon has a comparably low GDP and high ecological vulnerability, and Valencia has a comparably low GDP and low ecological vulnerability. The comparably rich cities and ecological vulnerable cities, Milan and Antwerp, do not show comparably high USD policy activities on paper. This finding suggests that economic prosperity does not necessarily equate to proactive USD policy-making, pointing towards an obligation for wealthier European cities to be more responsive to sustainable development imperatives.

Figure 9: Frequencies of total mentioned USD policy issues in the eight cities

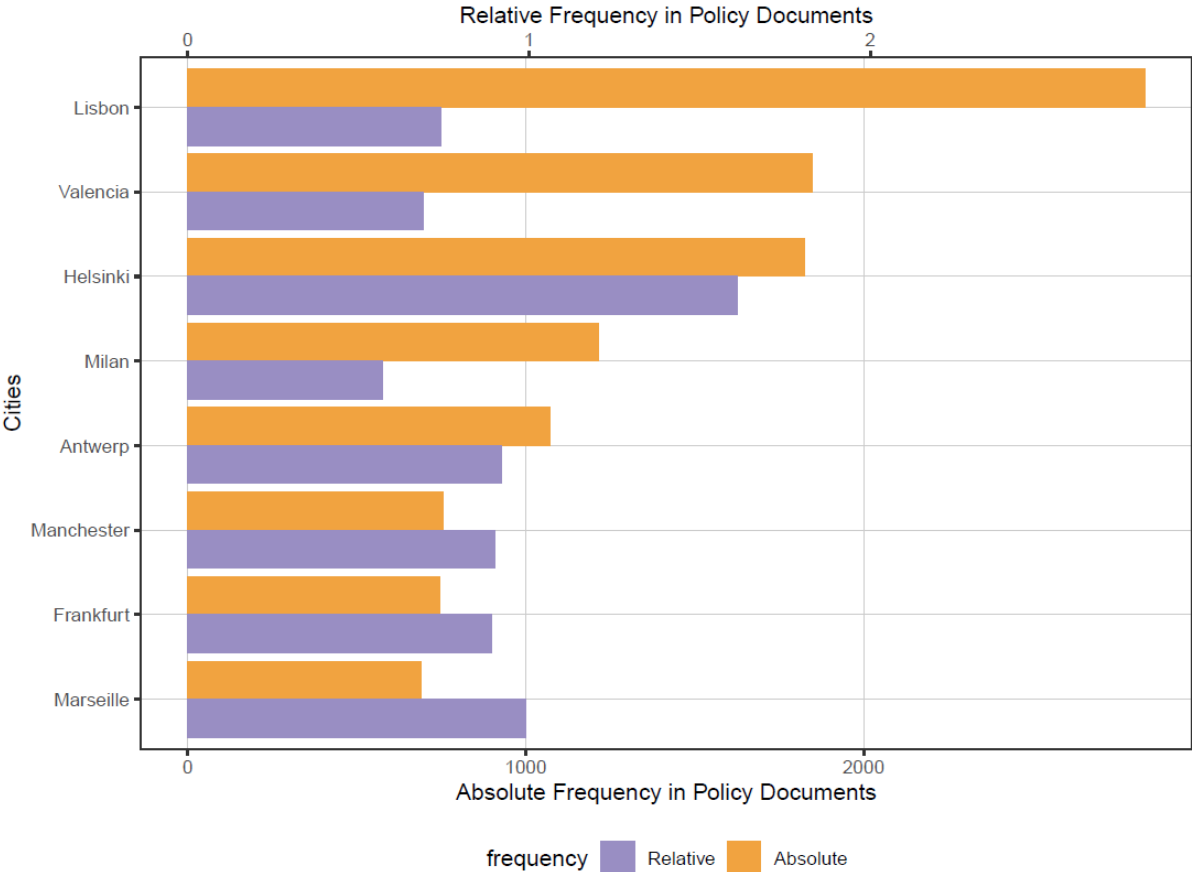
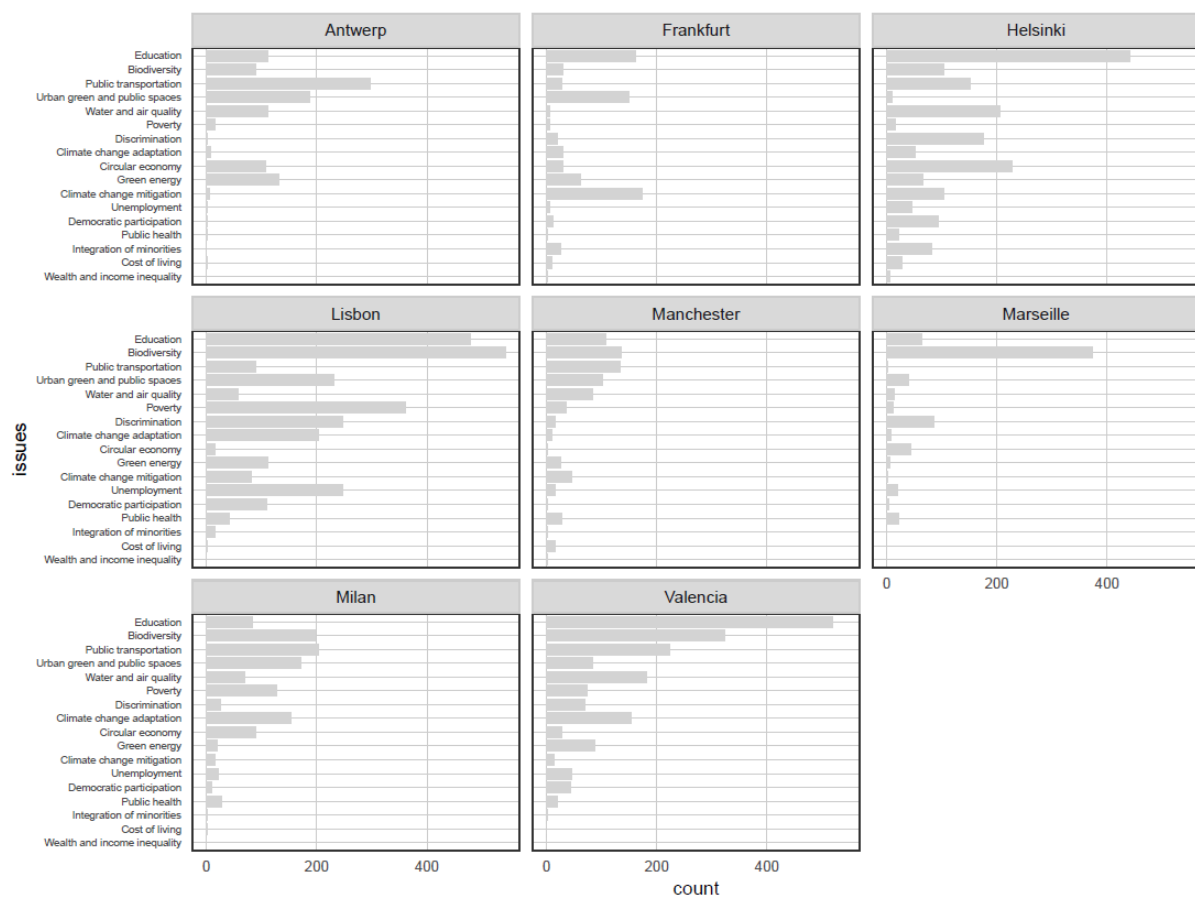


