Proximity Planning Modelling: Innovations, Trends, and Future Challenges in the "15-Minute City" Model

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The 15-minute city concept has recently emerged as a fundamental design paradigm in several urban and spatial policy strategies. Unsurprisingly, the pandemic lockdowns exacerbated this situation by compelling residents to reacquaint themselves with their local surroundings. The reconfiguration of the urban system, encompassing time, space, and activities, with a focus on enhancing the quality of life, urban health, and overall well-being, shows great potential in cities where essential services and destinations such as work, housing, urban facilities, amenities, food, health services, education, culture, and leisure activities are conveniently reachable within a 15- or 30-minute walking, cycling, or public transportation commute. This strategy is essential for resolving daily intricacies, including all actions pertaining to auto-centric regulations, reducing air pollution, noise, and heat island impacts, as well as promoting green spaces and physical activity.

To enhance the 15-minute city model, it is helpful to incorporate the following elements: i) Utilise diverse urban methodologies and strategies to plan for proximity. ii) Implement Smart Cities network technologies like digital twins, Internet of Things (IoT), and 6G. iii) Employ configurational analysis techniques to study cities. iv) Utilise computational analyses to model and create sustainable cities.

In order to effectively implement the concept of the 15-minute city, it is essential to develop a comprehensive approach that encompasses transportation planning, urban design, and governance. This approach aims to provide well-designed public areas and streets suitable for walking, cycling, and mixed use projects.

The purpose of this session is to encourage discussions on the 15-minute city, focusing on its concept, morphological approach, structure-function models, its computational, analysis, and application in urban planning. This objective is not restricted to these topics.

Keywords:
15-minute city; proximity; street network configuration, computational analysis, urban morphology, urban dynamics, data-driven analysis; digital twins; walkability and cycling