

PORT SELECTION USING ANALYTIC HIERARCHY PROCESS WITH PERFECT CONSISTENCY

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ABSTRACT

The Analytic Hierarchy Process is used for port selection, along the East-West trade route from the perspective of a shipping company. Six criteria and eight ports are identified. The hierarchy of the problem is constructed and pair-wise comparisons of the elements of each level are made using a nine-point Likert scale. A questionnaire was designed to suit to a newly proposed Analytic Hierarchy Process procedure which contributed to reducing the number of pairwise comparisons and establishing perfect consistency of all matrices. The current results show that cargo volume and port infrastructure are the most important criteria, thus reflecting the dynamic nature of the container shipping market and addressing the need for continuous monitoring of the changes that take place and for corresponding flexible port management plans capable of accommodating the consequences of such changes in order to keep their market share. Based on these criteria the ports were ranked.

KEYWORDS: *Port Selection, Shipping Companies, The Analytic Hierarchy Process, Perfect Consistency*

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