
Editorial

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This special issue of *International Journal of Shipping and Transport Logistics* is dedicated to the Annual IAME Conference 2011 which took place in Santiago de Chile from October 25th to 28th. The academic event was organised by the Transport Research Institute (TRI), Edinburgh Napier University, and ITMMA, University of Antwerp, and hosted by the United Nations Economic Commission for Latin America and the Caribbean (UN-ECLAC). The conference attracted over 170 participants from 38 countries and 116 presented papers from 250 received abstracts. In addition, an Ibero-America pre-conference session on October 24th provided plenty of opportunity for Spanish speaking scholars to present their latest research results. The conference generated a wealth of interesting papers. The guest editorial team made a selection for this special issue based on the quality of the papers and their contribution to advancing the maritime research field. After several rounds of pre-selection and review, nine papers were finally considered for inclusion in this special issue. While the general conference theme of the IAME2011 Conference was 'shipping markets, port devolution and a changing geography of world maritime transport', we grouped the papers in this special issue under the general theme 'Advancing shipping and seaports in a changing global economic landscape'.

The first paper by Simme Veldman, Lorena Garcia-Alonso and José Ángel Vallejo-Pinto on *port choice modelling* received the Martin Sgut prize for best paper at the IAME 2011 pre-conference Ibero-America session. The prize was introduced during the conference in recognition of the late Capt. Martin Sgut, one of the most respected professionals in his field, to reward research on maritime transport and ports in Latin America and to provide an incentive for research in the region. While transport modelling has a rich history, the use of demand choice models, such as logit models, in studying port choice only took off at the start of the new millennium. The results of the logit models typically show that transport costs and quality of service, combined with specific port profiles, have a statistically significant impact on port choice. The authors build further on their earlier research by expanding existing logit models in a number of ways. First of all, they introduce a two-stage choice function within a nested logit model setting by first considering port groups along a coastline and then looking at the choice between individual ports within the same group. The nested model applied to port choice in Spain reveals itself to be an improvement compared to earlier models. Second, the authors introduce a variable linked to the cargo balance in hinterland transport flows (i.e., imports vs. exports) which is found to have a statistically significant impact on the logit model results. Finally, the authors make a distinction between distance dependent and distance independent components. However, this extension of earlier models did not generate any improvement. The use of the presented logit model, here applied to Spanish ports, can be

useful for analysing container port competition and related port market shares. Its relevance can be further refined by disaggregating input data on container flows by value and type and by collecting disaggregate cost data to better reflect the actual market situation on specific origin-destination relations.

With their paper 'Applying analytic network process (ANP) to rank critical success factors of waterfront redevelopment', Paul Tae-Woo Lee, Jei-Zheng Wu, Kai-Chieh Hu and Matthew Flynn look at a non-cargo related but urban dimension of seaports, i.e., the redevelopment of waterfronts. While a lot of case studies on waterfront (re)development can be found in urban studies and economic literature, this paper particularly looks at the viewpoints of the various stakeholders involved in such a process. The authors successfully apply an analytic network process (ANP) to rank the critical success factors of waterfront redevelopment as identified by decision-makers and stakeholders. Inputs obtained via an extensive questionnaire are used to compare the results of a more traditional analytic hierarchy process (AHP) approach with ANP results. This exercise shows that both techniques lead to different top-ranked criteria. The AHP results underline the importance of the contribution to the regional economy, the transformation of the port/city interface, the efficiency/service of the port, the profitability of waterfront redevelopment and land value. The ANP outcomes point to connectivity, maritime clustering, the transformation of the port/city interface, accessibility and port infrastructure as the most important criteria. Thus, the ANP exercise points to a wide range of economic, port and community functions, while AHP only points to the importance of the first two functions. It is argued that the superiority of ANP is supported by an array of case studies.

The third paper in this special issue looks at yet another dimension of seaport development and competitiveness: the role of corporate agility and perceived price on the service quality – customer satisfaction link in a seaport context. In this original study, Angelos Pantouvakis and Athanassios Dimas not only explore the relationship between service quality and customer satisfaction in the port industry, but also assess port customer satisfaction through service quality, corporate agility and perceived price. To do so, a SERVQUAL model was analysed using exploratory factor analysis (EFA) and a principal component analysis, rotated by a Varimax algorithm. While a commonly accepted definition of corporate agility is lacking, the results indicate that corporate agility as defined in this paper fully mediates assurance/empathy, tangibles and perceived price dimensions on customer satisfaction and partially mediates the reliability/responsiveness dimension. Corporate agility reveals itself to be the most important factor in forming customer satisfaction. Building agility is thus key to seaport managers. The paper also shows that perceived price is positively associated with customer satisfaction, but not in a statistically significant manner.

The fourth paper by Arne Jensen and Rickard Bergqvist discusses pre-emptive defence strategies for seaports as a way to deal with a highly competitive market environment. The focus of their paper entitled 'Seaport strategies for pre-emptive defence of market share under changing hinterland transport system performance' is on container market shares in spatial hinterland market segments. The authors first analyse to what extent the improvement of the performance of road-rail intermodal transport systems and the development of new dedicated port hinterland transport systems through dry ports and direct rail shuttles represent future threats to a port's market share in intercontinental container flows. Next, using key concepts such as sustainable competitive advantage

(SSCA) and market entry ability (MEA), effective pre-emptive strategies are derived to defend the focal port's market share. The methodology deployed in this paper is based on a transport systems framework which integrates cost models and competitive analyses. The concept of SSCA is substantiated by analysing performance in terms of costs, environmental impacts and transit times. The outcomes suggest that leading ports in peripheral regions have to reconsider the fit between their strategies for direct calls, feeder services and hinterland transport systems.

