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Examining the Relevance of Citizen Participation in Sustainable Urban Mobility

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Abstract

This paper delves into the crucial role that citizen participation plays in the advancement of sustainable urban mobility. It introduces the overall concept of sustainable development and how transport plays an important role in the 3 axes of sustainability (environmental, social, and economic). Further on, the paper sets the context by highlighting the nuanced differences between citizens and stakeholders and exploring the different approaches to citizen participation. The paper also underscores the significance of citizen participation in shaping sustainable mobility, and provides an outlook into the challenges associated with citizen participation and how to overcome them. The paper also provides insight into the successful implementation of citizen participation initiatives by highlighting several cases in Europe, specifically under the DYN@MO project. The conclusion provides an encapsulation of key findings and suggests potential areas for future research.

Keywords: *Sustainability, Transport, Citizen Participation*

1. Introduction

The concept of sustainable development is one that has gained traction over the years mostly in response to the effects of climate change. According to Fischer [1], the most widely accepted definition of sustainable development was published in 1987 in a United Nations report released by the Brundtland Commission. This report defines sustainable development as *"development that meets the needs of the present without compromising the ability of future generations to meet their own needs."* (World Commission on Environment and Development, 1987, Ch. 2, IV, 1; as cited by Fischer, et al. 2023).

Sustainability hinges majorly on 3 essential axes: the environmental, the social, and the economic, all of which are linked to transport [2]. As cities have grown and become more urban, they have turned into hubs of activity (commercial, leisure, tourism, etc.) that attract many people. This has made these cities more car-centric and led to the emergence of several issues. Gonzalez [3] refer to these issues as externalities with the most known road-related ones being traffic congestion, accidents, air pollution, and noise. This excess automobile use/dependency coupled with these externalities is viewed as a primary sustainability concern [4].

One outcome of these ever-growing urban centers is that the needs of the people evolve as these centers experience growth in infrastructure, services, housing, etc. This, therefore, has meant that city planners in recent times have had to rethink the conventional approach to city planning. Cities now tend to consider an inclusive approach, where citizen participation takes a special interest with the purpose of creating receptive cities that are focused on the needs of the citizens [5]. Furthermore, in order to ensure the participation of all social groups and lessen the effects of transport, such as energy consumption, CO2 release, air quality, wasted space in the streets, or impact on public health, the traditional planning mobility approach has been shifting towards sustainable smart mobility [5].

In and of itself, public involvement in matters affecting cities is not a novel idea. Policies and procedures governing public participation in large-scale construction projects are already in place in many European cities [6]. The European Commission strongly recommends that all towns and cities in the continent embrace the concept of Sustainable Urban Mobility Plans, SUMPs (see transport.ec.europa.eu); and key at the center of the SUMP concept is the element of public participation. The Commission defines a SUMP as *"a strategic plan designed to satisfy the mobility needs of people and businesses in cities and their surroundings for a better quality of life. It builds on existing planning practices and takes due consideration of integration, participation, and evaluation principles."*

In the context of developing countries, however, citizen participation remains a less investigated area of development intervention [7]. This poses a challenge for citizens of these countries considering the fact that cities in the developing world still contribute the highest numbers of traffic-related deaths and injuries, air pollution, noise, etc. Thus, it is crucial to explore urban transport policy measures for these areas that are already facing a high burden of mortality, morbidity, and inequity [8].

This paper, therefore, seeks to examine the relevance of citizen participation especially in the formulation of sustainable urban mobility policies, plans, strategies, etc. By taking examples of developed countries for example in Europe, this paper seeks to also provide a formative justification regarding citizen participation not just for the countries that are currently doing it but also for those yet to fully adopt the concept. The paper is a state-of-the-art study into the different contexts under which citizen participation has been successful, its challenges, and proposes a potential way forward.

