

LITERATURE SURVEY ON TRAFFIC AND CAPACITY ANALYTICS FOR MAJOR PORTS

Domain: Data Analytics

Team ID: PNT2022TMID29671

Batch no: B93A5E

Team members: Kalpanaa VM[513119106036]

Krithika PG[513119106047]

Elangovan R[513119106020]

Deva Shanmuga Priyan A[513119106020]

Paper 1: A systematic Analysis of Port Capacity Literature: Trends and Future Research Avenues

Publication year: 31 January, 2021

Author name: Secil-Guelmez

Journal name: Journal of maritime transport & logistics

Summary: The continuous growth in the world economy, technology, and the population still shapes the industrialization patterns. This massive progress has also shaped the international transportation requirements. Ports, as the one of the important infrastructure in international transportation and supply chains, have been pushed by these changes in terms of structuring their capacities to satisfy the demand. To do this, this study adopted a systematic literature review and content analysis together. The result of this study showed that the most attractive topics are service level and performance in main category.

Paper-2:Performance analysis of major ports in India: A quantitative approach

Publication year:January ,2016

Author name: Anindita-Mandal

Journal name: International Journal of Business Performance Management

Summary: The paper examines the performance of 13 major ports of India in respect of key operational performance indicators. Following rapid economic growth India's share in international trade is escalating. This puts increased pressure on these ports, which handle a substantial portion of the trade to perform with optimal efficiency. The study presents a systematic analysis of different performance indicators for a 10 yr time period (2003 to 2013) using a variety of statistical methods and evaluates status of each port in different categories of performance.

Paper 3:Analytics for Decision Making at Ports

Publication year: October ,2015

Author name: Mrinal Kumar Dasgupta

Journal name: publishing India

Summary:Ports serve as an important link in global supply chain. The Indian Union has endeavoured to invest on major ports of the country to meet up to the global standards. The major ports lost its share to the minor ports under the state governments. This paper an attempt has been made to identify the dimensions of port performance and the causality between the dimensions. It chooses to take average turn runtime (ATRT) as an indicator of port performance. The paper proposes an analytical framework to identify the causality that would aid the decision makers

Paper-4:Towards Analytics-Enabled Efficiency Improvements in Maritime Transportation: A Case Study in a Mediterranean Port

Publication year: 21 June ,2019

Author name: Pierluigi Zerbino

Journal name: Department of Energy, Systems, Territory and Construction Engineering

Summary: The current digitalization trend, the increased attention towards sustainability, and the spread of the business analytics call for higher efficiency in port operations and for investigating the quantitative approaches for maritime logistics and freight transport systems. Process mining enabled enhancements in the overall export time length, which might improve the vessels' turnover and reduce the corresponding operational costs, and supported the potential re-design of performance indicators in process control and monitoring.

Paper 5:Dimensions of the Port Performance: A Review of Literature

Publication year: 25 August ,2020

Author name: Bucak, U., Basaran

Journal name: Journal of ETA Maritime Science

Summary: The port performance has frequently been studied in the academic literature, and the first studies on the subject are focused on financial or operational dimensions. However, today, port performance has become multi-dimensional due to the changing roles of the ports to its stakeholders, and the fact that local competition has been replaced by global competition through continuously developing routes, etc. Within this study, it is aimed to determine each dimension of the port performance concept which had been handled as a multi-dimensional process in recent years in literature. So, the concept of port performance had been divided into four basic dimensions which are operational, financial, sustainable, and logistics.

Paper 6:Condition Monitoring of Rail Transport Systems: A Bibliometric Performance Analysis and Systematic Literature Review

Publication year: 6 July ,2021

Author name: Rafal Melnik

Journal name: application of sensors in transportation in context of logistics

Summary:Condition monitoring of rail transport systems has become a phenomenon of global interest over the past half a century. The approaches to condition monitoring of various rail transport systems especially in the context of rail vehicle subsystem and track subsystem monitoring—have been evolving, and have become equally significant and challenging. The evolution of the approaches applied to rail systems' condition monitoring has followed manual maintenance, through methods connected to the application of sensors. The journal is to provide an essential overview of the academic research on the condition monitoring of rail transport systems.

Paper 7: Measuring the capacity of a port system: A case study on a Southeast Asian port

Publication year: May 10, 2013

Author name: Jason Bryan, Salminen

Summary: As economics develop and trade routes change, investment in port infrastructure is essential to maintain the necessary capacity for an efficiently functioning port system and to meet expected demand for all types of cargo. However, these large-scale, expensive investments in long-term infrastructure assets must be made despite a variety of future uncertainties that may potentially influence a port's performance. By using a southeast Asian multi-purpose port as a case study, this thesis paper enhances the investment decision-making process for port infrastructure through the successful application and modification of two existing methodologies and the development of both an investment tool and a framework for selecting an optimal investment strategy to address capacity constraints within a port system.

Paper 8: A Study on the Comparative analysis of Port Competitiveness Using AHP

Publication year: June 2014

Author name: Sung-woo Lee, Ju-mi Song

Journal name: International Journal of Maritime Affairs and Fisheries

Summary: Addressing change in the global sea transportation system in 21st century such as the introduction of “Hub and Spoke” systems, ports across the world have been respectively making various efforts to take the lead in playing their roles as regional hub ports. Considering this change, this research is attempting to find newly rising factors impacting on port competitiveness, especially focusing on the factors that reflect strategic investment in terms of port policy through comparing major container ports throughout five continents including North America, Indian Sub-continent, and Greater Asia.

Paper 9: Concentration analysis of container terminals in India

Publication year: July 29, 2021

Author name: K. Chandrasekhar Iyer, V.P.S.N. Nanyam

Journal name: Maritime Transport Research

Summary: The container terminals of India have experienced an increase of 46% over the past five years, with an increase of 9% year-on-year since 2015. In case of container terminals, the modernization of equipment and digitalization of processes have been initialized to exploit the underutilized capacity, thereby resulting in increased utilization of container terminals throughout the country. The present study analyses the concentration and deconcentration tendencies of the container terminals of India through empirical analysis, utilizing

concentration ratios, Herfindahl Hirschman Index (HHI) and the share-shift analysis (SSA) on the container over the period of 2015-2019.

Paper 10: The Balanced Theory of Port Competitiveness

Publication year: April 2016

Author name: Douglas N.Hales, Young-Tae Chang, Jasmine Siu Lee Lam

Journal name: Transportation Journal

Summary: Due to weakening demand since the 2008 global recession, ports have had to reconsider how to compete differently to attract new business and new investors. Extend literature mainly focuses on either customer competitiveness or investor competitiveness. This study develops a new model of port competitiveness that simultaneously considers the effect of port strategy on customers and investors. This model is referred to as the “balanced theory of port competitiveness.”