

A Holistic Approach to Inclusive Mobility under Resilience and Sustainability Goals

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ABSTRACT

In the frame of scientific research, Mobility offers a high number of opportunities for research and innovation, particularly in the present technological era. The UN has launched recently the 17 Development Goals, being the 11th Goal the trigger of this proposal, as it targets cities and human settlements to be inclusive, safe, resilient and sustainable. Thus, objectives like disaster risk reduction, sustainable development strategies, and sustainable transport, have been included as well. Furthermore, important demographic changes in nowadays society, together with the fast and intensive technological development, as well as concerns about new threats and stresses, are leading to new realities. Nowadays, the concept of Resilience has become an important tool to enhance a community's emergency preparedness and response as its impact on sustainability and inclusive mobility is enormous.

Over the last decade, research on community resilience has evolved considerably. Different projects have explored resilience concepts from the perspectives of specific urban contexts, of community elements and services, or even of specific community needs. This assumes that the resilience of a given community aspect or element has a direct relation with the degree of resilience of the community as a whole, regardless of the wide diversity of disturbances that may have impact on it. In line with the notions of non-linearity and complexity, addressing the resilience of an isolated community sub-system does not necessarily contribute towards the resilience of the entire system.

In other words, the community resilience, as a system-of-systems, is much more complex than the sum of the optimal resilience of all its sub-systems. Hence, community resilience requires an understanding of interdependencies and operational conditions of the entire system, but that research is far from being adequately achieved yet. Furthermore, resilient communities should be supported by resilient transport systems.

This holistic approach relies on resilience and sustainability as overarching concepts to develop an integrative project taking into consideration the principle of promoting inclusive mobility within the scope of flexible solutions that adjust to the continuous dynamic of communities. This represents an integrated perspective of the work towards inclusion under safety, sustainability and resilience conditions.

Being more-or-less dependent, mobility challenged people need accessible, comfortable and safe transport options to match their mobility needs. Aiming at fitting such needs, the urban environment and transport systems should be targeted under a holistic approach towards an inclusive, safe, resilient and sustainable mobility. Keeping this objective in mind, the project is being carried out under an exploratory phase addressing the development of the main tools:

1. the conceptual framework presiding at the holistic approach and its development,
2. the maturity model, which is necessary to assess the defined maturity stages in order to pave the way towards consolidated achievements.

In addition, the design approach for any new element, infrastructure or subsystem will be defined and developed to operate within the community integrating the technological tools that will be appropriate for the purposes. This is the case of a mobility platform (Mobility on Demand – MOD) to manage the users' transport needs and requests will be developed in the coming years of the project.

Keywords: "Transport"; "Mobility on Demand"; "Inclusion"; "Resilience"; "Sustainability"; "Maturity". "Holistic Approach";