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2. Content

Citizen vs Stakeholder

The planning of transport requires a direct and continuous involvement of the public (and all stakeholders), given the often-complex nature of decisions, and the impact that these decisions can have on society [9]. Lindenau and Böhler-Baedeker [6] provide a distinction between two common categorizations of involvement often mentioned in the literature; "stakeholder" participation and "citizen" participation. Although several scholars agree that the "ordinary citizens" could be classified as stakeholders, Lindenau and Böhler-Baedeker differentiate the 2; stating that a *stakeholder* may be an individual, group, or organisation affected by a proposed plan or project and its implementation for example retailers, local industry, resident associations, environmental associations, etc; while the *citizens* are individual members of the public, plus those participants who are not affiliated in the involvement process. Lindenau and Böhler-Baedeker further state that the theoretical and practical distinctions between stakeholders and citizens are blurred mainly because citizens can also be considered a large stakeholder group.

The Organisation for Economic Cooperation and Development (OECD) in its guidelines [10] about citizen participation offers a more distinct difference between citizens and stakeholders;

Stakeholders: *any interested and/or affected party, including institutions and organisations, whether governmental or non-governmental, from civil society, academia, the media or the private sector.*

Citizens: *individuals, regardless of their age, gender, sexual orientation, religious and political affiliations, or special needs in the larger sense 'an inhabitant of a particular place', which can be in reference to a village, town, city, region, state, or country depending on the context.*

Despite varying approaches to the *citizen vs stakeholder* argument in the literature, it can still be argued that in an ideal society, most citizens are part of some form of affiliation for example either as students, businesspeople, employees, etc. Therefore, any public participation efforts that target the citizens' input can inherently collect the views of the different stakeholder affiliations that the citizens belong to.

Approaches to Citizen Participation

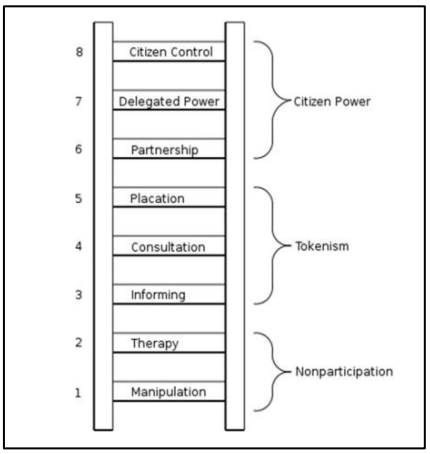
OECD [10] details 3 distinct levels of citizen and stakeholder participation that differ based on the level of involvement;

- Information: This is an initial level of participation mainly defined by a one-sided relationship in which the government produces and delivers information to citizens (and stakeholders).
- Consultation: a more advanced level of citizen participation that involves a two-way relationship in which feedback is exchanged between both the citizens and the government.
- Engagement: This is when citizens and stakeholders are given both the opportunity and the needed resources to collaborate during all phases of the policy cycle, the service design, and delivery. Although the final decision or policy formulation often lies with the investor or other authorities, this approach recognizes the equal standing of citizens in establishing the agenda, putting forward project or policy ideas, and influencing the dialogue around the project.

Arnstein [11] [6] defined citizen participation as the redistribution of power and thus developed an 8-step ladder that is a gradual symbolisation of participation levels; starting with nonparticipation, referred to as manipulation and therapy, to citizen control at the top.

Depending on the goal of the project, and owing to the resource limitations that may govern the participation process, it can often be deemed more appropriate to target the involvement of specific groups for example soliciting the opinion of some students about the initiation of discounted public transport routes. However, there is debate both in research and in planning practice about how representative, influential, and authoritative a segment of individuals may be in the decision- making process for example *involving a few women in a participation process does not mean that 'women' are adequately represented* [6]**.**

Figure 1: A Ladder of Citizen Participation [11], [6]



Quick [12] also highlights a number of different methods used to involve the public in the transportation planning process and some of them include;

- Advisory boards: These primarily comprise a group of stakeholders recruited in order to provide guidance on a particular policy area or project. They are often intended to represent the public at large for example, an advisory committee on disabled transit riders
- Project review teams: help transportation professionals assess projects. They may rank proposals or provide comments and questions for professionals to consider in their evaluations.
- Collaborative performance measurement: involves service providers and stakeholders assessing how well a service or project is doing. It helps identify and address issues in performance and situations where different parties have different goals and expectations for a service.