Figure 10: Frequencies of different USD policy issues in the eight cities



Synthesis and Conclusion

We analyzed residents' USD policy preferences and compared them with actual existing USD policy plans in eight systematically selected European cities, namely Antwerp, Frankfurt, Helsinki, Lisbon, Manchester, Marseille, Milan, and Valencia. We found an on average rather high acceptance rate of randomized USD policy plans (72.61%). Thus, residents seem to back up urban endeavors to pursue USD policy-making and they generally support diverse USD policy issues. Yet, there are more sobering results with regard to the preferred content of USD policy plans. The two environmental USD policy issues biodiversity and circular economy and the three more socio-political USD issues integration of minorities, discrimination, and democratic participation, gained comparably low acceptance levels. Furthermore, we could not find evidence that different conceptual USD framings matter for residents' preferences formations. Yet, we as policy and planning scholars want to emphasize that different conceptualizations are nevertheless important for policy agenda-setting as they help initiate different problem conceptualizations of USD in the policy-making process, although they seem to be not very important for shaping residents' preferences in the short-term.

The key motivation of our research was to examine potential discrepancies between residents' preferences for USD policy issues and the representation of these policy issues in USD policy plans, a measure of democratic legitimacy in the realm of USD policy-making. Our analysis revealed a match between residents' preferences for education and the high frequency of this USD policy issue in existing plans. This is consistent throughout the eight cities. So it seems that education is both preferred and actually prioritized in USD plans, which is a notable finding since education is seen as essential as an own SDG but also as a facilitator for the SDGs in general (in the sense of education for sustainable development, e.g., O'Flaherty & Liddy, 2018). And we found, to a bit lesser degree, a match in the USD policy issues poverty as well as air and water quality.

Yet, our analysis points to general democratic discrepancies between residents' USD preferences and mentioned USD policy issues for a specific type of USD policy issues, mainly for those that aim to secure basic human needs. We can find a remarkable relative underconsideration of cost of living, wealth and income equality, unemployment, and public health in the existing USD plans compared to residents' USD policy preferences. In contrary, there is a relative overconsideration of biodiversity, public transport, and urban green spaces in the actual existing USD plans. While cities pursue strategies mostly related to more long-term environmental and decarbonization USD policy (such as education, biodiversity, public transport, and urban green spaces), residents prefer USD policy issues that secure their everyday needs such as cost of living, public health, poverty, and unemployment. This points to a discrepancy between more everyday concerns and preferences

of residents and more technocratic USD policy plans. This discrepancy may be explained by the competing rationalities of a techno-managerial and market-oriented system of planning, often in alliance with other powerful actors such as profit-driven land developers, versus the rationalities of coping with everyday life by residents (Watson, 2003; De Satgé and Watson, 2018). An even more important insights of this this study seems to be the importance of securing basic human needs when cities want to pursue profound USD policy plans with a focus on important long-term environmental SD policy issues such as climate change, biodiversity, or renewable energy.

Despite these highly relevant insights for the future of USD, our study has several limitations that need to be acknowledged. Firstly, our analysis of actual existing USD plans is based on publicly available plans. This does not comprehensively reflect all ongoing sustainability initiatives in the cities, particularly those not documented in the plans or those emerging from grassroots movements and community-led projects. Furthermore, differences in data availability and transparency across the eight cities might have influenced our ability to capture the full scope of their respective USD policy plans. Secondly, our study is based on USD policy plans and not policy implementation. There might be a significant gap between what is intended in the plans and what is actually executed on the ground. Thus, we do not equate the presence of an USD policy issue in a plan with action taken on that issue. Thirdly, our study relies on survey data to infer residents' preferences. While this method has its strengths, it comes with potential biases. For instance, respondents might interpret questions in different ways. Additionally, the respondents of our survey might not fully represent the population of each city due to sampling limitations. To partially account for this issue, we ensured that the sample of respondents is proportional to the population of the eight cities in terms of age and gender, and we implemented a soft quota on income deciles. Finally, the framing experiment could be influenced by the current events or media coverage at the time of the survey, which might temporarily heighten the salience of certain issues. It is worth noting that these limitations provide opportunities for future research to deepen the understanding of the dynamic between residents' preferences and USD policy-making.

