

## GUEST EDITORIAL PREFACE

# Special Issue on Maritime, Air, Rail, and Public Transport in Europe

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In the context of the 5th International Congress on Transportation Research (ICTR), the Hellenic Institute of Transportation in collaboration with Int. J. of Information Systems and Supply Chain Management (IJSSCM) organize a special issue on maritime, air, rail and public transport in Europe. The International Congress on Transportation Research is a tradition in the field of Transport in Greece enumerating a series of events which are being organized under the cooperation of the research and professional community in the field of transport, with emphasis not only on Greece but also on other countries. The transportation field is one of the most developing sectors in Europe and this explains and justifies the relevance of the proposed topics to current international research. The main objective of this special

issue is to contribute to the dissemination of original and high-quality research work presented to 5<sup>th</sup> ICTR regarding the development and/or application of information systems and supply chain management of maritime, air, rail and public transport.

Five interesting papers are published in the current special issue. The main objective of the first paper is about airports environmental management and presents the results related to key components of the environmental plans that have been adopted in eight European regional airports. Key issue of the research is to investigate the differences and common practices in applied environmental strategies and systems. Even though most of the airports recognize the need to specify an environmental management strategy, not many regional airports have

set specific targets about their environmental performance. Airports that serve more than five million passengers per year seem to have a more detailed environmental strategy; airports located in countries that do not have applied specific sustainable development strategies focus on facilitating growth, rather than taking measures to control their environmental disturbance.

The second published paper presents a novel multi-level hierarchical approach which models carrier interactions in international maritime freight transportation networks. Ocean carriers, land carriers and port terminal operators are considered. Port terminal operators, providing transportation services within a port complex, are regarded as a special type of the carrier, based on their behavior. The carriers make pricing and routing decisions at different parts of the multimodal network, having hierarchical relationships. Ocean carriers are regarded as the leaders in a maritime shipping market. Port terminal operators are the followers of ocean carriers as well as the leaders of land carriers. The individual carrier problem is formulated at each level using Nash equilibrium to find the optimal service charge and routing pattern for which each carrier obtains the greatest profit. Interactions among different types of carriers are captured in a three-level model.

It is internationally observed that the environmental questions concerning ports gain continuously the attention of their administrations. This comes as a result of pressures that are mainly exercised from the legislation, the market and the society itself that, as a whole, show continuously higher interest for the environmental issues. The aim of the third paper is to point out the need for an integrated environmental management of ports, to highlight the preconditions for the management of port environmental consequences through the development of appropriate Environmental Management Systems, to summarize and discuss the Hellenic reality concerning this issue and present a set of appropriate procedures and

measures which could lead the Hellenic ports to the total environmental management in a cost-effective way.

The forth research paper investigates the passengers' level of satisfaction from the use of diverse public transport systems. The aim is to uncover factors that drive their modal choices and to assess the quality implications of the variability of the users' perceived satisfaction through the use of two statistical methods and comprehensive diagrammatic techniques. Five transit systems in the two major cities in Greece, Athens and Thessaloniki, have been examined. The analysis demonstrated that the most important satisfaction attributes are service frequency, followed by waiting conditions and network coverage, punctuality and in-vehicle transport conditions. A gender-based market segmentation analysis provided further insight into the differences among groups of the population. According to this analysis, female respondents tend to place their attention on punctuality, waiting conditions and driver behavior, while male respondents on in-vehicle transport conditions and the existence and quality of transfer information.

Finally, the last paper of this special issue the main known exact and heuristic solution approaches and algorithms for the symmetric Traveling Salesman Problem (TSP), published after 1992, are surveyed. The paper categorize the most important existing algorithm to 6 main groups: i) Genetic algorithms, ii) Ant colony methods, iii) Neural Methods, iv) Local search algorithms and Tabu search, v) Lagrangian methods and vi) Branch and bound and branch & cut algorithms.

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