

17th Meeting of the EURO Working Group on Transportation, EWGT2014, 2-4 July 2014,
Sevilla, Spain

Port Cooperation Policies in the Mediterranean Basin: an Experimental Approach using Cluster Analysis

Fancello Gianfranco^{a,b}, Pani Claudia^a, Serra Patrizia^{b,*}, Fadda Paolo^{a,b}

^aDICAAR, University of Cagliari, via Marengo 2, Cagliari 09123, Italy

^bCIREM, University of Cagliari, via San Giorgio 12, Cagliari 09124, Italy

Abstract

The great potential of the Mediterranean area, as yet not fully tapped due to the lack of the integrated management of its ports, calls for innovative management policies for achieving competitiveness within the Mediterranean port system. To this end, the current regime of intra-port competition has proven highly unproductive and needs to be rethought, implementing new cooperation policies.

The aim of this study is to identify, by means of traditional clustering techniques, homogeneous groups of ports within the Mediterranean region. In so doing, it would be possible to propose new cooperation policies between ports of the same cluster, but also between different clusters, on the basis of their specific features. A data set has been created for 34 major Mediterranean container ports. Relations between ports have been evaluated from a quantitative perspective through traditional statistical techniques: hierarchical cluster analysis based on the Ward method. Different sets of homogeneous ports have been obtained alternating different combinations of input variables and varying these over suitable ranges, in line with the assumed cooperation policies. The findings provide the basis for exploring the strategic functional relationships among ports, in order to promote collective integrated actions that could prove essential for the competitiveness of the Mediterranean port system.

© 2014 The Authors. Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/3.0/>).

Selection and peer-review under responsibility of the Scientific Committee of EWGT2014

Keywords: Cluster Analysis; Port Cooperation Policies; Mediterranean Port System.

1. Introduction

Historically, the Mediterranean Sea has played a key role in the development and growth of Southern European, North African and Asia minor countries. Moreover, the widening of the Suez Canal has, over the years, consolidated the strategic role of the Mediterranean also for East-to-West transoceanic routes. However, this potential is hampered by the limitations imposed by the lack of a management and organizational policy of the Mediterranean

* Corresponding author. Tel.: +39 070 6755267; fax: +39 070 675 5267.

E-mail address: pserra@unica.it

port system as a whole, which has led to the slow, but progressive decline of competitiveness of its ports to the advantage of North European ports in particular. In this context, the current intra-port competition regime impedes achievement of a common policy, resulting in limitations associated also with the strong fluctuations in the shipping market and the dwindling profit margins. Establishing spontaneous and synergistic collaboration between ports through cluster policies could be a lever for recovery throughout the entire Mediterranean region. Creating a system comprising numerous ports would enhance overall competitiveness and could be achieved by: (i) traffic sharing; (ii) developing common management policies; (iii) implementing integrated marketing policies; (iv) resource sharing (material, immaterial and human). In so doing the potentiality of the port system as a whole would undoubtedly be greater than that of the single ports collectively.

This work aims to identify, using traditional clustering techniques, homogeneous groups of ports within the Mediterranean basin, determined on the basis of their technical, management, organizational and geographic affinities, such that any cluster strategies can be based on real intra-port synergies and common features. We examined 34 container ports in the Mediterranean. For each port we collected and processed detailed information concerning demand (traffic handled in the 10-year period 2002-2011) and supply (infrastructure, organization and geographic position) characteristics. On the basis of the data gathered and of the pertinent literature examined, we opted for a hierarchical cluster analysis based on Ward's method.

2. The Mediterranean setting

The Mediterranean sea is the natural passage for trade between the Far East (India, China, Indonesia, etc.) and continental Europe. The role of the Mediterranean has strengthened gradually over the last twenty years to become the focal point for international maritime shipping. The drivers of this change can be attributed chiefly to three main factors:

- The change in round-the-world routes due to the ever-increasing size of ships, which has resulted in ships bypassing the Panama canal, has made the trans-Mediterranean route via the Suez canal the privileged freight route for trade with the Far East;
- The economic growth in the Far East and the emerging countries along the North African shores has resulted in an increase in maritime trade along the routes from/to Europe and between the two Mediterranean shores. Between 2005 and 2011 traffic volumes in the Mediterranean hub ports increased by some 44%;
- The incentives granted by EU to short sea shipping, in an endeavor to ease congestion on the roads.

The competitive advantage of Mediterranean ports lies primarily in their geographic position. In terms of transit time this means that supply to European markets from Suez competes very favourably with the North European ports. Thus the Mediterranean basin represents an essential port of call for reaching destination markets as quickly and economically as possible. Notwithstanding this, only 40% of trade volumes for Europe passes through Mediterranean ports, the remainder being bound for North European ports via the Atlantic routes.

The future trend in maritime trade in the Mediterranean over the medium-to-long term will be determined and significantly influenced by a number of factors, that have led to the formulation of more or less prudential estimates, for the different traffic segments. But the general consensus points towards an increase. These factors are: (i) the constant increase of the population along the southern Mediterranean shores, estimated to reach 420 million by 2020; (ii) the growth of Eastern European countries and the role of the Black Sea for connections with them; (iii) the growth of Far East countries and the new trade routes to Europe via the Suez canal; (iv) the coming into effect of the Mediterranean free trade area.

However, one factor that will restrain this growth process is the widening of the Panama Canal, due to be completed around 2014. The opening of the new Canal needs to be associated with the opening of the planned new mega port at Mumbai which together with the Cochin port are the gateways for India's expanding economy towards the Suez Canal. These aspects, together with the fierce competition already existing between the Mediterranean and northern range ports for Europe-bound traffic from the Far East and the American Pacific ports, will be decisive in establishing the future re-balancing of sea freight traffic. In addition, over the last few years Mediterranean ports have begun to compete with one another in the strive to increase their share of traffic. The strongly fluctuating

Download English Version:

<https://daneshyari.com/en/article/1106450>

Download Persian Version:

<https://daneshyari.com/article/1106450>

[Daneshyari.com](https://daneshyari.com)