

ANALYSIS OF ECONOMIC AND POLITICAL CONDITIONS FOR THE DEVELOPMENT OF INTERMODAL FREIGHT TRANSPORT IN THE CROSS-BORDER AREA

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Abstract

The main purpose of this paper is to identify and evaluate the economic and political conditions for the development of intermodal freight transport in cross-border area, based on example of European grouping of territorial cooperation TRITIA, Ltd. The decision to establish EGTC TRITIA was made by the leaders of the four regional governments of Moravian - Silesian Region (CZ), Opole Voivodeship (PL), Silesian Voivodeship (PL) and Žilina Self - governing Region (SK). Vision of TRITIA is maximising the use of the geographical position of the partner regions for their economic development supported by appropriate development of cross-border transport infrastructure and transport using endogenous potential of the cooperating regions and taking into account the needs of transport accessibility and safety, while respecting friendly approach towards the environment. The PESTEL method was used to study economic and political conditions. The analysis was based on the analysis of strategic documents, regulations and sectoral reports. In addition, several interviews were conducted with key stakeholders involved in the development of intermodal transport. The research is part of a project to create a strategy for the development of intermodal transport for the TRITIA area, implemented as part of the TransTritia project.

Keywords: Cross-border region, freight transport, macroeconomic conditions, PESTEL analysis

1. INTRODUCTION

Negative effects of transport such as pollution, climate changes, noise, congestion on roads and accidents are problems for the economy, health and prosperity of the European citizens. Within the next decade, it is expected that the road cargo transport will increase by ca. 40 % [1]. Now, the EU transport policy is oriented at reduction of road transport towards less polluting and more energy-efficient means of transportation. Significant support of intermodal transport development is key in this case. Note that, gradual removal of barriers, unnecessary differences related technical and administrative standards as well as competition obstacles, such as price policy, taxes and charges, are the part of the process of creating the actual European transport area, covering all types of transport [2]. National government and local self-governments play an essential role in these operations. However, challenges related to cargo transport in Europe depend not only on consistent policy of individual countries but also on specific projects and regulations of cross-border regions. In order to respond to such challenges, the European Grouping of Territorial Cooperation [3,4] TRITIA initiated the preparation of the intermodal transport development strategy for the cross-border region of Czech Republic, Poland and Slovakia. One of the first stages is evaluation of conditions affecting this type of transport. The main objective of the paper is the analysis of political and economic aspects affecting development of intermodal transport within TRITIA area. The studies partially included the PESTEL method that evaluates political, economic, social technological, ecological and legal aspects. Narrowing down the study subject is a result of wide range of operations that go beyond the volume of a single paper. Separate paper presents analyses of social, ecological and technological areas as a partial result of project analysis concerning intermodal transport development strategy within TRITIA area.

2. DEVELOPMENT OF INTERMODAL TRANSPORT WITH CROSS-BORDER REGIONS

The European Commission assumes, in the White Paper on transport system within the European Union to 2050, a transfer of up to 30 % of road cargo transport to 2030 and over 50 % to 2050 to railway or water transport [5]. Dynamic development of intermodal / combined transport is to assist in this matter. Advantages of intermodal transport are unquestionable. As you may read in the literature concerning the subject, intermodal / combined transport makes possible to [6,7,8,9]: reduce transport costs, especially fast and on time delivery of cargo, particularly within international haulage, reduce cargo damage risk, increase of options related to one time delivery of larger batch of cargo, more availability and better quality of transport services, increase of available number of transport options, apply different forms of loading and unloading, limit environment pollution through reduction of exhaust gases emission, reduce noise, etc. However, we need to realize that things perceived as optimum from the system standpoint do not necessarily satisfy companies operating on such market, especially those engaged with road transport. That is why, the following elements have key impact on development of this kind of transport within most of the EU countries:

- road traffic law, which is more restrictive against drivers and trucks within safety, ecology, time of drivers work,
- preferences of forwarders and operators within international transport contracts,
- scope of assistance provided by the state for undertakings related to development of combined / intermodal transport.