Other approaches highlighted include focus groups and workshops, structured public involvement, participatory action research, etc. [12]

Conventionally, citizen participation has been done by means of "physical" outreaches often characterized by seminars, public debates, campaigns, etc. However, with the adoption of new technologies, citizen participation methods have started to shift more towards online environments [13]. This new era of participation, referred to as *Participation 2.0*, is a derivative of the change from "web 1.0" ("read-only") to "web 2.0" which is characterized by websites that allow users to interact and collaborate with each other and to create content rather than just passively view it for example through social media groups, interactive web platforms, discussion forums, online polls and mobile applications [13].

Significance of Citizen Participation

Citizen participation is important because it gives people a better understanding of the sustainable urban mobility planning process and gives them a chance to have an impact on and actively participate in the development of their local living environment [13]**.** The public's involvement compels urban and transport planners to utilize approaches that the public can easily understand and explain often quite complicated planning concerns in plain language. Additionally, it's critical that the city

learn about any potentially contentious subjects and solicit input early on [13]. Participation enables citizens to contribute new information, diverse perspectives, and motivation to solve problems. It can lead to a fairer distribution of limited public resources. The public is more informed and interested when given opportunities to identify priorities, shape decisions, or influence policies [12]. OECD [10] highlights a number of benefits that can be gained from citizen participation, and they include the following;

- Bringing in public opinion / public judgement
- Getting a diversity of views; and including rarely heard voices
- Can be representative of the broader public (if a representative group is engaged)
- Helping to raise awareness and facilitating public learning about an issue
- Helping to deliver tailor-made solutions and ensure their effectiveness

Active participation of citizens and stakeholders at various stages of the Sustainable Urban Mobility Plan (SUMP) development is a crucial aspect of effective sustainable mobility planning. Their engagement is essential in identifying transportation and mobility challenges, defining the vision and objectives, shaping the strategy, proposing potential solutions, and participating in the identification and evaluation of those solutions [14].

Glass [15] identified five major objectives of citizen participation: information exchange, education, support building, supplemental decision-making, and representational input. Baum [16] also highlights the purpose of citizen participation as communicating information, developing relationships, developing the capacity to act, and preserving or changing conditions. Glass [15] however, stated that even though the participation of citizens was a commonplace element in many planning efforts, often both planners and the citizens assessed the process as being unsatisfactory since there was a particular failure in matching the objectives to the techniques during the design of participatory programs. This view is also backed up by Thondoo [17] who states that, in the context of urban and transport planning, the lack of citizen participation can lead to a misalignment between policy measures and citizen needs. Which can act as a precursor to issues that eventually threaten human health and social equity for example congestion, increased air and noise pollution, and traffic danger.

Challenges Associated with Citizen Participation and How to Overcome Them

During the participation process, some citizens and stakeholders harbor skepticism regarding their actual ability to impact the results of transportation projects, whether they pertain to highways or public transit. Others may perceive transportation plans, whether executed at the state or metropolitan level, as overly abstract and long-term, making them question the relevance of dedicating attention to such initiatives [18]. The following (Figure 2) is a table extracted from a 2013 publication for the EU co-funded project CH4LLENGE which addresses significant barriers for the wider take-up of SUMPs in Europe [14].

Though not specifically pertaining to sustainable urban mobility, Denhardt et. al [19] highlighted several barriers to overall citizen participation in developing countries for example lack of democratic culture and civil society, poverty, time pressures and the need for immediate results, lack of institutional infrastructure, etc. It can be hypothesized that these barriers, though general in nature, equally affect citizen participation efforts in achieving sustainable urban mobility for these countries.