Based on these analyses, we suggest that urban policy-makers and planners need to take the preferences of residents seriously and incorporate everyday human needs as a central aspect of USD policy-making, especially if they want to pursue a profound and more long-term-oriented USD policy agenda. In order to increase the legitimacy of USD policy-making everyday realities of residents and everyday conceptualizations of USD have to be studied and addressed, particularly those related to economic security of people as they tend to fall short in existing USD plans (e.g., cost of living, unemployment, public health). Vanessa Watson (2003), in this regard, suggest more

direct encounters of planners and policy-makers with diverse residents and diverse everyday realities which should result in more sincere participation and collaborative urban planning.

Our findings suggest that it would be good for urban planners and urban policy-makers to priorities social issues alongside environmental issues in USD policy-making. While we found limited influence of SD concepts on residential preferences, it might be beneficial for urban planners and policy-makers to work with newer SD concepts that bridge socio-environmental considerations, that stress the need for securing basic human needs and that not marginalize local equity concerns by mainly focusing on ecological sustainability. This has prominently being done in the doughnut model (Raworth 2012, Dearing et al. 2014), in the new framing of the SDGs as sustainability in the Anthropocene (Griggs et al. 2013), or in a new research papers about Rockström and colleagues (2023) that speaks about *Safe and Just* earth system boundaries. In general, SD policy-making has to be democratic and without amplifying socio-economic inequalities (see also Wachsmuth et al. 2016; Wicki et al. 2022a). This means that securing basic human needs is not just of second priority or morally desirable, but it is democratically demanded and it seems to be the basis for pursuing more profound USD policy-making.

Supplementary information

In this supplementary information document, we first present the list of 17 USD policy issues that we derived from the literature (see Table S1) before we list all the included 167 USD policy plans in our thematic coding analysis from the eight cities (see Table S2).

Framework of USD policy issues

Given the broad range of policy issues that potential fall within the scope of USD, we aimed to identify a comprehensive but manageable list of specific USD issues. To do this, we combined a review of academic literature on urban sustainability with an analysis of three recognized USD indicators (the SDG 11 indicators, the Amsterdam City Doughnut Indicators, and Cercle Indicateurs). For each SDG a set of indicators has been developed, including a list of 231 unique indicators. The SDG indicator framework was developed by the Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs) and agreed upon at the 48th session of the United Nations Statistical Commission held in March 2017 and later adopted by the General Assembly on 6 July 2017 (United Nations Statistics Division 2023). The city of Amsterdam developed a new USD policy plans by adopting the doughnut SD concept and formulated 20 city targets that are based on three questions (City of Amsterdam, 2020). Based on the question what it would mean for the residents of Amsterdam to thrive, they developed twelve types of city targets that are accompanied with an illustrative statistic/indicator. Based on the questions what it would mean for Amsterdam to thrive within its natural habitat, they added seven city targets with an illustrative statistic/indicator. Based on the questions what it would mean for Amsterdam to respect the well-being of people worldwide, they formulated eight city targets with a global outlook that can be linked to the SDGs and that overlap with the first set of city targets. The Cercle Indicateurs system of indicators is designed by the Swiss government to measure and monitor sustainable development at subnational level (cantons/state and the level of cities) over time and for comparisons between territorial units (benchmarking). The Cercle Indicateurs framework builds on the classical pillars of sustainable development (environment, economy, and society) as the main dimensions to be measured (Boesch and Montmollin 2020).

The results of this combined review of literature and USD indicators is a list of 17 distinct USD policy issues, which we categorize into three broad SD domains: Environment, Society, and Economy (see Table S1). The Environment domain includes issues such as biodiversity, green energy, climate change mitigation and adaptation, water and air quality, and urban green spaces. The Society domain comprises issues related to education, discrimination, public health, democratic participation, integration of minorities, and public spaces. Finally, the Economy domain includes unemployment, cost of living, wealth and income inequality, poverty, and the circular economy.

Table S1: Summary of literature for USD policy issues

Domain	USD policy issue	SDG 11 Indicators	Amsterdam City Doughnut	Cercle Indicators	Relevant Papers	
Environment	Biodiversity	No	Yes	Yes	De la Sota, et al. (2019); Saebom, Stokes, & Hamilton (2023)	
	Green Energy	No	Yes (Energy, Energy harvesting)	Yes (Energy consumption, energy quality)	Flynn, et al. (2016); Saebom, Stokes, & Hamilton (2023)	
	Climate Change Mitigation	Partly (Environmental impact)	Yes (Climate change, Carbon sequestration)	Yes	Wang & Foley (2021); De la Sota, et al. (2019); Wittwer et al. (2023)	
	Climate Change Adaptation	Partly (Disaster)	Yes (Climate change, Temperature regulation)	No	Fiack., et al. (2021); Brandtner and Suárez (2020)	
	Water and Air Quality	No	Yes (Water, Water provisioning, Air quality regulation)	Yes (Water quality, Air quality)	Saebom, Stokes, & Hamilton (2023)	
Society	Urban green and public spaces	Yes (Green and public spaces)	No	Yes (Public spaces, Nature and landscape)	Culwick & Patel (2020); De la Sota, et al. (2019); Wittwer et al. (2023)	
	Education	No	Yes	Yes	Valencia, et al. (2019)	
	Discrimination	No	Yes (Equality in diversity, community)	Partly (Equal opportunity)	Anguelovski, et al. (2019); Campbell (1996)	
	Public Health	No	Yes	Yes (Health)	Denis, et al. (2021); Anguelovski, et al. (2019)	
	Democratic Participation	Yes (Participation)	Yes (Political voice, connectivity)	Yes (Participation)	Campbell (1996); Portney & Berry (2010)	
	Integration of Minorities	No	Yes (Equality in diversity)	Yes (Integration)	Hughes (2020); Wittwer et al. (2023)	
	Public transportation	Yes	Yes (Mobility)	Yes (Mobility)	Kenworthy (2016); Denis et al. (2021)	
	Economy	Unemployment	No	Yes (Jobs)	Yes (Labour market)	Saha (2009); Campbell, (1996)
		Cost of Living	Partly (Housing affordability)	Partly (Social equity, Housing)	Yes	Culwick & Patel (2020); Saebom, Stokes, & Hamilton (2023)
		Wealth and Income Inequality	No	Partly (Social equity, Income)	Yes (Income and wealth distribution)	Culwick & Patel, (2020); Saebom, Stokes, & Hamilton (2023)
Poverty		No	Partly (Income)	Partly (Social assistance)	Culwick & Patel (2020); Saebom, Stokes, & Hamilton (2023)	
Circular economy		Partly (Using local building materials)	No	Yes (Material consumption, Resource efficiency)	Baud, I., et al. (2001); Affolderbach & Schulz (2017); Wittwer et al. (2023)	

