

**Identification of multimodal freight catchment area of the Greek port of
Patras through truck survey data**

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From the end of the 1960s, when international truck transport made its first steps in Greece, transport to and from the countries of Central and Northern Europe used the route through (the former) Yugoslavia. It is a fact that transit through these countries was not without problems even before 1990, due to the various administrative, financial and quantitative restrictions. The Yugoslav wars of the period 1991-2001 completely stopped the passage of Greek trucks, diverting the traffic to the route through Bulgaria and the multimodal link through the Port of Patras (to Italy and from there to the rest of Europe). The Greece-Italy connection through the Port of Patras was a valuable alternative especially for the southern regions of the country (the first ferry to Italy was launched during 1960). The Yugoslav wars boosted port's traffic, which managed to be upgraded organizationally, to improve the level of service and to reduce the fares in order to retain its competitiveness, even after the end of war and the reopening of the road corridor (in the new states created in the ex-Yugoslavia territories). The aim of the current work is to define the catchment area of the Port of Patras in the Greek territory (at regional level) based on a sample of road freight transport survey data collected by the Hellenic Statistical Authority (ELSTAT).

Due to the significant commercial interest that port hinterland activities have, the literature on the subject includes a wide spectrum of subjects covering competition among ports servicing a common hinterland, enlargement of port's catchment area by use of railway services, door to door services and other logistics advancements, synergies with dry ports and freight villages, impacts on regional development etc. For the purposes of the relevant analysis, data from the road freight survey were used to investigate the effect of the transport distance on national freight transport. The survey of road freight transport has been carried out by the Hellenic Statistical Service and records trucks larger than 3.5 tons, their transport routes and the transported weights. The sample used includes more than 250,000 truck records surveyed during the period 2010 to 2019 in all Greek territory, yet only the truck records of international trips have been utilized.

Figure 1 presents a GIS map of the Greek regions that make use of the multimodal corridor through Patras port to various North and Central Europe destinations together with a Table containing the exact values of the truck trips recorded during the ELSTAT survey. The sample data covers a long period (2010-2019), yet the outcome was proven robust even after a more systematic analysis performed for each individual year. A similar situation is presented in the reverse case (imports from Europe to Greek regions). All regions in Peloponnese are mainly served through Patras port (yet they represent small fraction of the port traffic). The 70% of the trucks originated from Attica region (a more than 3 million inhabitants' area where the Athens city is located) are following the multimodal corridor through Patras port. This multimodal option is also the dominant selection of most truckers in the Central Greece regions. On the contrary, the northern Greek regions are mainly served through the multimodal service of

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Igoumenitsa port or mostly by use of pure-road alternatives. The overall picture confirms the conception of transport experts and professionals that the exports and imports of north Greece to central Europe are performed through the land route of North Macedonia and Serbia while the trucks of the central and south regional units are travelling through the port of Patras. Further work includes a cost comparison between the multimodal and pure-road options aiming to identify the travel-mode choice function and the parameters affecting route selection in the specific route.

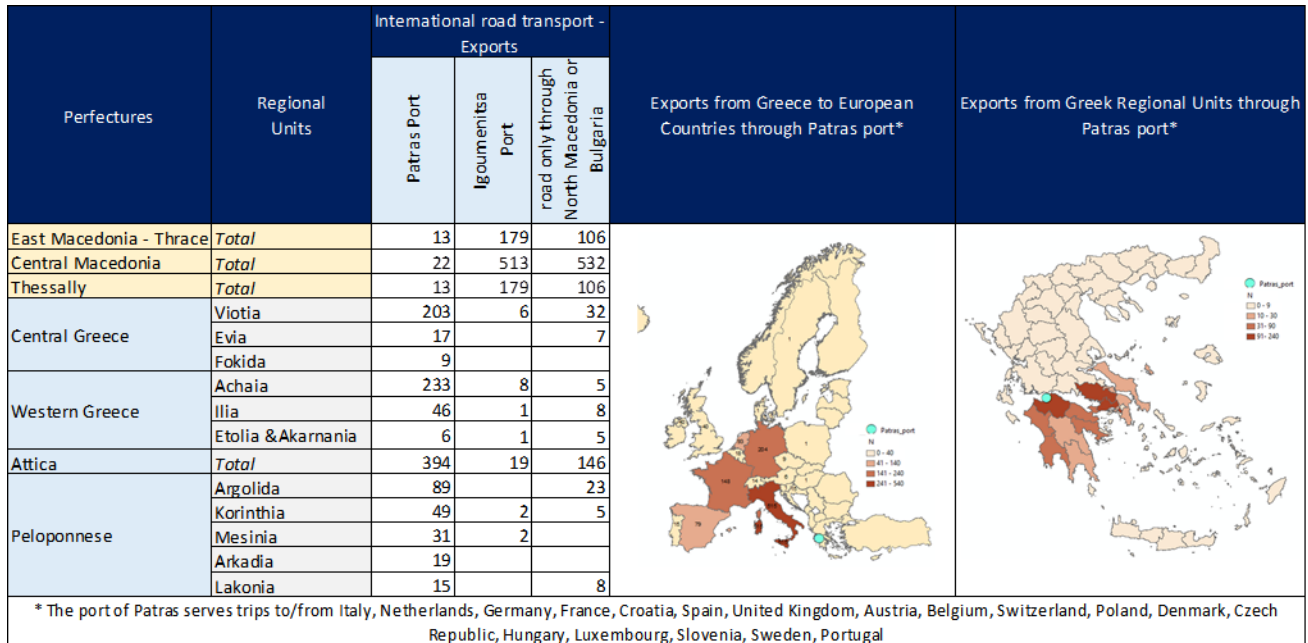


Figure 1: Number of truck trips from various Greek regional units to Europe, indicating the catchment area of Patras Port (based on road survey data of ELSTAT)

The analysis of road survey data of ELSTAT is in its initial states (more detailed data are expected to be provided), yet the early results of the analysis indicate its usefulness for the professional field of transport engineering as for example the justification of the financial return of European funding for the construction of the new Athens-Patras railway line was based partially on potential revenue from the operation of unaccompanied rail / trailer transport (that required the identification of Patras Port catchment area).

Key words: Catchment area; truck survey;

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