The paper focuses on the assessment of intermodal transport development options within cross-border areas. Wide development of European transport corridors necessitates not only the coexistence and cooperation of various transport sectors but also international cooperation, the essential objective of which is the elimination of restrictions resulting from the existence of national borders. This means a wide spectrum of international activities of the administration and self-governments within the scope of cross-border cooperation. Such cooperation is aimed at common projects developing transport infrastructure, eliminating bottle-necks, especially on borders, coherent regulations and rules facilitating smooth flow of cargo, etc. Cross-border cooperation is based on overcoming national borders as social, economic, infrastructural and cultural barriers. It is assumed that cross-border and inter-regional cooperation not only improves flow of cargo or unifies regulations but also strengthens good-neighbourly relationships between the countries, reinforces stability and assures partnership and sustainable social and economic development [10,11]. From this perspective, the cross-border region, from the institutional standpoint, is treated as an organization (entity), that has: specified functioning grounds (political, legal, economic, social and cultural, etc.), defined objective, organizational structure, decision making system, seat and uniformly defined limits, separating the region from the surrounding. In turn, subjective scope of the regions is most often related to characteristics of the geopolitical region, the essence of which consists in the existence of bonds of objective character - international and transnational, concerning the political, economic, social and cultural issues. Geopolitical region is constituted also by relations of subjective character, related to the will of the interested countries and societies to undertake cooperation. Regional cooperation of the countries shows specified dynamics, it may also take the form of international legal and institutional frameworks. One of institutional examples created in Europe is the European Grouping of Territorial Cooperation (EGTC) that has been established in order to facilitate cross-border, supranational and interregional cooperation between member states and their administrations at the regional and local level. EGTC allows the partners to implement common projects, exchange experience and improve coordination of spatial planning.

3. SUBJECT, OBJECT AND METHOD OF STUDIES

The subject of the study is evaluation of political and economic conditions affecting intermodal cargo transport development within cross-border region. The study covered the cross-border area of Poland Czech Republic and Slovakia, concentrated within the European Grouping of Territorial Cooperation - TRITIA. The European

Grouping of Territorial Cooperation (TRITIA (EGTC TRITIA) has been established on 25 February 2013 by the decision of the Minister of Foreign Affairs of Poland No. 1 / 2013 on EGTC TRITIA and entered to the European register of territorial cooperation groupings kept by the Ministry of Foreign Affairs. Decision concerning establishment of EGTC TRITIA has been made in 2009 by the leaders of the following self-governments: Moravian-Silesian Region (CZ), Opole Province (PL), Silesian Province (PL) and Zlin region self-government (SK), based on which the one took steps to establish the Grouping. Decision of the leaders was based on positive experience related to cross-border and interregional cooperation as well as impact of this cooperation on the quality of life of cross-border regions citizens.

The PESTEL method was used for the studies. The analysis is aimed at evaluation of macroeconomic environment of organization, including *Political, Economic, Social, Technological, Environmental, Legal* aspects [12]. The paper is focused on political, legal and economic aspects that affect intermodal transport development in a special way. Without specified policy, legal stipulations and economic solutions, development of intermodal transport would be impossible. The study consisted of three stages:

- Characteristics of political, legal and economic aspects within TRITIA area based on statistical data, legal acts, policy and strategies at the European, national, regional and local level, reports;
- Identification of major opportunities and threats within political and economic field concerning TRITIA areas in the context of intermodal transport development;
- Discussion of the results based on forces field analysis.

The study was based on broad analysis of strategic documents, regulations and reports. Within the second and third stage, one performed an identification and expert's evaluation, which were verified during two workshops with partners from Czech Republic, Poland and Slovakia.

4. POLITICAL AND ECONOMIC CONDITIONS RELATED TO INTERMODAL TRANSPORT DEVELOPMENT WITHIN TRITIA AREA

4.1. Economic conditions

The first aspect of the studies is the economic aspect. The most often analysed issues in this case are: inflation, interest rates, economic growth, unemployment rate, employment policy and business cycle of the state.

The transport sector is the impulse for economic growth and significantly contributes to functioning of economies of all countries, including the cross-border region - TRITIA. The expected GDP growth (from 4-5 % per annum) is driven mostly by a consumption (fixed growth factor), investment (impact conditioned by political situation) and export, as well as impact of the European funds (up to 2020) [13]. This increase has a positive impact on development of cargo transport. However, within all TRITIA countries, it is necessary to increase GDP expenditures on construction and modernization of transport infrastructure with particular emphasis on railway and inland navigation. Within the analysed region, both within recent years and in the forecasts included in strategic documents, one may notice development of transport infrastructure with consideration of its various branches (the greatest current increase was related however to inland road infrastructure). These investments are supported from many sources; national and regional to less extent whereas the major resources are provided by the Union funds. In Poland, the Operational Programme Infrastructure and Environment (2014-2020) [14] uses mostly the Cohesion Fund and supports key infrastructure elements (roads, railway lines and water routes) located along the TEN-T corridors. Within the priority axis 3, it supports road and air transport within TEN-T networks as well as solutions related to sea, inland water and intermodal transport and within axis 4 - within cities, axis 5 - railway transport. In case of regional infrastructure, the Regional Operational Programmes using the resources of the European Fund for Regional Development are the most important. The Connecting Europe Facility (CEF), which is to support investments in construction of new or restoration and modernization of the existing infrastructure, is an important source of funds used for

