




Advances in Public Transport Platform for the Development of Sustainability Cities

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1. Introduction

There is high and varied mobility in modern societies which requires a complex transport system that adapts to social needs and guarantees the movement of people and goods in an economically efficient and safe way. All this designed from the new perspective of environmental wellness and of the sustainability paradigm. From this viewpoint, an efficient and flexible transport system that provides intelligent and sustainable mobility patterns is essential to our economy and quality of life. The current transport system poses growing and significant challenges for the environment, human health, and sustainability. Existent mobility schemes focus excessively on the use of private vehicles which have conditioned the lifestyle of citizens in cities, as well as urban and territorial sustainability.

Transport is an important element of the sustainable development framework due to the growing environmental strain, the associated social and economic effects, and its interconnection with other sectors. The continuous growth that this sector has experienced over the last few years and its foreseeable future growth, even considering the change of trend caused by the current situation of generalized crisis, make the challenge of sustainable transport a strategic priority at local, national, European, and global levels.

2. The Present Issue

This special issue consists of sixteen papers covering important topics in the field of public transportation under the framework of smart cities.

The research community is now turning its attention to different areas such as optimization and prediction [1–5]. As evidenced in references [2,3,5], which have analyzed travel time data to evaluate the performance of a public transport system. Others have focused on the demand for different modes of transportation and interaction among them, including a proposal for minimizing the passengers' waiting times and maximizing the vehicles' occupancy ratios. The use of unmanned aerial vehicles for emergency situations is extensively described in [1] for search and rescue operations, surveillance, disaster monitoring, response to terrorist attacks. Finally, ref. [4] studied the influence of the economy on transportation systems.

Recommender Systems are also commonly used within the framework of transportation for sustainable cities. Hence, references [6,7] focused on offering improved usability and services based on multi-modal door-to-door passenger experiences to increase engagement. Other examples can be found in reference [8], where recommendation systems are designed to improve the passengers' experience and the drivers' profit. Finally, other approaches focused on educating the general public about this topic [9].

Other topics included in this special issue are energy consumption forecasting in sustainable cities [10] as well as the analysis of energy trading and the development of a trust model [11]. Security is also an important issue within public transportation, in reference [12] the secure management of railway transportation systems has been analyzed.



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Finally, analytical models using Machine Learning and Deep Learning have been explored as part of this special issue [13,14]. Also, two case studies, carried out in the city of Barcelona, Spain [15] and Taipei, Taiwan [15], have been described.

3. Conclusions

This special issue has paid attention to all the research approaches that focus on the relationship between the evolution of transportation and the new perspective of achieving environmental wellness and efficiency, which has become one of the cornerstones of sustainability. It revolves around producing, consuming, and transporting people and goods better, while using up fewer resources and having lower environmental impact.

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