In the last decade, environmental, safety and security impacts and risks are taking an evermore prominent place on the managerial and policy agenda in port and shipping circles. Three papers in this special issue address various sub topics linked to these themes, ranging from clean truck programmes in ports and greenhouse gas emissions by ships to risks in marine oil transport.

The paper 'Clean trucks in California ports: modelling emissions policy' by Christopher B. Clott and Bruce C. Hartman discusses the Port of Los Angeles (POLA) Clean Trucks Programme. It is one of the first and most cited, but also controversial, environmental sustainability initiatives around the world adopted to restrict the use of drayage trucks hauling goods to and from port terminal operations. The paper provides a detailed insight into the conflicts and difficulties experienced in putting into place this programme, which sets standards and subsidises upgrades of diesel trucks used for trucking in port areas. The authors contribute to the ongoing discussion by using a game theoretical model to anticipate the effects of potential truck conversion policies. The model takes into account the strategic interaction in the market between owner operators of trucks and drayage firms who hire them, and provides outcomes on the probability of truck upgrading, using parameters on freight rates for the drayage operators, wages for the owner-operators, and the cost of upgrading net after subsidies for each party. The authors conclude that the choice of subsidies, the freight rate and wage costs per TEU, as well as choice of the pollution reduction goal and fee structure, affect the amount of truck upgrading.

Xiaoning Shi, Yi Zhang and Stefan Voss contribute to this special issue with a paper on 'Actions applied by Chinese shipping companies under greenhouse gas emissions trading scheme'. So far, there are no specific emission reduction standards, so the authors base their work on possible scenarios for IMO policies. Against the background of possible future IMO initiatives, the authors introduce several alternative carbon trading programmes and suggest the most reasonable programme via the application of mathematical modelling, using an integrated method and cost-benefit analysis to calculate the cost and examine the feasibility. Among the possible programmes, investing in clean development mechanism (CDM) projects of other industries is the most economic and practical and is recommended. The results show that, whatever programmes the IMO would introduce, it is necessary for Chinese shipping companies to get involved early in GHG emissions trading.

The seventh paper presents the work of Yi-Zhou Li, Hao Hu and Dao-Zheng Huang on the development of an effective fuzzy logic model for managing risks in marine oil transport. The maritime transport of oil is subject to risks related to ship collision, grounding, heavy weather, oil spills, ignition and explosion. Many policies are adopted in specific areas to promote the safety of marine oil transport. Fuzzy logic, as a generally accepted method in risk management, suffers from difficulties in determining the membership functions and the inference machine, especially when facing conditions of changing surroundings. To enhance the long-term risk management

of marine oil transport, the authors propose an improved fuzzy logic model, which is able to solve the above-mentioned problems. The improved model can not only help experts to draw an adaptive membership function, it can also add or delete risk factors through the internal database. The model is validated by the comparison of two scenarios of a marine oil transport case. The results reveal that the model has its value in decreasing the response time to external events and increasing the accuracy of risk assessment.

A last set of papers in this special issue relates to short sea and feeder shipping.

Ioannis Koliouis, Panagiotis Koliouis and Stratos Papadimitriou analyse the impacts of transport policy initiatives in their paper on ‘Estimating the impact of road transport deregulation in short sea shipping: experience from deregulation in the European Union’. While extensive research has been done on the impact of road transport sector deregulation on freight rates, security and environment among others, far less insights can be found on how other modes, in particular short sea shipping, have been affected. After applying a linear regression model to measure the effect of the road freight deregulation status of each country on the goods transferred via short sea shipping, the authors conclude that:

- 1 road freight transport deregulation reduces the cargo that is transported via short sea shipping routes
- 2 the decoupling of economic growth and short sea shipping transport is evident
- 3 short sea shipping constitutes an alternative transport means that can solve over-capacity issues faced by road transport.

The analysis also reveals that the demand for short sea shipping services is mainly based on the road transport sector and not on the macroeconomic status of the economy. As such, pricing practices used by the road sector in a deregulated context directly affect the short sea shipping sector and diminish the effect of the incentives given by the EU to sustainable transport modes. The research findings support the idea of directing additional policy resources and priority towards the enhancement of short sea shipping.

In her paper ‘Potential for improvement of feeder vessel capacity utilisation’, Linda Styhre analyses the potential for enhancement of the physical vessel capacity utilisation in feeder shipping, with the aim of reducing the cost per transported unit. She correctly argues that unutilised capacity is a common characteristic of liner shipping, due to difficulties in matching supply and demand and the existence of only weak incentives for shipping lines to rid themselves of the excess capacity. The paper examines capacity utilisation in feeder shipping in two geographical regions, Northern Europe and Japan. Information exchange, difficulties in matching capacity demand and supply in transport chains, and demand structures are considered as the main areas affecting feeder vessel capacity utilisation. Improvement measures are proposed and categorised into six factors: improvement measures related to market factors, customer factors, port factors, surrounding factors, management factors and vessel factors. It is demonstrated both shipping companies and shippers can benefit from the enhancement of vessel capacity utilisation. Furthermore, society gains from sustainable and attractive shipping services with an adequate level of vessel capacity utilisation and an associated reduction in environmental footprint.

We hope that the readership of the *International Journal of Shipping and Transport Logistics* will enjoy and benefit from this selection of the best papers presented at the IAME 2011 Conference.

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