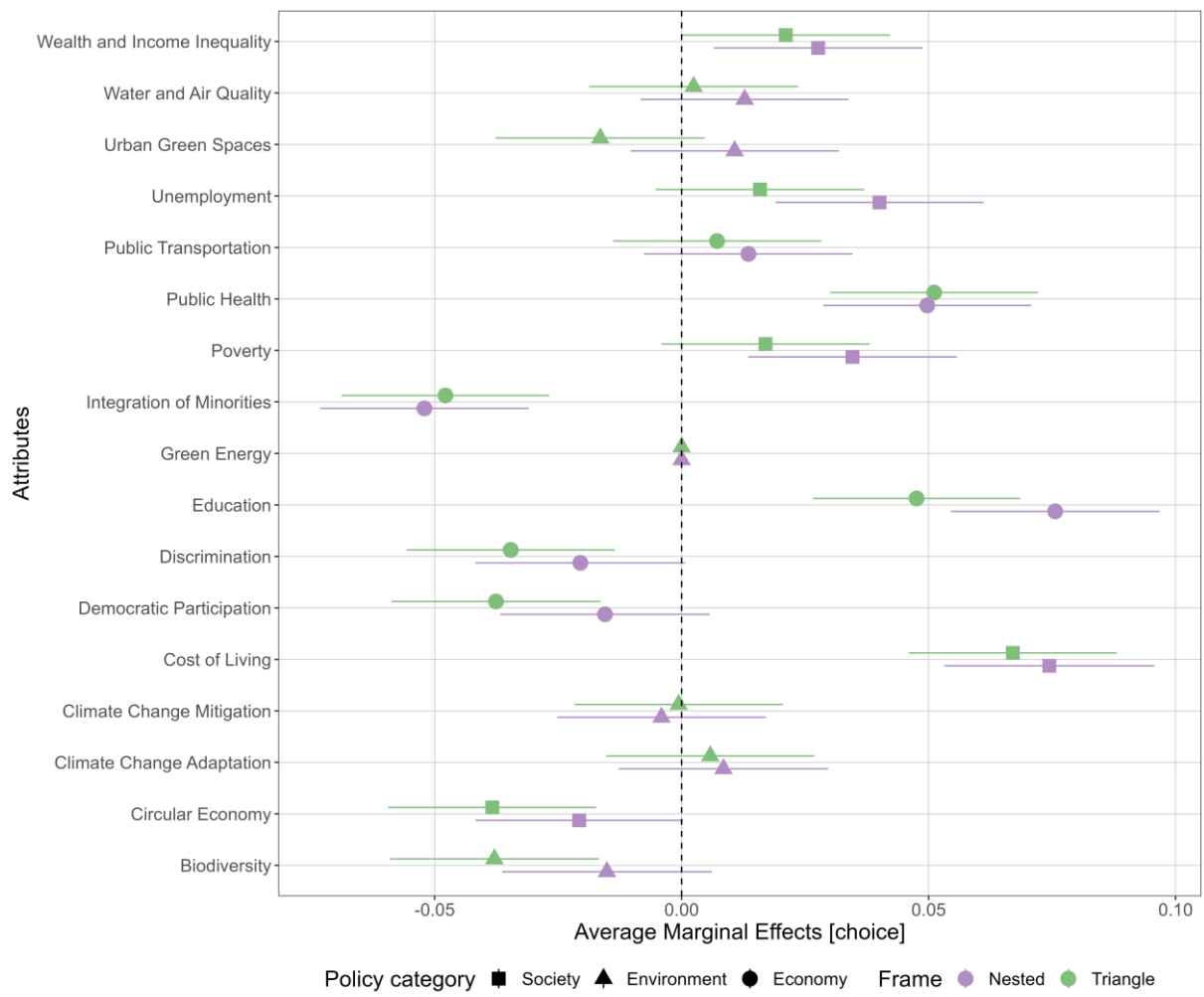
Table S2: Document list Per City

City	Comprehensive Plan	Sectoral Plan
Antwerp	<ol style="list-style-type: none"> 1. strategisch ruimteplan Antwerpen 2022: richtinggevend en bindend deel 2012 2. strategisch ruimteplan Antwerpen 2022: ruimte geven aan de stad van morgen 3. Antwerpen voor klimaat 2030 	<ol style="list-style-type: none"> 4. stadsontwikkeling in Antwerpen 2012 5. groenplan antwerpen 2013 6. vlaanderen circulair 2018 7. rup de lageweg 2020 8. ondernemingsplan 2021 9. antwerpen: routeplan 2030 10. klimaatplan 2030 bilage 1 11. klimaatplan 2030 bilage 2 12. klimaatplan 2030 bilage 3 13. Antwerpen actief & bereikbaar 2020 2025 2030 14. voorbereiding klimaatplan Antwerpen 2030
Frankfurt	<ol style="list-style-type: none"> 1. Frankfurt 2030+ 2. Frankfurt 2030+ anlage 1 3. Frankfurt 2030+ anlage 2 4. Frankfurter 2030+ statusbericht 5. Frankfurter 2030+ fachdialog 	<ol style="list-style-type: none"> 6. first gender equality action plan for Frankfurt 2012 7. „masterplan 100 % climate protection“ – Frankfurt am main 2013 8. entwicklung eines nachhaltigen gewerbegebietes in Frankfurt am main 2014 9. jungen menschen in ihrer vielfalt begegnen! 2014 10. masterplan industrie Frankfurt 2015 11. mobilitätsstrategie Frankfurt am main 2015 12. wohnbauland-entwicklungsprogramm 2015 13. master plan for 100% climate mitigation 2017 14. baulandbeschluss für die Frankfurter stadtentwicklung 2020 15. arten- und biotopschutzkonzept der stadt Frankfurt am main 2021 16. auf dem weg zur zero waste city 2021 17. leitlinien zum wirtschaftlichen bauen 2022 18. Frankfurter anpassungsstrategie an den klimawandel - 2.0 2022 19. grün und freiraum 2030+
Helsinki	<ol style="list-style-type: none"> 1. Helsingin kaupungin ilmansuojelu-suunnitelma 2017–2024 2. a place of growth: Helsinki city strategy 2021 – 2025 3. the most functional city in the world: Helsinki city strategy 2017–2021 	<ol style="list-style-type: none"> 4. Helsingin ilmastotiekartta 2015 5. clean air for Helsinki 2016 6. climate smart Helsinki 2017 7. Helsinki – a city for everyone 2017-2021 8. assessment of the city of Helsinki's participation work in the strategy period of 2017–2021 9. käytä liikkumavarasi! helsingin liikkumisohjelma 2018 10. development plan for immigrant education 2018–2021 11. Helsinki's climate change adaptation policies 2019–2025 12. health and well-being for everyone 2019-2021 13. Helsinki's present state and development 2019 14. stadin hyte-barometri 2019 15. nature-based solutions for stormwater management in the Helsinki metropolitan area, finland – prerequisites and good practices 2019 16. kiertotalouskaupunkia suunnittelemassa 2019 17. weather and climate change risks in helsinki 2019 18. analysis of future transport in the city of Helsinki 2020 19. Helsinki of human rights 2020-2021 20. the city of Helsinki's roadmap for circular and sharing economy 2020 21. rakentamisen ja rakennusten käytöstä aiheutu-vien päästöjen vähentäminen 2020 22. city of Helsinki biodiversity action plan 2021–2028 23. pääkaupunkiseudun ilmastostrategia 2030 24. hiilineutraali Helsinki 2035 25. the carbon-neutral Helsinki 2035 action plan 26. Helsingin kaupungin kotoutumisen edistämisen painopisteet vuosille 2022–2025
Lisbon	<ol style="list-style-type: none"> 1. estratégia de reabilitação para Lisboa 2011-2024 2. grandes opções do plano 2022 / 2026 da cidade de Lisboa 3. pac 2030 4. carta estratégica summário executive 2010-2024 	<ol style="list-style-type: none"> 5. estratégia energético-ambiental para Lisboa 2008 6. cultura em Lisboa 2009 - 2021 7. carta desportiva de Lisboa 2009 8. relatório da proposta de plano de ação para as energias sustentáveis e o clima 2012 9. plano de acessibilidade pedonal de Lisboa volume 1 2013 10. plano de acessibilidade pedonal de Lisboa volume 2 2013 11. plano de acessibilidade pedonal de Lisboa volume 3 2013 12. plano de acessibilidade pedonal de Lisboa volume 4 2013

