

Approach to Ensure Inclusiveness for the Identification of Real Mobility and Public Space Re-Design Needs Towards Sustainability

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ABSTRACT

The paper presents the methodology specified and followed in the context of the European funded project ELABORATOR, to provide a comprehensive framework that acts as a practical tool to advise all relevant parties of mobility innovation chain towards achieving a higher level of inclusivity in all phases of new mobility solutions and services' design, implementation, deployment and evaluation. ELABORATOR aims to support cities in their transition towards climate neutrality by promoting zero-emission, active and human-centred mobility, with a special focus on inclusion. The methodology followed by the project goes beyond the technicalities of sustainable urban mobility solutions and via its inclusive research approach investigates the complex and differentiated needs conveyed by multiple stakeholders and citizens especially women and vulnerable to exclusion groups, in 12 European cities selected in terms of different socioeconomical, geographical, technological and cultural backgrounds, and beyond. The specified inclusion plan derives from research and 5 training workshops of 2 hours each done in 45 participants from 25 partner organisations of the ELABORATOR project. Through these workshops, representatives from 12 cities trained in gender sensitive and gender mainstreaming politics according to recent data from the literature review, to understand and prevent social exclusions not only based on gender but also in various types of vulnerabilities. During the workshops, cities shared information regarding mobility issues based on their cultural and social context, which was the primary material to co-create an inclusion plan from a holistic perspective. This enriches understanding of how these needs are embedded in different social and cultural milieus, how they are interwoven with expectations and needs, how they form differentiated patterns of urban mobility as well as how they can be communicated to enhance the implementation of sustainable urban mobility solutions. The proposed research framework interacts with vulnerable to exclusion groups so that: i) a great diversity of social groups of future users and stakeholders are well represented; ii) a conscious, welcoming, and stimulating environment is created; iii) everyone in those groups feels comfortable in sharing visions, doubts and needs. The investigation, discovery, development and evaluation of the inclusivity of innovative urban mobility solutions by a large under-researched vulnerable to exclusion groups and further stakeholders' is a complex task and is achieved through well-defined requirements, specifications, methods, tools as well as the combined access of different disciplines.

Keywords: Inclusive vocabulary, VRUS, Human-centred mobility, Gender perspective

INTRODUCTION

Mobility is an essential element of urban planning, characterising the urban spaces and their functions. Whether by car, public transport or on foot, is a crucial aspect that affects one's view and daily life, their neighbourhood and city, their sense of comfort, safety and security, their sense of belonging and well-being, their health, and more on. Although in recent years the European Union has put a lot of emphasis on promoting strategies and actions for diversity, equity and inclusion in all fields of research and technology in Europe (as it is one of the priorities of the Cohesion Policy in 2014–2020), the innovation of many projects is still limited (or sometimes equivalent) to technological aspects, which in many cases have little to do with challenges that people have to face in their everyday lives, especially the more vulnerable social groups (i.e. the elderly, children, women, people with disabilities, etc.). ELABORATOR's inclusive framework aims to include the voices, experiences, perspectives, needs and aspirations of a greater diversity of users (and potential users) in the planned research and innovation activities from the outset, and to push the boundaries of mobility innovation by intersecting technological and social considerations in order to achieve meaningful impact at all levels of society. The methodology followed consists of three main activities and is conducted on four distinct phases, namely the Setup, the Discovery & Definition, the Implementation and finally the Evaluation and Dissemination. The activities are related with the provision of i) an inclusive vocabulary that includes a catalogue of appropriate terms to be used by all relevant parties, ii) a definition of "Vulnerable to exclusion groups" and Vulnerable Road Users as a result of the bibliographical review in the context of social, urban and environmental factors causing vulnerability, and iii) criteria to be used as guidelines for participatory workshops with citizens to ensure sustainable, inclusive, safe and affordable mobility interventions. Towards this direction, the production/capital oriented structure of societies/cities is investigated and how these norms and patterns affect vulnerable to exclusion groups. The challenges that the more vulnerable groups, such as women, older people, children, people with disabilities etc. face in their daily mobility are also explored in order to adjust a set of urban quality and inclusion criteria for VRUs in public spaces and mobility systems. The proposed criteria are relevant to 5 broad categories: *Safety & Security, Accessibility, Vitality, Public space & Mobility Equipment, as well as Inclusive signs and representations.*

