

Potential of Detailed Environmental Data, Produced by Information and Communication Technology Tools, for Better Consideration of Microclimatology Issues in Urban Planning to Promote Active Mobility

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Abstract : Climate change mitigation has been formally adopted and announced by countries over the globe, where cities are targeting carbon neutrality through various more or less successful, systematic, and fragmentary actions. The article is based on the fact that environmental conditions affect human comfort and the usage of space. Urban planning can, with its sustainable solutions, not only support climate mitigation in terms of a planet reduction of global warming but as well enabling natural processes that in the immediate vicinity produce environmental conditions that encourage people to walk or cycle. However, the article draws attention to the importance of integrating climate consideration into urban planning, where detailed environmental data play a key role, enabling urban planners to improve or monitor environmental conditions on cycle paths. In a practical aspect, this paper tests a particular ICT tool, a prototype used for environmental data. Data gathering was performed along the cycling lanes in Ljubljana (Slovenia), where the main objective was to assess the tool's data applicable value within the planning of comfortable cycling lanes. The results suggest that such transportable devices for in-situ measurements can help a researcher interpret detailed environmental information, characterized by fine granularity and precise data spatial and temporal resolution. Data can be interpreted within human comfort zones, where graphical representation is in the form of a map, enabling the link of the environmental conditions with a spatial context. The paper also provides preliminary results in terms of the potential of such tools for identifying the correlations between environmental conditions and different spatial settings, which can help urban planners to prioritize interventions in places. The paper contributes to multidisciplinary approaches as it demonstrates the usefulness of such fine-grained data for better consideration of microclimatology in urban planning, which is a prerequisite for creating climate-comfortable cycling lanes promoting active mobility.

Keywords : information and communication technology tools, urban planning, human comfort, microclimate, cycling lanes

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