		<ul style="list-style-type: none"> 13. plano de acessibilidade pedonal de Lisboa volume 5 2013 14. plano municipal de gestão de resíduos do município de Lisboa 2015-2020 15. estratégias para a cultura da cidade de Lisboa 2017 16. estratégia municipal de adaptação às alterações climáticas de Lisboa 2017 17. estratégia local integrada combate à pobreza Lisboa 2018 18. plano de desenvolvimento social 2017-2020 19. plano municipal para a integração de migrantes de Lisboa 2018-2020 20. plano de saúde, qualidade de vida e bem-estar de Lisboa 2019 21. estratégia local de habitação 2019/2024 22. plano municipal para a igualdade de género 2019 23. plano municipal de prevenção e combate à violência contra as mulheres, violência doméstica e de género 2019-2021 24. Lisboa é uma cidade comprometida com o futuro 2019 25. relatório de monitorização do plano de acção local da biodiversidade de Lisboa (palbl) 2020 26. estratégia turismo 2020-2024 27. Lisbon resilience action plan 2020-2030 28. plano de ação local para a biodiversidade em Lisboa 2020 29. biodiversidade na cidade de Lisboa: uma estratégia para 2020 documento técnico 30. plano municipal lgbti+ 2020-2021 31. move Lisboa 2030
Manchester	<ul style="list-style-type: none"> 1. Manchester's local development framework core strategy 2012 2. Manchester climate risk: a framework for understanding hazards & vulnerability 2021 3. Manchester zero carbon framework 2020-2038 4. state of the city report 2020-2025 5. our Manchester strategy forward to 2025 	<ul style="list-style-type: none"> 6. green and getting greener 2015-2025 7. manchester's great outdoors a green and blue infrastructure strategy for manchester 2015-2025 8. my backyard: an action plan to increase green space and enhance wildlife in domestic gardens across Manchester 2016 9. Manchester's park strategy 2017-2027 10. a healthier Manchester 2019 11. Manchester climate change framework 2020-25 12. Manchester joint commissioning strategy for children with special educational needs and disabilities (SEND) 2020 – 2023 13. Manchester digital strategy 2021-2026 14. workforce equalities strategy 2021 15. Manchester housing strategy 2022-2032 16. city centre transport strategy to 2040
Marseille	<ul style="list-style-type: none"> 1. plan climat énergie territorial 2012-2020 2. approche stratégique 2030 	<ul style="list-style-type: none"> 3. cahier des propositions habitantes 2017 4. économie circulaire 2017 5. tous unis pour l'emploi 2018 6. contrat local de sante 2019-2021 7. biodiversité terrestre et marine 2019 8. Marseille port fos nos actions pour l'excellence environnementale 2019 9. strategie partenariale 2012-2020 10. rapport de développement durable 2020 11. rapport d'orientations budgétaires 2021 12. enjeux emploi la discrimination 2021 13. synthèse du projet de zone à faibles emissions mobilité de marseille 2022 14. Marseille 2030 - cœur historique en transition
Milan	<ul style="list-style-type: none"> 1. Piano operative 2014-2020 2. PGT Milano 2030 	<ul style="list-style-type: none"> 3. piano di zona 2018 – 2020 4. PGT piano delle regole 2019 5. PGT contenuti paesaggistici del piano infrastrutture Verdi e blu e rete ecologica comunale 2019 6. PGT valutazione ambientale strategic 2019 7. PGT valutazione ambientale strategic rapport ambientale allegato 2 2019 8. PGT valutazione ambientale strategica sintesi non tecnica 2019 9. PGT Variante per aggiornamento di aspetti idrogeologici e relative norme di attuazione del Piano delle Regole 2019 10. PGT valutazione ambientale strategica dichiarazione di sintesi finale 2019 11. PGT valutazione ambientale strategica riallineamento dei contenuti di VAS a seguito dell'approvazione del PGT 2019