implementation of the European policy within the scope of transport infrastructure. With reference to sources of funding in Poland, common ground of public financial support for infrastructure is the National Road Fund and Railway Fund. The investment development can also be affected by the public and private partnership projects, if proper cooperation policy between public entities and private partners can be provided. Now, we need to underline that the risk related to financial support of this type of investment is significant, especially when it comes to long-term perspectives.

Support for transport within the scope of cross-border cooperation is also financed from Interreg programs (mostly in order to ensure proper cooperation without direct support for transport infrastructure [15]) and Central Europe (to improve planning and coordination of regional passenger transport systems for better connections to national and European transport networks; to improve coordination among freight transport stakeholders for increasing multimodal environmentally-friendly freight solutions [16]). The Transport Policy is the financial support source for regional projects related to transport in Czech Republic [17]. In Slovakia, the Operating Programme Integrated Infrastructure provides the financial support source for regional projects related to transport [18].

The issue of taxes is also an element that shapes the economic aspect. Current and predicted tax policy, customs and road charges are an obstacle to some extent in the development of cargo transport, mostly due to various charges that are imposed on companies. On the other hand, the expected charges imposed on inland road transport suggest positive impact on intermodal transport development. Fuel tax and road charges (for transfer) represent a significant part of operational costs of companies within the TSL sector. Depending on the company profile, type of fleet as well as territorial coverage, share of fuel in costs is variable and represents 60 % to 30 %.

The issue related to impose charges for road infrastructure is regulated in the Directive 1999/62/EC of the European Parliament and Council, changed by the Directive 2006/38/EC [19]. It permits the road charges system the rate of which is based on infrastructure costs (construction, operation, maintenance and development) and does not allow to consider external costs in the charges for transfer (congestion; change of climate; noise; accidents; pollution of air, water, soil; land occupancy). Costs of haulage companies operations within the investigated countries, especially in Poland, may also increase based on the planned introduction of emission customs (imposed on all fuels - petrol, Diesel oil), which, by supporting the budget, are to be used to fight smog and develop low-emission transport.

Costs of haulage companies operations increase also remunerations of employees, due to the so called employee market. Remunerations within the TSL sector have increased within the last 5 years. There still is not enough logistics specialists and there is clear employee market, similar to the one in the IT sector. Due to increasing meaning of the TSL sector within the studied economies, it is expected that this growth tendency will be maintained. Now, trends suggest that within a few years, the transport and logistics sector will struggle with shortage of qualified and non-qualified labour force, which fact may weaken its efficiency.

The rate of motorization rate is also associated with the progress of road transport and individual road transport, which shows yearly growth trends in every European country. Automotive offensive in Poland caused that our country grew into the leader of Central and Eastern Europe (539 cars per 1000 inhabitants, while in the Czech Republic - 450, and in Slovakia - 375).

4.2. Political conditions

The second studied aspect is the political and legal aspect. The following aspects are most commonly studied ones within this area: scope of policy, strategy and regulations; evaluation of government intervention level; range of support for business; protection against unfair competition, etc.

Within recent years, transport represented a significant area within the created development policy of Europe. It was one of the first domains covered by the common EU policy. The basic normative document is "White

Paper" published by the European Commission on 28.03.2011 (previous revisions were developed in: 1985, 1992, 1998, 2001) [5]. Program, defined in the document, is an element of the "Europe 2020" strategy. The premise to publish the White Paper is "establishment of uniform European transport area - a strive to attain competitive and resource-saving transport system". The document includes 10 objectives aimed at creating competitive and resource-saving transport system, formulated within three areas [5]: development and introduction of new fuels and driving systems in conformity with the principle of sustainable development; optimization of operations of multimodal logistic chains, i.e. through better utilization of energy-saving means of transportation; increase of effectiveness of transport and infrastructure utilization through information systems and market incentives.

