Network analysis of the tourism-related activities of the Greek Economy

Topic:
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Tourism is regarded as a main growth engine for the economy of services export-dependent countries such as Greece. The network analysis of the intersectoral input-output relationships and the hierarchical clustering of sectoral activities can support policy proposals on the efficient resource allocation, the enhanced diffusion of growth, the creation of synergies and the broadening of a countryâ€™s productive base. This paper presents an original network analysis of the tourism ecosystem in the Greek economy, taking into consideration recent concerns about its sustainable development and the extent of its local economic footprint. The data used here refer to the most recently available (for year 2015) symmetric input-output table of the Greek economy. This type of quantitative analysis allows us to identify the central (influential) position of tourism-related activities in the whole economic system, between groups and within the group of sectors that is clustered.
The present analysis demonstrated the existence of a handful of well-defined distinct, tightly knit groups (clusters) of major sectoral activity clusters, encompassing those of Services (primarily of the public sector), Trade (including logistics, real estate management and financial services), Construction (including construction activities and related products and services), Tourism, and Energy. The tourism-related activities in the Greek economy are mainly concentrated in Agriculture, forestry and fishery products, Food and beverages, and Accommodation and food services, together with the Services provided by organisations, and the Paper products, printing products, chemicals, and advertising services.
The tourism-related cluster significantly influences (feeds) all the other main sectoral groups of the country, while âˆ’to a lesser extentâˆ’ it is influenced by other sectoral groups (but significantly only by the wholesale and retail trade services, logistics, real estate management and financial services). The latter outcome suggests that major exogenous shocks in the tourism industry group, such as that experienced during the COVID-19 pandemic, would have significant effects on all other groups of sectoral activities in the Greek economy. Besides, improvements in Accommodation and food services and other closely related tourism activities are expected to have a significant spillover effect on the whole Greek economy.
Furthermore, this finding suggest that the Greek economy can be considered as well concentrated around a few sectors, since only 10 of them account for more than the half (51%) of the total strength (weighted degree centrality) of the overall system. Specifically, Accommodation and food services is found to be one of the strongest sectors in the Greek economy (ranked 5th in order), the most outward-looking sector in its own group, and the sector with the highest degree of modality vitality, which represents the ability to maintain the structure of the tourism-related cluster, together with the sectors of Food, Beverages and Tobacco Products, and Agriculture, hunting and related service activities.
Last, for the measurement of the robustness or change in the strength of sectors after an exogenous shock in tourism, the method of the hypothetical extraction of the Accommodation and food services sector from the network of the Greek economy was used. The results demonstrate that almost half of the sectors with the largest change in strength (greater than 10% reduction) belong to the cluster of tourism-related activities, such as Printing and recording media (-26%), Food, beverages and tobacco products (-20%), Services furnished by organisations (-19%), and Fishing and related products and services (-14%).
The present findings verify the potential of linkages and synergies among agrifood, accommodation and food services, and other related (creative) industries through the development of a cohesive policy to enable integration and convergence among these sectors to take place. Specifically, the networking of tourism-related activities, through the development of robustly integrated value chains

âˆ’mainly among the agrifood sectors and the accommodation and food servicesâˆ’ at all stages of production of tradable goods, is expected to activate complementarities and synergies, combining their comparative advantages, and promoting knowledge diffusion and innovative practices.