		<ul style="list-style-type: none"> 12. PGT valutazione ambientale strategica rapport ambientale allegato 1 2019 13. piano aria e clima allegato 3 2020 14. piano aria e clima approvato 2020 15. piano attuativo N.7 valutazione ambientale strategica 2020 16. Piano Aria e Clima Allegato 5 2020 17. piano ariaclima Milano ad energia positive 2020 18. Piano Aria e Clima Allegato 4 2020 19. Milano 2020 strategia di adattamento 20. procedura di assoggettabilità a VAS del Piano Aria e Clima 2021 21. l'attuazione dei processi partecipativi all'interno della vas 2021 22. linee guida vas 2022 23. servizi all'infanzia 2022 24. Milano 2030 – La Nuova Visione Della Citta'
Valencia	<ul style="list-style-type: none"> 1. Plan de Acción Medioambiental 2. Estratègia Urbana València: Marc Estratègic 2030 3. Estratègia Urbana València: Plan de Accion 2030 4. Estratègia Urbana València: Sistema de Governança 2030 5. Missions València 2030 	<ul style="list-style-type: none"> 6. Diagnosis energética del Ayuntamiento de València 2016 7. Estrategia Valenciana ante el Cambio Climático 2013-2020 8. Plan de Movilidad Urbana Sostenible de Valencia 2014 9. strategy neighborhood benimaçlet 2018 10. Proyectos de Datos Abiertos 2018 11. Plan de Acción para el Clima y la Energía Sostenible de la Ciudad de València 2019 12. Estrategia de Educación para la Ciudadanía Global en el Ámbito No Formal en la Ciudad de València 2019-2022 13. Estrategie Frenel al Cambio Climático Valencia 2020 14. plan adaptac. lacomba 2020-2030 15. Hoja de Ruta para la Estrategia Energética de Valencia 2020-2030 16. Plan Estratégico 2021-2025 17. Plan Estratégico de Empleo, Formación y Emprendimiento 2021-2024 18. pacto para el empleo en la ciudad de València 2021-2024 19. Estrategia Agroalimentaria València 2025 20. Misión Climática València 2030 21. Estrategia de Biodiversidad de la Comunitat Valenciana 2030 22. Plan de Adaptación al Cambio Climático de Valencia 2050 23. Missions climatica 2030

