



Topics on Geography of Transport and Logistics. Introduction

Giuseppe Borruso^a, Marco Mazzarino^b, Marcello Tadini^c

^a Department of Economics, Business, Mathematics and Statistics, University of Trieste, Trieste, Italy

^b Department of Architecture and Arts, IUAV University of Venice, Venice, Italy

^c Department of Economics and Business Studies, University of Eastern Piedmont, Novara, Italy

Email: giuseppe.borruso@deams.units.it

1. Contextualization

The Geography of Transport and Logistics represents to-date a research field particularly stimulating, due to the continuous changes and challenges occurring at all the levels of analysis and with important consequences, both local and global. Reorganization of the supply chains, international crisis led by global pandemics and war scenarios are having effects on economic production and distribution and the logistic and transport systems, as the backbones of such process, are challenged constantly.

The realm of investigation of geography includes the concept of “relation” and, in particular, relations among places, among human activities and among human activities and places are of paramount importance to understand the changes occurring in time and space, that shape the world as we see it around us. This basic concept of geography is particularly related to movement, as people, goods, data, thoughts, ideas move in time and space, contributing to animate the variety of

human landscapes and ways of life in different regions of the world. Movements themselves occur if and when a transport system is involved, as a set of elements that favor such exchange among places and the movement of people, goods, resources, communications, ideas, etc., with ports, in particular, acting as privileged nodes in connecting different scales and with important territorializing effects.

A transport system holds an important territorializing power, consisting of nodes, networks among them, where flows of people, goods, energy, information, etc. run thanks to different transport means and technologies. In such an interaction of places and activities, transport allows a socio-economic system to work and perform, fostering the organization and structuration of the territories (Toschi, 1960; Muscarà, 1982; Lucia, 1990; Vallega, 1997; Soriani and Calzavara, 2016).

Transport as a topic can be generally tackled following a geographical, multi-scalar approach, from the global to the local situations, passing through the intermediate scale. In transport

analysis, this follows, basically, a traditional separation among distances where different transport modes are more efficient, i.e., road transport for the short range, rail transport for an intermediate one, and maritime / air transport for a long distance one (Taaffe et al., 1996; Rodrigue, 2020; Notteboom et al., 2022).

Although such a conceptual separation still holds some elements of adherence to reality, we must observe that, with the introduction of intermodality and with the important and dramatic changes occurred particularly in the most recent years, the traditional modal solutions have been challenged (Vigarié, 1992; Vallega, 1997). In addition, the set-up of a global logistic chain based on low transportation costs and, therefore, the extension of the production system over wider and distant regions of the world, was furtherly questioned, also following geopolitical challenges (Sellari, 2013).

2. A thematic issue on Geography of Transport and Logistics

In this thematic issue, we highlight some of the major challenges and open questions over the topic, with a difficult task of analysis and observation given by the extent of some global processes whose effects and echoes are still ongoing. The global pandemic of Covid-19 that hit the world from the year 2020 and the geopolitical crisis caused by the conflict between Russia and Ukraine from February 2022 are posing serious challenges and questions on the future evolutions of transport and of the regional and global equilibria involved.

As a starting point, we can recall that the current era of globalization is characterized by several challenges and changes, which, as is rooted into geographical research and on transport analysis, can be observed through a multi-scalar approach. Such challenges and changes are putting several doubts on the sustainability – in economic, social and environmental terms – of long logistic and transport chains among different world regions. Carbon emissions from vessels, increasing costs of transport and availability of transport units,

congestion at chokepoints, global pandemics and geopolitical challenges, all of them currently contribute to the need of rethinking and rewriting supply and production chains, with an expected “downsizing” of the connections, from the global to the regional and local ones. In this, reshoring will probably play a major role at least in some industries in allowing sustaining shortened logistic chains, operating in more regionalized manufacturing areas and markets. In this framework, ports as important nodes and interfaces among land and maritime areas are playing an important and changing role at global, regional and local levels. This role has changed considerably, leading, in their evolutions, towards a ‘hybridization’, with reference to the relations among city, port, industry, and the same role of ports at the different scales, with mixed functions. In such sense, the description of these different port configurations brings to an analysis on the evolving role of gateway and transshipment functions, that, with particular reference to the Italian case, shows different roles of Italian container ports in the modern logistics supply chain. Besides, this analysis highlights how these ports can influence the national dynamics of imports and exports and their effects on the potential development of hinterland areas connected.