The vision of the transport system included in the White Paper shows the increase of public authorities interest in this economy sector regulations. This is even more important because based on the mid-term review of the White Paper in 2015, it is found that the objectives of the White Paper are very ambitious such that some of them seem to be unreal. At the same time, one emphasized that the pace of their implementation, especially by member states, is not satisfactory and with reference to the studied cross-border regions, not coherent enough.

Policies and strategies of TRITIA member states concerning transport development, including intermodal transport are on similar level. Guidelines of Polish transport policy go hand in hand with the EU transport policy. The main documents presenting the most important problems and directions of development: Transport development strategy 2020 (with the perspective to 2030) [20] and Strategy for Responsible Development [21].

Except for the mentioned documents, one emphasizes a series of additional papers that include a diagnosis and directions of transport development. Unfortunately, multitude of strategic documents cause hindrances with coherence of the proposed operations and their hierarchization and integration.

Similar situation can be observed in Czech Republic and Slovakia. A document of the Ministry of Transport of the Czech Republic - The Czech Republic's Freight Transport Concept for the period 2017 - 2023 with a view to 2050 is currently considered a basic shift. The document deals with the transition to alternative fuels, creating a fairer market environment, improving the technical condition of the infrastructure, etc. It is comprehensively conceived material with a list of all the problems that need to be addressed. However, the deadlines are usually set for the development of follow-up documents and measures, for example, in the area of public logistics centres, a robust shift can't be predicted. With the view to 2030, it is only possible to assume the completion of some sub-projects and document processing, not a major shift in the quality of the infrastructure on some of the cohesive strokes. As an example, it is possible to mention in the TRITIA area the Ostrava railway node, which has been projected since 2013 and the project documentation has not yet been completed. In Slovakia the main strategic document is Strategic Transport Development Plan of the Slovak Republic up to 2030.

Unfortunately, in spite of the EU transport policy stipulations, there still was a dynamic development of road transport within TRITIA area. This is also related to omission of inland water routes (except for small fragments of lower sections on Vistula and Oder Rivers) in the European transport network TEN-T. Analysis of transport operations implemented on Czech, Polish and Slovakian markets shows that despite the undertaken endeavours, there is still missing coherent and efficiently functioning transport system integrated with the European and global system in these countries. Frequent lack of consequence related to implemented task, lack of clearly detailed priorities and selective implementation of the EU demands is still emphasized, which fact causes that the TRITIA regions distance in relation to the EU is significant within many fields of transport and the directions of development presented in the White Paper are implemented rather selectively. The Polish transport policy underlines mostly the errors related to delays in implementation of the program, lack of consequence, scattering of financial resources, low financial support, reduction of the planned range of remuneration and application of substitute and temporary solutions. Czech Republic and Slovakia underline

missing documents and complementary activities, i.e. legislative process schedule, target level of infrastructure capacity or schedule related to implementation of investment.

Analysis of strategic documents on the regional level showed that the objectives are focused around: transportation availability, transport competitiveness and transport sustainability [22]. However, the attitude towards individual objectives is very different - the first issue is usually discussed in every detail with identification of investment plans, however the second and third are discussed in general or sometimes even not included in documents at all. Unfortunately, it is difficult to see solutions satisfying the challenges of intermodal transport within TRITIA cross-border area in these policies. The implemented studies show significant discrepancy not only between strategic goals (despite of similarities in the wording), but also between information that is collected in order to evaluate cargo transport development.

Development of assistance programs supporting intermodal transport is a positive accent. As highlighted by the studies, development of transport system according to the principles of sustainable development and sustainable movement within the studied cross-border region, is possible by introducing comprehensive means supporting and promoting intermodal transport development. Until full internalization of external costs (transport), strategic links within the transport system should be financially supported by the state. It is desirable and reasonable to create complete and cohesive packages, covering organizational, legal, administrative as well as financial and economic instruments that would strengthen intermodal transport development. Examples from Austria, Germany or France provide a wide range of tools that can be used [23]. There are four operations supporting better utilization of intermodal solutions at the EU level:

- Internalization of external costs within all types of transport. Social and environmental costs of transport should be paid according to the principle "party that pollutes - pays".
- Investments oriented at physical infrastructure in order to provide better links between individual modal networks.
- Improvement in gathering and using information (concerning traffic, capacity, infrastructure availability, location of cargo and vehicles).
- Direct support for intermodal transport, according to the directive on combined transport (Council Directive 92/106/EEC) which is to increase competitiveness of combined transport.

