Editorial

Nikolaos F. Matsatsinis

School of Production Engineering and Management,
Technical University of Crete,
University Campus, 73100 Chania, Greece
Email: nikos@ergasya.tuc.gr

The mobility of societies and the economic growth of regions have been linked to the availability of means of transport and to their combination and coordination. Especially, last decades the continuing trend of market globalisation, technological modernisation and regions urbanisation led either to the consolidation of routes either to expansion of corridors, both of intercontinental and international scope and on a national, regional and local scale. It is noteworthy that the decisions on new routes or rerouting is many times too complicated, coinciding with the strong impetus for any change provided by the onset of the industrial era. Therefore, while the phenomenon of intermodality did play an increasingly prominent role in transport activities, as each mode reached higher levels of speed, flexibility and technical efficiency, in stark contrast to the inertias that had existed in the characteristic transport system of the pre-industrial era.

Transport plays a crucial role in economic and social development and its contribution goes beyond what is normally captured in traditional cost-benefit analyses. The future of transport in the last century depended on efficient and easy intermodal mobility improves the regional accessibility by providing connectivity. The European Commission recognise this and its transport policy focuses on the intermodal transport, which is seen as a sustainable mobility solution, environmentally friendly and efficient in terms of resources and overall cost. These impacts are essential for the funding of new transportation infrastructures that can have large long-term economic, social and environmental impacts. The complexity of such problems, including the different aspects that should be considered during the evaluation process, justifies the development of decision support tools and methodologies. These approaches can study decision related to the development of intermodal transport, investments and project financing in infrastructures, development of hubbing systems, etc.

This special issue entitled 'Management and decision making in transport' focuses on recent advances regarding the decision support in strategic planning, business development, and economic contribution specifically related to intermodal transport. The special issue has been prepared on the occasion of the 1st International Transport Conference, organised by the Department of Economics, Democritus University of Thrace and the Hellenic Operational Research Society (HELORS) and held in Alexandroupolis, Greece, during October 15–16, 2015. The theme of the conference was 'Intermodal transports: innovations in planning, management, business development & decision making' and its discussion agenda included analysis of the implications on the quality and cost of supply chain, covering several areas like operation research tools in planning and management, alliances, brokering/leasing services, development and evolution of hubbing systems, government involvement and public consultation, network

design and optimisation, intelligent transportation systems, intermodal cost/benefit analysis, etc. After a rigorous reviewing process, six papers were finally selected for publication, covering many different aspects of decision support approaches in intermodal transports.

The first paper by Dimitriou, Mourmouris and Sartzetaki examines the economic effects of maritime ports on regional development. The authors emphasise that the international business environment of ports and logistics industry has been changed in the last few decades, while the increase of cargo volume created new requirements and enhanced ports as important gateways of international trade, and major accelerators of national economic development. The presented estimation of economic impact in national scale caused by ports development is based on a quantitative framework that considers both macro-level, in terms of economic growth, and micro-level, in terms of business sector distribution. Based on an input-output analysis, the authors present their estimations for the major maritime ports in Greece.

The next paper by Ballis and Thanou presents a simulation approach to the 'quay-to-shore storage area' container transfer problem. This particular problem refers to the container transfer between the quay and the container storage area and it is of critical importance, given that inefficiency in feeding a quay crane with containers affects negatively the performance of the whole sea-side operation. The paper investigates the parameters affecting the performance of this subsystem and attempts to resolve a contradiction concerning the effectiveness of pooled transfer equipment strategy. The developed simulation model is based on an ideal container berth with an adjacent stack area, where inbound and outgoing container bundling techniques are investigated in combination with pooled equipment strategies. The main results show that when quay is linear, the container bundling is effective when it takes place between quay cranes of the same vessel or even between quay cranes of adjacent vessels.

Developing affordable, economic viable and people-oriented transport systems depends on the use of a comprehensive and integrated approach to policy-making and decision-making. In this context, Roukouni, Vavatsikos, Giannopoulou and Medda present a multicriteria decision analysis (MCDA) evaluation framework for the selection of the most efficient value capture financing mechanism for urban investment on transportation infrastructure. Their approach is based on the analytical hierarchy process (AHP) method, while Monte Carlo simulation is applied in order to study the stability of the obtained results. The applicability of the proposed approach is illustrated through a real-world case study (Crossrail Project in London, UK), and the results may reveal interesting pathways regarding the level of ambiguity and uncertainty of the findings.

The fourth paper by Vavatsikos, Karagiorgou-Papavasili and Giannopoulou develops a residential property market prices estimation framework based on spatial analysis models. Property valuation is considered to be an important research field for significant production factors such as investors, developers, construction companies, etc. Given the spatial nature of the real estate valuation procedures, the authors emphasise the role of geographical information systems (GIS) that may significantly improve the quality of the valuation procedures. In general, GIS-based approaches are focusing on obtaining the most suitable spatial distribution of residential market prices from a set of known estimations. In this context, the authors propose a methodological framework that allows both private and public sector organisations to obtain property price estimations. The proposed framework is illustrated through a real world case study in the city of Xanthi, Greece and the obtained results may offer a valuable decision making tool for real estate

appraisers, investors, and other stakeholders in order to support relevant policy making (e.g., real estate taxation).

The next paper is by Dimitriou and Poufinas, using a quantitative financial analysis, examines the effect of traffic accidents in the income generating capacity of the affected individuals. The authors estimate the cost of the fatalities due to traffic accidents through the income lost as a result of these fatalities. This income is considered for the entire lifetime of the individuals involved, thus leading to cost estimation with the use of insurance-based techniques. This approach resembles the calculation of a pure insurance premium, given that the 'present value' of such income is adjusted for the probability of such an event (death) happening. The papers also presents several future research directions regarding additional economic losses (e.g., cost resulting from partial or total permanent disability, partial temporary disability, hospitalisation or rehab due to traffic accident), prevention measures and policies, further analysis regarding accident parameters (e.g., vehicle type, urban/rural area), and investigations of the additional output generated by road accidents (car repair, insurance administration, hospital treatment, etc.).

The last paper by Dimitriou and Nikolaou analyse road traffic fatalities using global epidemiological data. The main objective of the paper is to evaluate national road safety performances in a socioeconomic and demographic framework. In this context, the authors apply data envelopment analysis (DEA) in order to benchmark different countries in terms of their road safety performance. A preliminary data-driven analysis is also included in the proposed approach in order to identify possible data inconsistencies (e.g., multicollinearity, endogeneity). The obtained results are able to compare different national performances, provide a comprehensive 'picture' of the examined countries' performance in the global scale, and suggest measures and strategies in terms of road safety.

I would like to sincerely thank all the authors who submitted papers. Their contribution has been essential in developing this special issue. I would also like to thank all the colleagues who worked hard to review the submitted papers. Their support was crucial in assuring the high standards of this special issue.