Figure S1: Conjoint results with forced choice



Bibliography

- Acuto, M. (2016). Give Cities a Seat at the Top Table. *Nature*, 537: 611-613.
- Affolderbach, J., & Schulz, C. (2017). Positioning Vancouver Through Urban Sustainability Strategies? The Greenest City 2020 Action Plan. *Journal of Cleaner Production*, 164: 676-685.
- Angelo, H., & Wachsmuth, D. (2020). Why Does Everyone Think Cities Can Save the Planet? *Urban Studies*, 57 (11): 2201-2221.
- Anguelovski, I., & Martínez Alier, J. (2014). The 'Environmentalism of the Poor' revisited: Territory and Place in Disconnected Glocal Struggles. *Ecological Economics*, 102: 167-176.
- Anguelovski, Isabelle, James Connolly, Hamil Pearsall, Galia Shokry, Melissa Checker, Juliana Maantay, Kenneth Gould, Tammy Lewis, Andrew Maroko, and Timmons Roberts. 2019. Opinion: Why Green "Climate Gentrification" Threatens Poor and Vulnerable Populations. *Proceedings of the National Academy of Sciences* 116(52): 26139-26143.
- Barnett, C., & Parnell, S. (2016). Ideas, Implementation and Indicators: Epistemologies of the Post-2015 Urban Agenda. *Environment and Urbanization*, 28 (1): 87-98.
- Baud, I., Grafakos, S., Hordijk, M., & Post, J. (2001). Quality of Life and Alliances in Solid Waste Management, *Cities*, 18: 3-12.
- Berke, P., & Conroy, M. (2000). Are We Planning for Sustainable Development? An Evaluation of Thirty Comprehensive Plans. *Journal of the American Planning Association*, 66 (1): 21-33.
- Binder, C. R., Wyss, R. & Massaro, E. (eds.) 2020. Sustainability Assessments of Urban Systems. Cambridge University Press.
- Boesch, A., & de Montmollin, A. (2020). Indicators for Assessing the Sustainability of Cities. In C. Binder, R. Wyss, & E. Massaro, *Sustainability Assessment of Urban Systems* (pp. 311-331). Cambridge: Cambridge University Press.
- Boyatzis, R. E. (1998). *Transforming qualitative information: thematic analysis and code development*. Sage Publications.
- Brandtner, C., & Suárez, D. (2020). The Structure of City Action: Institutional Embeddedness and Sustainability Practices in U.S. Cities. *The American Review of Public Administration*, 51: 121-38
- Campbell, S. (1996). Green Cities, Growing Cities, Just Cities?: Urban Planning and the Contradictions of Sustainable Development. *Journal of the American Planning Association*, 62 (3): 296-312.
- Checkoway, B. (1995). Six Strategies of Community Change. *Community Development Journal*, 30 (1): 2-20.
- City of Amsterdam. (2020). The Amsterdam City Doughnut. March. Online: <https://www.kateraworth.com/wp/wp-content/uploads/2020/04/20200406-AMS-portrait-EN-Single-page-web-420x210mm.pdf>.
- Culwick, C., & Patel, Z. (2020). Building Just and Sustainable Cities Through Government Housing Developments. *Environment and Urbanization*, 32 (1): 133-154.
- De la Sota, C., Ruffato-Ferreira, V.J., Ruiz-García, L., & Alvarez S. (2019). Urban green infrastructure as a strategy of climate change mitigation. A case study in northern Spain. *Urban Forestry & Urban Greening*, 40: 145-51.
- De Satgé, R., & Watson, V. (2018). Urban planning in the global south: Conflicting rationalities in contested urban space. Cham: Palgrave and Macmillan.
- de Vries, B., & Peterson, A. (2009). Conceptualizing Sustainable Development. *Ecological Economics*, 68 (4): 2006-1019.
- Dempsey, N., Bramley, G., Power, S., & Brown, C. (2011). The Social Dimension of Sustainable Development: Defining Urban Social Sustainability. *Sustainable Development*, 19 (5): 289-300.
- Denis, M., Cysek-Pawlak, M., Krzysztofik, S., & Majewska, A. (2021). Sustainable and vibrant cities. Opportunities and threats to the development of Polish cities. *Cities*, 109.
- Elkington, J. (1997). *Cannibals With Forks*. Oxford: Capstone Publishing Limited.
- Fiack, D., Cumberbatch, J., Sutherland, M., & Zerphey, N. (2021). Sustainable Adaptation: Social Equity and Local climate Adaptation Planning in U.S. Cities. *Cities*, 115 (6): 1-11.
- Frantzeskaki, N., Castán Broto, V., Coenen, L. & Loorbach, D. 2017. *Urban sustainability transitions*. London and New York: Routledge.
- Griggs, D., Stafford-Smith, M., Gaffney, O., Rockström, J., Öhman, M., Shyamsundar, P., . . . Noble, I. (2013). Sustainable Development Goals for People and Planet. *Nature*, 495: 305-307.
- Hainmueller, J., Hopkins, D., & Yamamoto, T. (2014). Causal Inference in Conjoint Analysis: Understanding Multidimensional Choice via Stated Preference Experiments. *Political Analysis*, 22 (1): 1-30.
- Hák, T., Janoušková, S., & Moldan, B. (2016). Sustainable Development Goals: A Need for Relevant Indicators. *Ecological Indicators*, 50: 565-573.

- Helsinki. (2021). *From Agenda to Action: Implementation of the UN Sustainable Development Goals in Helsinki*. Helsinki: Helsinki Government.
- Hofer, K., & Kaufmann, D., (2022). Actors, Arenas and Aims: A Conceptual Framework for Public Participation. *Planning Theory*. Early Online.
- Hopewood, B., Mellor, M., & O'Brien, G. (2005). Sustainable Development: Mapping Different Approaches. *Sustainable Development*, 13 (1): 38-52.
- Hughes, S. (2020). Just Urban Transitions: Toward a Research Agenda, *WIREs Climate Change*, 11(3): e640
- Jabareen, Y. R. (2006). Sustainable Urban Forms: Their Typologies, Models, and Concepts. *Journal of Planning Education and Research* 26: 38–52.
- Kaufmann, D., & Sidney, M., (2020). Toward an urban policy analysis: Incorporating participation, multilevel governance, and 'seeing like a city, *PS: Political Science & Politics* 53(1): 1-5.
- Kenworthy, J. (2016). The Eco-City: Ten Key Transport and Planning Dimensions for Sustainable City Development. *Environment and Urbanization*, 18: 67-85.
- Lange, P., Driessen, P., Sauer, A., Bornemann, B., & Burger, P. (2013). Governing Towards Sustainability - Conceptualizing Modes of Governance. *Journal of Environmental Policy and Planning*, 15 (3): 403-425.
- Leeper, T., Hobolt, S., & Tilley, J. (2019). Measuring Subgroup Preferences in Conjoint Experiments. *Political Analysis*, 28 (2): 1-55.
- Lerpold, L., Sjöberg, Ö., & Wing-Shing, T. (2021). Sustainability Trade-Offs Across and Within the Intra-Urban Space. In R. Bali Swain, & S. Sweet, *Sustainable Consumption and Production* (pp. 283-313). London: Palgrave Publishing.
- Local Governments for Sustainability. (2019). European Cities. Online: <https://icli-europe.org/member-in-the-spotlight/lisbon-portugal/>.
- Long, J., & Rice, J. (2018). From Sustainable Urbanism to Climate Urbanism. *Urban Studies*, 56 (5): 992-1008.
- Lubell, M., Feiock, R., & Handy, S. (2009). City Adoption of Environmentally Sustainable Policies in California's Central Valley. *Journal of the American Planning Association*, 75 (3): 293-308.
- Lubell, M., Zahran, S., & Vedlitz, A. (2007). Collective Action and Citizen Responses to Global Warming. *Political Behaviour*, 29: 391-413.
- Maclaren, V. (1996). Urban Sustainability Reporting. *Journal of the American Planning Association*, 62 (2): 184-202.
- O'Flaherty, J., & Liddy, M. (2018). The impact of development education and education for sustainable development interventions: a synthesis of the research. *Environmental Education Research*, 24(7): 1031–1049.
- Obeng-Odoom, F. (2014). Green Neoliberalism: Recycling and Sustainable Urban Development in Sekondi-Takoradi. *Habitat International*, 41 (2): 129-134.
- Parnell, S. (2016). Defining a Global Urban Development Agenda. *World Development*, 78: 529-540.
- Pierre, J., & Peters, B. (2005). *Governing Complex Societies*. London: Palgrave Macmillan.
- Pope, J., Bond, A., Hugé, J., & Morrison-Saunders, A. (2017). Reconceptualising Sustainability Assessment. *Environmental Impact Assessment Review*, 62: 205-215.
- Portney, Kent, and Jeffrey Berry. 2010. Participation and the Pursuit of Sustainability in U.S. Cities. *Urban Affairs Review* 46(1):119-139.
- Preval, N., Randal, E., Chapman, R., Moores, J., & Howden-Chapman, P. (2016). Streamlining Urban Housing Development: Are there Environmental Sustainability Impacts? *Cities*, 55: 101-112.
- Ravetz, J. (2000). Integrated Assessment for Sustainability Appraisal in Cities and Regions. *Environmental Impact Assessment Review*, 20 (1): 31-64.
- Raworth, K. (2012). A Safe and Just Space for Humanity: Can we Live within the Doughnut? *Oxfam Discussion Papers*, available at: https://www-cdn.oxfam.org/s3fs-public/file_attachments/dp-a-safe-and-just-space-for-humanity-130212-en_5.pdf
- Robinson, J. (2022). *Comparative Urbanism: Tactics for Global Urban Studies*. Hoboken: John Wiley & Sons.
- Rockström, J., Steffen, W., Noone, K., Persson, A., Chapin III, S., Lambin, E., Sörlin, S. (2009). A Safe Operating Space for Humanity. *Nature*, 461: 572-475.
- Rockström, J., Gupta, J., Qin, D., Lade, S.J., Abrams, J.F., Andersen, L.S., Armstrong McKay, D.I., Bai, X., Bala, G., Bunn, S.E. & Giobanu, D. (2023). Safe and just Earth system boundaries. *Nature*. 1-10.
- Saebom, J., Stokes, G., & Hamilton, C. (2023). Empirical Evidence of Urban Climate Adaptation Alignment with Sustainable Development: Application of LDA, *Cities*, 136: 104254
- Saha, D., & Paterson, R. (2008). Local Government Efforts to Promote the "Three Es" of Sustainable Development: Survey in Medium to Large Cities in the United States. *Journal of Planning Education and Research*, 28 (1): 21-37.