In more detail, the whole process consists of different steps that are followed sequentially. First, specific guidelines on how to establish inclusive methodologies and co-creation tools to ensure broad representation of diverse citizen groups are provided as well as guidelines on inclusive decision-making and participation. Afterwards, a prioritisation of interventions is done based on principles of inclusion, identified during the set up, and using participatory decision-making as well as collective understanding of safe, sustainable, and inclusive urban transportation for all. Then, the enforcement of the guidelines for proposed inclusive spatial interventions are taking place via the well-established participatory co-production processes and the definition of inclusive validation processes. Finally, the evaluation and dissemination that runs in parallel with the previous ones refers to the evaluation of

mobility interventions using well-specified inclusive criteria and following the inclusive and open process for evaluation.

The Inclusion plan for ELABORATOR is the first consolidated action in this direction. The main objective is to provide multi-level support to the cities and partners to ensure their understanding of inclusion perspective for urban planning and mobility from the beginning and to provide the basis for all the following steps in terms of inclusion. It aims to be a reference for developing activities with the different local stakeholders to promote inclusion, representation and good cooperation at all levels of sustainable urban mobility interventions; design and implementation. The Inclusion plan has collected insights, tools, and tips to promote inclusion. It starts with a catalogue of terms to be avoided and more inclusive terms to be used instead, and it then continues by providing theoretical framework, insights, and general guidelines to be followed in order to enhance inclusivity.

SETUP THE RESEARCH FRAMEWORK

The research approach begins by establishing a set of methodologies and co-creation tools. These aim to i) enable the adjustment of the urban quality and inclusion criteria for public spaces and mobility regarding each local context, to establish baselines for the rating of the urban area in each of the pilot cities and ii) ensure a broad representation of different citizen groups, with a special focus on VRUs, in the co-creation process at each of the cities under investigation. The approach continues with an analysis of the theoretical framework regarding inclusion on mobility, namely the different reasons why people move, the different mobility patterns, how gender roles influence mobility patterns, the challenges faced by different social groups, and a list of vulnerable groups with brief explanations of their vulnerability to mobility.

Inclusive Vocabulary for ELABORATOR and Beyond

Inclusive vocabulary is a form of language that avoids discriminatory, disrespectful, hurtful or abusive terms when referring to a person or group of people based on their gender, race, sexual orientation or any other characteristic. Inclusive language is considered respectful and neutral and promotes equality in public discourse. In the following table, a selection of specific terms has been made in relation to the context of ELABORATOR.

Table 1. Vocabulary (sources: UN Women, 2022; UK Government, 2021; European Parliament, 2020; European Parliament, 2018).

Instead of	It is suggested	What is the philosophy behind it?
Category: Gender He, She, or They?	Kindly ask, if not sure.	In case that the gender is not known, a question to this person should be made.
Mrs., Miss	Ms	The correct title for a woman is Ms, regardless of her marital status (unless a woman chooses to use the title “Mrs.” or “Miss”). Ms is considered a neutral term.

(Continued)

Table 1. Continued

Instead of	It is suggested	What is the philosophy behind it?
Category: Age		
Seniors	Older persons /	Terms like “seniors, elderly” etc. are shaping stereotypes around ageism. The terms “older persons”, “persons 65 years and older” etc., are preferred as less discriminatory.
Elderly	people/adults	
The aged	Persons 65 years and	
Old-old	older (65+)	
Young-old	Older population	
Category: Diversability/Disability		
Handicapped, Disabled, Cripple, Invalid	People with disabilities or reduced functionality, Disabled person	Diversability is a term instead of disability, due to its wide spectrum of references. Diversability focuses on all the diverse abilities, in a positive way, not by merely focusing on impairments and social exclusions as the term “disability” does.
Category: Race		
Black	Black women / men Black communities / people	Always use the word “black” as an adjective, not as a category. It is considered disrespectful to refer to someone directly highlighting their skin colour. You use the word “black” when referring to minorities or certain groups of people who face specific challenges. This way you add visibility to their history and social demands, while acknowledging your positionality and the need to ensure an equal living
Illegal migrants Immigrants	Refugees Displaced persons	The term “migrants” tends to be an umbrella, neutral term for all displaced people.