Barriers	Description	Strategies to Overcome Barriers
Aim and purpose of participation are unclear	Clarify the aim of the participation - to understand the needs of certain groups (e.g. people with mobility difficulties; parents and guardians of young children etc.) or - to draw on lay or expert knowledge in developing a transport plan or - to gather information about travel experiences	Determine, who should be involved - people who together represent the demographic make-up of the city - demographic representation if the aim of participation is to draw on public knowledge, or to understand public experiences - members of groups if the aim is to understand needs of specific groups what form of participation is appropriate - forums allowing debate to use lay or expert knowledge in developing a transport plan - questionnaires or interviews for gathering experiences of travel - question and answer session for helping to explain decisions when to involve - explain how public or stakeholder involvement influences decisions. show people that their participation makes a difference
Accessibility of participation	Barriers to participation occur, -if people cannot physically reach a venue in which participatory events occur -if information is not provided in a format that can be clearly understood	Consider aspects such as, -can people attend after work -is there provision for children at events - is there wheelchair access -what is the availability of transport to the Venue - how is material distributed (consider e.g that online questionnaires are cost effective and have broad reach, but may exclude some groups of people) -how opportunities for participation are publicized -whether information is presented in clear language that can be understood by a lay person - whether information is provided in braille, large text and audio formats - whether information should be translated into different languages spoken in your city
Public reluctance to engage in participation	- Groups that face forms of social exclusion or discrimination may have little trust in formal participation - People feel they have little free time to give to participating - People feel that their word does not count and that the decision-making process remains opaque despite consultation	While there are no simple answers to problems of reluctance to participate, it is probable that interest will increase to the extent that people see the relevance to them of participating, and feel that the processes are transparent and worthy of their trust
Institutional barriers to participation	- Include limitations in institutional resources, and difficulty in securing resources required for participation - Institutional cultures which place low priority on participation	Might lead to poorly planned participation or a failure to take seriously results of participation (perhaps because of a view that the public are poorly informed). In either case the risk if that loss of public trust will follow.

Table 1: Common barriers in participation processes and how to overcome them, CH4LLENGE (2013)

Case Studies on Citizen Participation for Sustainable Transport

The concept of citizen participation is one that has taken a firmer rooting in developed countries rather than developing ones. There are several cases strewn in the literature about sustainable urban mobility projects that have seen an element of citizen participation in some developed countries. However, the literature is still lacking, and it is thus more difficult to pinpoint a case of active citizen participation in a developing country that has been fully documented from its initial stages, implementation, and study of its impact. Whether it's Santiago and Temuco, Chile [20] or Bengaluru in India [21], conclusive data is still harder to come by to be able to formulate a proper understanding.

In light of that, all highlighted cases here are from Europe.

DYN@MO Project

The DYN@MO (DYNamic citizens @ctive for sustainable MObility") project was funded by the European Commission between 2012- 2016. According to the official project brochure published by the European Commission, the project involved two leading cities, Aachen in Germany and Gdynia in Poland, as well as two learning cities, Koprivnica in Croatia and Palma de Mallorca in Spain. The mission of the project cities was to strengthen sustainable mobility by promoting non-polluting lifestyles, fostering social interaction and collaboration on the basis of the new media, and implementing integrated implementation of innovative transport services for active citizens of all ages (https://civitas.eu/projects/dynmo#about) As a result, these cities have strengthened their sustainable mobility by;

- Promoting non-polluting lifestyles and engaging in a dynamic citizen dialogue for mobility planning and service improvement,
- Developing 'Mobility 2.0' systems and services through the application of new web-based technologies,
- Implementing city and citizen-friendly, cleaner mobility solutions, using new electric and hybrid vehicles.

