GPRA 2015

Global Port Research Alliance
Conference on "Port and Logistics Connectivity"

Academic Session B1: Sustainable Transport Management

- **Date: 21 May 2015**
- **Time: 4:15pm – 5:45pm**
- **Venue: R1205, R Core (Shirley Chan Building), PolyU**

With increasing shipping related activities, concern has been given to the environmental impact brought by ports. This session consists of three studies to investigate sustainable transport management in the shipping industry:

- The first study presents a typology of green instruments and tools applicable to a terminal concession setting. This paper consists of four main parts: (1) presents theme setting and conducts literature review on green port management and terminals concessions, (2) introduces the green toolbox and assesses the existing instruments and tools, (3) presents the evaluation framework and application thereof, and (4) provides managerial and policy recommendations.
- The second study uses carbon footprint analysis and gray relational analysis to determine energy saving and CO2 reduction strategies for shipping companies and terminal operators. Carbon footprint analysis is firstly employed to calculate the CO2 emissions per container of two different container terminal operating models. Gray relational analysis is then conducted to determine the ranking order of different container terminal operating models based on the green port assessment criteria of working time efficiency, energy consumption, and CO_2 emissions.
- By using the port of Incheon as a case, the third study intends to evaluate the environmental impact of the developing liquefied natural gas (LNG) bunkering facilities and providing bunkering service at a port. The authors employ a life cycle assessment approach to compare conventional and new bunkering technologies. Environmental impacts/emissions pertinent to LNG bunkering processing and infrastructure development are captured and their relative importance is determined.

Session Chair: Prof. Young-Tae Chang, Inha University

Title	Author(s)
Green concession agreements in seaports: possibilities and limitations	Theo Notteboom (Dalian Maritime University & University of Antwerp), and Jasmine Siu Lee Lam (Nanyang Technological University)
Operating strategies of CO2 reduction for a container terminal based on carbon footprint perspective	Yi-Chih Yang (National Kaohsiung Marine University)
Environmental impact of providing LNG bunkering service at a port	Young-Tae Chang and Marina Maternovskaya (Inha Unviersity)

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Academic Session B2: Service Quality in Shipping and Port

- **Date: 21 May 2015**
- **Time: 4:15pm – 5:45pm**
- **Venue: R1206, R Core (Shirley Chan Building), PolyU**

Shipping is a service industry. Service quality is an essential factor in determining success companies in the shipping and port sectors. This session consists of three studies to discuss service quality:

- The first study aims at proposing a framework to implement Six Sigma in onshore service quality control of shipping operations. Through its implementation in a real test case in a world leading ship line, the proposed framework demonstrates its feasibility in facilitating quality improvement and cost saving in shipping operations.
- The purpose of the second study is to explore the quality function deployment (QFD) in terms of quality evaluation. The house of quality (HoQ) is the major part of QFD framework. The deployment of HoQ is able to identify both customer requirements and technical measures for enhancing quality of high speed vessel service. Empirical data was also collected from a leading high speed vessel operators in Taiwan to illustrate the service quality assessment.
- The third paper proposes a three-dimensional model to prioritise the attributes of port service quality (PSQ) by introducing a new dimension so-called "goal difficulty" into port service contributory improvement index, which consists of the 'composite satisfaction index' derived from Kano's model and the 'standardised weight' derived from IPA, respectively. The model facilitates port managers to efficiently allocate their limited resources to prioritise PSQ improvement and to optimise port service users' needs.

Session Chair: Prof. Zaili Yang, Liverpool John Moores University

Title	Author(s)
Six Sigma in Onshore Service Quality Control of Shipping Operations	Zhuohua Qu, Ian Jenkinson, Jin Wang, and Zaili Yang (Liverpool John Moores University)
Service Quality Assessment in High Speed Vessel Operator: An Empirical Study in Taiwan	Sheng Teng Huang, Yi Ting Tzeng, Kuo Chung Shang, Chien Min Su (National Taiwan Ocean University), and Ay Shiou Chiou (Ming Chuan University)
A Three-dimensional Model for Prioritizing Attributes of Port Service Quality	Kai-Chieh Hu and Paul Tae-Woo Lee (Soochow University)