- Satterthwaite, D. (2017). Successful, Safe, and Sustainable Cities: Towards a new Urban Agenda. *Commonwealth Journal of Local Governance*, 19: 3-18.
- Schlosberg, D. (2007). *Defining Environmental Justice: Theories, Movements, and Nature*. Oxford: Oxford University Press.
- Swyngedouw, E. (2005). Governance Innovation and the Citizen: The Janus Face of Governance-Beyond-the-State. *Urban Studies*, 42 (11): 1991-2006.
- Tapia, C., Abajo, B., Feliu, E., Mendizabal, M., Martinez, J., German Fernández, J., Lejarazu, A. (2017). Profiling Urban Vulnerabilities to Climate Change: An Indicator-Based Vulnerability Assessment for European Cities. *Ecological Indicators*, 78: 142-155.
- UNCTAD. (2022). *Total and Urban Population*. Retrieved from UNCTAD: <https://hbs.unctad.org>
- UN Habitat. (2020). *World City Report 2020: The Value of Sustainable Urbanization*. Online: https://unhabitat.org/sites/default/files/2020/10/wcr_2020_report.pdf
- United Nations. (2015). Resolution 70/1, Transforming our World: the 2030 Agenda for Sustainable Development. (A/RES/70/1). Online: <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N15/291/89/PDF/N1529189.pdf?OpenElement>
- United Nations Statistics Division. (2023). *SDG Indicators*. Retrieved from United Nations Social Development Goals: https://unstats.un.org/sdgs/indicators/Global%20Indicator%20Framework%20after%202023%20refinement_Eng.pdf
- Valencia, S., Simon, D., Croese, S., Nordqvist, J., Oloko, M., Sharma, T., Versace, I. (2019). Adapting the Sustainable Development Goals and the New urban Agenda to the City Level: Initial Reflections from a Comparative Research Project. *International Journal of Urban Sustainable Development*, 11 (1): 4-23.
- Wachsmuth, D., Aldana Cohen, D., & Angelo, H. (2016). Expand the Frontiers of Urban Sustainability. *Nature*, 536: 391-293.
- Wang, J., & Foley, K. (2021). Assessing the Performance of Urban Open Space for Achieving Sustainable and Resilient Cities: A Pilot Study of Two Urban Parks in Dublin, Ireland, *Urban Forestry & Urban Greening*, 62
- Watson, V. (2016). Locating Planning the New Urban Agenda of the Urban Sustainable Development Goal. *Planning Theory*, 15 (4): 435-448.
- Wicki, M., Hofer, K., & Kaufmann, D. (2022). Planning instruments enhance the acceptance of urban densification. *Proceedings of the National Academy of Sciences (PNAS)* 119 (38) e2201780119.
- Wicki, M., Kauer, F., Hofer, K., & Kaufmann, D. (2022). The Politics of Densification: Who Wants to Regulate Housing Development How? Paper presented at the *American Political Science Association Annual Meeting and Exhibition* in Montreal: ETH Zürich, <https://doi.org/10.3929/ethz-b-000570236>
- Wittwer, S., Hofer, K., & Kaufmann, D. (2023). An Urban Take on Sustainable Development Policies and Corresponding Positioning Strategies. *npj Urban Sustainability*, 3: 1.
- Wolch, J., Byrne, J., & Newell, J. (2014). Urban Green Space, Public Health, and Environmental Justice: The Challenge of Making Cities 'Just Green Enough'. *Landscape and Urban Planning*, 125: 234-244.
- World Bank. (2019). Urban Development. available at: <https://www.worldbank.org/en/topic/urbandevelopment/overview>
- Wurster, S. (2013). Comparing Ecological Sustainability in Autocracies and Democracies. *Contemporary Politics*, 19 (1): 76-93.