The table below is a summary of some of the projects carried out across these 4 cities and their reported successes as per the DYN@MO official project brochure

Aachen;

Electro Mobile Living

Background	Results and Achievements
At three residential sites, cooperation between a public housing company, the city administration, an energy provider and mobility providers were established. The connection between renewable energies and electric mobility options was demonstrated at one of the sites and a promotional campaign was organized to gain more interest in developing and using the new mobility options.	▪ CO2 emissions cut by 80% compared to standard car share cars due to implementation of 3 new car share stations with electric cars. ▪ The option for 80 residents in the neighborhood to test sustainable transport modes. ▪ Faster rate of growth in utilization of new electric car share cars than of standard car share cars.

Gdynia;

Advancing towards a dynamic SUMP

Background	Results and Achievements
The development of Gdynia's SUMP was based on consolidation of existing urban and transport planning frameworks formed during the many years that the city had already been involved in sustainable urban planning. Also, modelling and information technologies were used for the development of the SUMP. Web 2.0 applications facilitated active citizen participation and involvement of relevant stakeholders.	▪ Acceptance of comprehensive SUMP with concrete action plan by the City Council of Gdynia in October 2016. ▪ Gdynia's SUMP process became a model for cities in Poland and the Baltic region ▪ Wider range of sustainable transport measures in new SUMP compared to old one

Koprivnica:

Planning public transport system

Background	Results and Achievements
The basis for the development of a public transport system in Koprivnica was established by conducting an intermodality study on various combinations of sustainable transport modes.	▪ Design of an intermodal passenger terminal ▪ Feasibility study on intermodality of transport solutions ▪ Start of development of an integrated ticketing system

Palma:

Planning for cycling and walking

Background	Results and Achievements
In Palma, improving walking and cycling options is considered a priority. Therefore, the SUMP includes measures that give more prominence to pedestrians and cyclists: interconnection of different neighbourhoods by bike lanes, easier access with the expansion of Bicipalma, and promotion of walking as the main means of transport especially in the historic centre.	▪ Construction of 16 km of extra bike lanes and expansion of BiciPalma public bicycles service with 9 new stations, 175 anchor points and 150 bicycles, leading to increase in cycling above business-as-usual projections ▪ Implementation of 2 healthy walking routes and 7 school walking routes ▪ Introduction of car restrictions in the historic centre

Potential Areas for Future Research

- Harnessing the power of new technologies for example AI and advanced machine learning to solicit citizen views, model effective citizen participation strategies, and investigate the effectiveness of different approaches.
- Research on approaches that further strengthen the inclusivity and equity of transport systems. Considering that the world is a growing global village, future research in citizen participation can be targeted especially towards individuals or communities of diverse yet under-represented demographics.
- Tailor-made participation models. Considering that different communities view issues of sustainable urban mobility differently, it is worth studying to formulate participation strategies that are specifically tailored to the cultural, economic, or demographic contexts of the target population.
- Conducting of cross-cultural studies. In order to identify any universal or culturally-specific factors, it is important to make a comparison of the different citizen participation strategies that have been applied in different cultural contexts.
- Impact studies. Conducting comprehensive assessments of the actual impact that citizen participation has on the overall sustainability of urban mobility initiatives both in the long-term and short-term.

Conclusion

In conclusion, citizen participation is a key element of sustainable urban mobility. It is critical for authorities concerned with urban mobility issues to initiate transparent processes that give citizens both information and influence over key aspects of the planning and implementing process. As cities grow and attract a diverse demographic of occupants, it is vital that the view of these individuals be considered in the mobility planning decision-making process. There is evidence in the literature that points to successes that cities have achieved by involving their citizens for example in the highlighted case studies of cities under the DYNAMO Project. Unfortunately, most of these successes are found in the developed world, yet developing countries have a much higher need for sustainable mobility solutions. It is, therefore, an area of future research to look into the unique barriers to citizen participation in developing countries in order to develop tailor-made participatory strategies that account for the differences in cultural contexts.

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