The gender aspect is crucial when thinking in all forms of social life, including public discourse. The masculine gender in many scenarios still today is used as relevant for all, while it does not increase the visibility of women or other gender identities and reproduces misconceptions and stereotypes. Also, the language is a way of shaping identities, ideas, realities and policies in terms of gender and inclusion. ELABORATOR involves partners from 14 European countries, speaking numerous national languages. Each language has its own system that produces and reproduces social and/or gender gaps or promotes inclusive representations. According to the “Gender-neutral language in the European Parliament” (2018), European languages can be categorised into gender-neutral languages (i.e. Danish, English, Swedish) with very few gender-specific terms, genderless languages with no grammatical gender (i.e. Finnish, Estonian, Hungarian) and languages with grammatical genders (i.e. Greek, Slavic languages, German). Moreover, in many European languages (i.e. French, English, Spanish, Greek etc.) the new terminology regarding disability emphasises the situation rather than characterising the person. For this reason, inclusive terminology uses, in most cases, adjectives rather than nouns to describe a person and/or their situation (EPFL University, 2024; National Center on Disability and Journalism, 2021). If we consider the European Institute of Gender Equality (EIGE) index for 2023, countries with gender-neutral and genderless national languages tend to rank higher in terms of overall gender equality achieved (i.e. in 2023 Sweden had the highest ranking), while countries that have grammatical genders seem

to rank lower in the same ranking (i.e. Greece, Slavic countries). The above suggests that there is a significant connection between language and overall inclusion and gender equality achieved in each local context. Making all genders visible and using inclusive vocabulary is an important starting point for effectively pursuing inclusion in most aspects of social life as well as (gender) equality.

Mobility From a Gender Perspective

Gender perspective in research is a methodological approach to examine all aspects of daily life (social, economic, epistemological, etc.) through the inequalities that arise on the basis of gender. As Saeidzadeh explains, “Gender in research questions unequal power relations in social structures” (Saeidzadeh, 2023, p. 186). In addition to research, urban planning and policy, gender mainstreaming is also an approach to (re)designing inclusive mobility, as it recognises that women are vulnerable road users and focuses on promoting gender equality (Duxfield, 2021). This approach prioritises women, as they still face numerous discriminations and they also constitute the largest disadvantaged group (in terms of oppression due to social and political inequalities), which is 49.75% of the world’s population (Statistic Times, 2023). Therefore, the research on mobility while bearing in mind to promote safety, inclusivity, sustainability and affordability in EU cities cannot be implemented without a gender lens.

Mobility with a gender perspective aims to focus on people’s vulnerability to ensure mobility for all and the gender lens is used to clarify the complexity of requirements and demands for an equal living. In order to provide mobility systems that are able to respond to a diversity of user needs, the reasons behind people’s mobility should be visible (*to go where, to do what, how do they move, how do they feel?, etc.*). An inclusive approach to mobility also values women’s sustainable mobility patterns and prioritises active and sustainable modes of transport, not only because they are more sustainable and healthier, but also because they are more equitable and affordable (Collectiu Punt 6). Finally, it highlights people’s gendered realities and how established gender roles influence the way we live in our cities and our mobility choices.

Intersectionality and Vulnerability in the Context of Mobility

Each individual’s standpoint, or positionality, within their local or wider social, cultural or political context is influenced by various characteristics, including gender, cultural background, religion, sexuality, ability/functionality, socio-economic class, etc. The combination of these characteristics (intersectionality) can generate privileges but also barriers in everyday life for certain social groups, making them more vulnerable to exclusion. Vulnerable Road Users (VRUs) is a term used in transportation and road safety to describe groups of individuals who are at a higher risk of injury or harm when using roadways. These groups (i.e. pedestrians, cyclists, powered two wheelers, children, the elderly, disabled persons or with reduced mobility and orientation and users of mobility devices) are more susceptible to accidents due to lack of protective shield and various factors such as their mode of

transportation, behaviour, or physical vulnerability causing little to no protection in traffic and in the event of a collision (Tennessee Department of Transportation, 2023; European Commission, 2023; National Road Safety Strategy in Australia, 2021; Scholliers et al., 2017). In the context of ELABORATOR, vulnerable to exclusion groups considers a larger spectrum of users that goes beyond the common definition or uses a different term. VRUs are those being more likely to be disadvantaged by mobility planning, design and/or operations. This can include groups which are vulnerable to exclusion due to poor accessibility, affordability, or due to (existing or perceived) risks of personal safety and security. Examples include economically disadvantaged people, women, children, the elderly, people with physical or mental impairments, LGBTIQ+, migrants, etc.

