

SUSTAINABLE URBAN MOBILITY FOR SMART CITIES

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This article presents the goals, methodologies, results and conclusions of a research project recently developed in the Territorial Planning and Environmental division of the Faculty of Engineering of Porto University (Portugal). It consists in the settlement of a system of indicators on sustainable urban mobility. It is designed, as a case study, for Porto city (Portugal). These indicators, together with a set of strategies, tools and measures, support the implementation of the “smart cities” concept, thus improving communities’ sustainability and quality of life.

It starts by the characterization of the concept of sustainable urban mobility, founded on the concepts of mobility/public transports, urban sustainability, and life quality, and respective interrelations. It potentially underlies efficient and dynamic policies aimed at managing the transport system, integrating transport and land use planning, favouring the use of different transport modes, reducing the consumption of energy and non-renewable resources, managing traffic; improving public health and safety; and ensuring sustainable social, economic and environmental sustainability, simultaneously stimulating the interchange of experiences and good practices among countries, regions, metropolitan areas and places.

The legal framework at the European level consist in the Green Book – for a new culture of urban mobility; the Action Plan for Urban Mobility; The Strategy Europe 2020 for a smart, sustainable and inclusive development; and the White Book: guidebook of the European transportation unique space – Towards a competitive and resource economical transport system. The Portuguese legal framework consist in the Nacional Strategy for Sustainable Development; the National Program for Territorial Ordering Policy; the Transportation Strategic Plan – Sustainable Mobility; the National Action Plan

for Energetic Efficiency; the National Plan for Renewable Energies; and the National Program for Climatic Changes for the period 2013-2020.

After the characterization of the theoretical and juridical framework, the methodology pursues with the identification of the main sustainable urban mobility tools and measures currently enforced in Porto city (Portugal), and the main indicators of sustainability and quality of life currently used. They refer, namely, to reduction of pollution, use of alternative energy sources, complementary use of different transport modes, and awareness raising for this topic. A discussion is carried out on the relevance of these indicators in order to monitor sustainability and urban quality of life, stressing favourable and unfavourable aspects, and questioning such issues as citizens' freedom and privacy under these "smart city" tools.

Based on this discussion (taking all positive and negative aspects into account), a proposal is, then, presented, to develop a system of sustainable urban mobility indicators, founded on the three main sustainability pillars: environmental, social and economic. It consists, first of all, in the identification of the main topics and corresponding strategic priorities, and, then, in the settlement of indicators aimed at measuring and monitoring specific phenomena, assessing the progress towards respective goal's achievement. Finally are presented the conclusions and possible future developments (both in research and planning practice), considering its strategic importance in policy design and implementation, extending its applicability to other geographical or institutional realities. The topics cover global warming, atmospheric pollution, and resource consumption in the environmental dimension; accessibility, traffic hold-up, and personal mobility the in the economic dimension; and health, accessibility, and community issues in the social dimension.

The development of these kind of indicators is generally applicable to different geographic and institutional contexts, despite the required adjustments. It is necessary to settle the initial framework, and periodically collect appropriate qualitative and quantitative in environmental, social and economic fields. But, most important, is people awareness, commitment and dissemination of good practices that triggers sustainability and quality of life of human settlements wherever.

Keywords: Mobility; sustainability; quality of life; indicators

Synopsis:

This article proposes the settlement of a system of indicators on sustainable urban mobility – within the European and Portuguese legal framework - that supports policy design and implementation of the “smart cities” concept, thus improving communities’ quality of life and sustainability in economic, social and environmental fields.