MARITIME NETWORKS, SPATIAL STRUCTURES AND TIME DYNAMICS

Edited by Cesar Ducruet
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The book "Maritime Networks, Spatial structures and time dynamics" is a collective volume edited by Dr. Cesar Ducruet, who is a distinguished researcher in the field of maritime transport. Maritime transport is one of the most ancient supports to human interactions across history and it still supports more than 90% of world trade volumes today. The evolving connectivity of maritime networks is of crucial importance to port, transport, and economic development and planning. The way that ports, terminals, but also cities, regions, and countries, are interconnected through maritime flows is not known in a comprehensive context and is difficult to represent, model, and measure, even for the transportation actors themselves. Within this framework, there is a strong and urgent need for a review of the relevant theories, concepts, methods, and sources that can be employed for the study and the analysis of maritime networks.

The book is composed by contributions from reputable scholars from all over the world and it investigates the analysis of maritime flows and networks from interdisciplinary angles, which range between archaeology, history, geography, regional science, and economics to mathematics, physics, and computer sciences. Built on a vast array of methods, such as Geographical Information Systems (GIS), spatial analysis, complex networks, modeling, and simulation, it addresses several crucial issues related with port hierarchy, such as route density, modal interdependency, network robustness and vulnerability, traffic concentration and seasonality, technological change, and urban/regional economic development.

The book examines new approaches about how socio-economic trends are reflected (but also influenced) by maritime flows and networks, and about the way this knowledge can support and enhance decision-making in relation to the development of ports, supply chains, and transport networks in general. In terms of structure, it includes 20 chapters that are separated into four sections; the first includes chapters 1:4 and is an introduction to maritime network analysis, the second one includes chapters 5:9 and covers topics of modeling past maritime networks, the third includes chapters 10:14 and deals with the topology and spatial distribution of maritime networks, and the fourth includes chapters 15:20 and deals with maritime networks and regional development.

Although the book can be considered as including an integrated approach in the study of maritime networks, the Editor already elaborates new avenues of further research, to be available in future editions, on topics concerning the comparability of network structures and dynamics between different historical periods, the deeper exploration of intermodal networks involving shipping (e.g. short sea/Ro-Ro and road, container/rail), a more detailed research about technological diffusion through shipping networks (from sail to steam, steam to oil, containerization), and the impact of the COVID-19 pandemic on global network structure and port systems.

The book "Maritime Networks, Spatial structures and time dynamics", Edited by Cesar Ducruet, is an ideal companion to those interested in network analysis of transportation and economic systems, in general, as well as in the effective ways to analyze large datasets to answer complex issues in transportation and socio-economic development. A limited free version of the book is also available in a Google-books form (at the URL: https://books.google.gr/ books?id= 0u2oCgAAQBAJ&printsec= frontcover&hl=el&source= gbs_ge_summary_r&cad= 0#v= onepage&q&f= false, to be used without intermediate spaces).

Overall, the book promotes the interdisciplinary way of thinking in maritime research and within this context it can be considered as a reference work for regional scientists, geographers, economists, engineers, and other scholars activating in maritime research.

Book Review by Dimitrios TSIOTAS, Ph.D., RSI J