In addition to technical barriers such as safe roads and accessible pavements, there are also barriers such as discrimination based on ethnicity or sexuality etc. that exclude people from equal mobility. In the ELABORATOR framework, VRUs are equally considered all socially excluded groups. In order to have a first analysis of barriers towards safe, inclusive, affordable and sustainable urban mobility for all, it is important to set a framework of social determinants related to mobility. The road users are classified as VRUs when their individual vulnerability, due to social or health factors, affects their mobility. To recognise and make visible the diversity of social groups that co-exist in the city, it is essential to collect quantitative and qualitative data that captures information about their mobility choices and patterns that is usually overlooked or not disaggregated by gender or other social characteristics.

After identifying vulnerable groups at the local level, they are invited to actively participate in co-creation and participatory activities (research, analysis, implementation, evaluation, etc.). The participatory framework needs to take into account people's different capacities to participate and create an inclusive and welcoming environment to embrace participation.

DISCOVERY AND DEFINITION

During the Discovery and definition there will be explored the specific challenges associated with the provision of safe, sustainable and inclusive urban transportation and identify specific requirements of actors (but not limited to local authorities, transport providers and citizens).

Challenges in European Cities

In this section, the main challenges collected and identified by the 12 pilot cities via focus groups (1 per city) and co-creation workshops with over 200 participants of different user groups, based on the frequency they were reported are presented.

1. **Safety:** Streets close to the city centre that are considered unsafe, especially for women, traffic jams that often result in accidents, making the central streets not safe for pedestrians, cyclists or other types of micro-mobility. The feeling of safety affects mobility.

2. **Vitality:** Need to ensure that there are multiple shops, stores and places with many people around during the day and night.
3. **Accessibility:** Main priority for urban interventions in most cities, focus is mainly on the vulnerable to exclusion groups.
4. **Sustainable mobility:** Instead of cars and private vehicles, prioritisation of active mobility and public transport, create a multimodal mobility system for all people.
5. **Infrastructure:** Improvement of infrastructure for active movement increase convenience for the VRUs mobility.
6. **Eliminate car mobility:** From car-centred to human-centred mobility maximisation of active mobility (walking, biking) and public transportation, reduction of noise and air pollution.

To address the above challenges, the criteria presented in the following chapter can be used by the cities.

Criteria for Inclusive Mobility

This section analyses a set of 5 specific and 2 transversal criteria that can be used as guidelines to document and face the above-mentioned challenges. These are based on participatory methodologies developed by Urbana and influenced by the project “Femmes et Ville” (Montreal, 1988) and the work of Col·lectiu Punt 6 (Barcelona, Spain).

1. Safety & Security

- **Physical:** i.e. existence of ramps, good quality pavements or pedestrian crossings, etc.
- **Visibility:** It is important to have visual control of the space and that there are no hidden corners, excessive vegetation, and lack of lighting or high walls that make visibility difficult. Visibility is also promoted by the location of elements on the public space (i.e. benches) that attract people to spend time in these spaces and provide informal surveillance (“eyes on the street” - Jane Jacobs).
- **Hearability:** Hearing and being heard (i.e. in the case of very noisy motorways, is difficult for a pedestrian to be heard in an emergency).
- **Signage:** The presence of necessary signage in the public space helps people to be aware of their surroundings, to have a sense of orientation and to feel safe, even if they are visiting the area for the first time.

2. Accessibility

- **Physical:** Urban or transport design needs to remove physical barriers for people with disabilities, baby strollers etc. (i.e. stairs, bad condition or narrow pavements, lack of ramps, inaccessible vehicles, etc.).
- **Social:** Social accessibility refers to the coexistence of different people in the same space. Although there are no physical barriers in these spaces, if you don't belong to this particular group of people who have heavily appropriated this space, you may not feel comfortable passing by.

- **Financial:** It is important to provide alternative and affordable ways to reach popular places and services. The affordability of the mobility network as a whole also needs to be examined.
- **Digital:** Digital accessibility means providing universal access to pre-planning travel information, without relying exclusively on digital systems and mobile applications that systematically exclude specific social groups such as the elderly, children, migrants, etc.

3. Vitality

A space that promotes the coexistence of different people especially through its mixed uses (i.e. houses, offices, market, social services, playgrounds, street activities, open public spaces, street activities, etc.). Thus, there are people of different ages, from different social backgrounds, using this space for different purposes. A public space with a social life is a place where people feel safer. The presence of activities in the space allows for informal surveillance that increases people's sense of security in feeling cared for by each other. Vitality can be increased by creating meeting places in streets and corners, creating networks of small businesses and local shops on public transport (and underpasses), and by increasing the presence of people in transport stations especially at night.