Together with that, more specific aspects arise and need a thorough observation, as well as the development of new analytical tools and approaches. As a paradox in the consideration of ports as strategic nodes in the global transport system, while their role and performances on the seaside appears quite renowned and measurable, their role relative to the territory seems to be not well addressed by existing analytical approaches regarding multimodal transport networks. Available port statistics usually report seaside transport data, while data about multimodal hinterland connections (inbound and outbound) is scant or simply non-existent. At the same time, land-based origin-destination transport data traditionally does not include port-related information, thus, determining a misspecification of existing land-based transport models. Similarly, the relations between sea and land recall different challenges that go beyond the sole transport and logistic and involve other

important topics, like the development of inner areas and the fight towards carbon emissions, together with, in parallel, the search for renewable energies for transport.

The re-organization of the supply chain has, other than that, several consequences, that span from the relation among ports and inner areas, to the need to correctly quantify carbon emissions, considering the important role of transport as contributing to overall emissions and pollutions. In particular, in the case of Sicily, such a re-organization can help tackle the crisis of inner areas by involving the companies which produce energy from renewable resources (biomethane in the case analyzed) and the logistic companies which use vehicles powered by biomethane. In the proposed case study, the supply chain involves, with the key role of logistics companies, agri-food companies, biofuel production companies and large commercial distribution companies, located partly in inner areas and others in urban poles. Quantifying the emissions produced within different supply chains is a challenging task; carbon-based emissions generated by the logistics sector have a relevant impact on environmental sustainability. In this sense, the estimation of the carbon footprint can be considered as an indicator of the environmental sustainability of logistics processes. After analyzing the different phenomena and challenges, the operational chain of the port system must adopt an innovative approach capable of improving and optimizing the competitiveness and the active and functional activities of the operators involved.

3. Concluding remarks

This thematic issue aims to highlight the current evolving scenario of transportation and logistics systems at global and local level, considering in particular the challenges involving port activities and their relationships with inland areas, as well as in the global scenario. The present thematic issue gathers contributions from geographers on what are perceived as some of the major topics currently

challenging transport and logistics from a spatial point of view. This observation point is often given for granted, acquired and settled, but, on the contrary, presenting challenges, threats, constant changes and risks, with important consequences and territorializing effects on the global, regional and local levels. The suggestions presented here are aimed to stimulate curiosity and foster further research on the topics, also to be extended to the other aspects of the Geography of Transport and Logistics.

References

1. Lucia M.G., *I trasporti marittimi nelle teorie geografiche*, Milan, FrancoAngeli, 1990.
2. Muscarà C., “Maritime trade: the international economy and the planning of coastal regions”, in Muscarà C., Sorcillo M. and Vallega A. (Eds.), *Changing Maritime Transport*, Naples, Istituto Universitario Navale, 1982, pp. 268-274.
3. Notteboom T., Pallis A. and Rodrigue J.P., *Port Economics, Management and Policy*, London, Routledge, 2022.
4. Rodrigue J.P., *The Geography of Transport System*, New York, Routledge, 2020.
5. Sellari P., *Geopolitica dei trasporti*, Bari, Laterza Editori, 2013.
6. Soriani S. and Calzavara A., “Global trends and local and regional factors in the requalification of port-industrial areas”, *Rivista Geografica Italiana*, 123, 3, 2016, pp. 259-280.
7. Taaffe E. J., Gauthier H.L. and O’Kelly M.E., *Geography of Transportation* (2nd ed.), Upper Saddle River, NJ, Prentice Hall, 1996.
8. Toschi U., *Compendio di geografia Economica Generale*, Rome, Cremonese, 1960.
9. Vallega A., *Geografia delle strategie marittime. Dal mondo dei mercanti alla società transindustriale*, Milan, Mursia, 1997.
10. Vigarié A., *Economia marittima e geostrategia degli oceani*, Milan, Mursia, 1992.