4. Equipment

Quality, adequacy and maintenance of urban amenities and transport infrastructure are important factors that can affect people's everyday mobility. Examples of urban elements that provide a sense of comfort and care are benches, public toilets, drinking water dispensers, children's play infrastructures, help kiosks (and harassment reporting kiosks), information desks, public wifi, alarm buttons, child care facilities etc. The maintenance should not be overlooked, as if facilities are not well maintained, this can lead to discomfort and insecurity.

5. Gender & Inclusive Representations

All public representations such as street/station names, signage, advertisements, graffiti, statues and symbols. Images and texts on the mobility network need to be regulated to avoid sexist and discriminatory content. In addition, the symbols used in mobility should be reconsidered (i.e. pedestrian traffic lights, priority seat symbols, pedestrian pavements, etc.) and be modified so as to represent different realities and identities of people. Also rethink the names of transport stations, streets and public spaces to make visible women stories and other social groups will make more people feel well represented and welcome in the urban environment.

6. Operation of the Mobility System (Transversal)

Cities should consider the overall operation of their mobility systems in order to better accommodate the everyday mobility needs and the mobility of care

(adapt timetables and frequency of routes, intermodality, provide night services, public holidays and festivities services, provide demand services in less densely populated areas, etc).

7. Participation of Users and Potential Users (Transversal)

In all of the above processes, it is essential to encourage the participation of users and potential users in the design of infrastructure and services, especially people from vulnerable to exclusion groups, and to promote policies and legal frameworks for inclusive participation. It is also essential to raise awareness of gender equality and stereotypes, within the transport sector and public campaigns.

FUTURE WORK: IMPLEMENTATION, EVALUATION AND DISSEMINATION

During the implementation phase, specific interventions will be finalized within the 12 cities. Citizens and stakeholders will engage and participate in a co-production process following the steps of participation: Prepare→ Define→ Create→ Evaluate. In order to fully understand local dynamics and to adapt and use the above criteria properly, each city needs to work closely with its local stakeholders. According to Smith (2000), “Stakeholders are individuals and organisations that are actively involved in the project or whose interests may be positively or negatively affected by the project’s implementation or successful completion”. A stakeholder can be an individual, a group of individuals and/or an organisation. The 5 main categories to be taken into consideration are: Private and public sector, communities, culture/sports, and education/research. ELABORATOR will foster a genuine relationship between citizens and stakeholders via a meet-in-the-middle co-creation approach (Breuer et al., 2014). *Meet-in-the-middle implies looking at the city as a meeting place where the public sector, private interest, and citizens can come together to generate new value, to collaborate and innovate together. Interventions can only be successful if they are brought about by local innovation that bring together all involved actors.*

Therefore, in the context of the Inclusion plan, participatory methodologies from an inclusive perspective will be implemented. The participatory design will be based on equal representation of all local authorities, stakeholders and citizens (especially VRUs) to ensure inclusivity and a high level of engagement through all the phases. The Evaluation and Dissemination phase will follow the steps of traditional before and after studies, where pre-intervention is compared with post-intervention.

CONCLUSION

The proposed Inclusive framework defines the strategies to be followed in all phases of the ELABORATOR project to guarantee inclusion while working for more active and sustainable urban mobility solutions. Through the Inclusion plan, the essential framework of inclusivity is analysed in order to

provide guidelines to be followed through the project. It consists of an analysis of the main issues related to mobility from a gender perspective (which is used as a lens - methodological approach to better understand the needs of more vulnerable to exclusion groups), the methodological framework with co-creation tools, participatory methodology and evaluation criteria for inclusion, as well as a list of inclusive vocabulary as a common language for communication and promoting equality. ELABORATOR project aims to provide a solid foundation for future efforts in inclusive, sustainable, affordable, and safe mobility solutions. Derived recommendations via the plan highlight the aspects of a fair transition from car-centred to people-centred mobility, fostering a perspective that focuses on the daily realities of vulnerable to exclusion groups across Europe and beyond.

ACKNOWLEDGMENT

This work is a part of the ELABORATOR project funded from the European Union's Horizon Europe R&I programme under grant agreement No 101103772.

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