In Poland and Czech Republic, support for intermodal transport is related first and foremost to:

- Construction and modernization of intermodal terminal infrastructure, including terminals located at logistic centres and sea ports together with dedicated railway and road infrastructure;
- Purchase and modernization of devices necessary to operate the intermodal terminals;
- Purchase or modernization of telematic and satellite systems (hardware and software) related to intermodal transport including implementation expenditures;
- Purchase or modernization of railway stock including traction locomotives and special wagons used for intermodal transport (flatbeds).

In Slovakia, the scope of support is not regulated.

Another element of intermodal transport development is development of cooperation [24]. The example can be European groupings for territorial cooperation established based on the decision (EC) No. 1082/2006 of the European Parliament and Council of 5 July 2006 on the European Grouping of Territorial Cooperation (EGTC) and decision (UE) No. 1302/2013 of the European Parliament and Council of 17 December 2013 changing the decision (EC) No. 1082/2006 on EGTC with reference to explanation, simplification and improvement within creating and functioning of this type of groupings. Example of such cooperation is EGTC TRITIA, of area 24 566.09 km² and almost 6.5 million citizens. The territory of the grouping consists of two cities with over 300 thousand citizens - Katowice (PL) and Ostrava (CZ). Two large areas of urban agglomerations in cooperation with Zlin (SK) are bound by intensive cooperation at the economic and social level. Location of EGTC TRITIA along the transport corridor Baltic - Adriatic opens new opportunities for



investing and creating interregional bonds. The grouping area includes seven universities, highly developed higher education as well as environment fostering innovativeness as well as research and development activities. Due to relationships between different entities operating within EGTC TRITIA as well as due to common challenges, there is a major potential to increase intensity, systematization and multilateral cooperation of partner regions. The main objective of the grouping within the transport area is related to maximum utilization of geographic location of partner regions for their economic development, supported by proper development of cross-border transport infrastructure and transport, using endogenous potential, potential of the cooperating regions and considering the need of availability and safety with simultaneous consideration and friendly approach to natural environment. The EGTC TRITIA assumptions seem to be noble, however, in practice, individual regions (even though they are the grouping partners) do not show such intensive activity. Development of intermodal transport development strategy within the EGTC TRITIA project is the first large project, but participation of regional and national authorities is poor. The largest activity within this scope is manifested by national and regional authorities of Czech Republic.

5. RESULTS AND DISCUSSION

Analysis of economic and political conditions affecting intermodal transport development within the cross-border TRITIA region allowed for identifying major opportunities and threats emerging from this area. Synthesis (see **Table 1**) first and foremost underlines these conditions which are common for the investigated countries and cross-border regions of Czech Republic, Poland and Slovakia.

Table 1 Opportunities and threats for intermodal transport development in TRITIA area

	Political factors	Economical factors
Opportunities	<ul style="list-style-type: none"> - Stability of the EU politics (security, duty-free union) - Development of cooperation within the studied cross-border area (intensification of cooperation of entities in the TRITIA cross-border area) - An integrated transport policy of the European Union that includes intermodal transport 	<ul style="list-style-type: none"> - Economic growth (GDP growth) - High fuel price (opportunities for more ecologic modes) - New investors and investments - Taxes and fees (for roads and HGVs) - Support programs - The reduction of external transport costs
Threats	<ul style="list-style-type: none"> - Lack transparent-ness political - Legislative restrictions and high bureaucratic duties - Lack of a unified transport policy in the studied area 	<ul style="list-style-type: none"> - High fuel price (increasing of road freight transport costs) - Lack of specialists on the market - Increase of motorisation rate

Source: own elaboration.

Factors given in the table has been evaluated during expert's workshops shared by researchers from universities, representatives of business surrounding institutions from Poland, Czech Republic and Slovakia as well as two representatives of TRITIA grouping. Based on the force field analysis, one performed an evaluation of forces fostering and limiting intermodal transport development within the given area (see **Figure 1**). One also adopted a 0 - 3 scale, where 3 is the greatest impact, 2 - average impact, 1 low impact, 0 - no impact.

Important forces fostering (evaluation 2, 3) intermodal transport within TRITIA region include: general economic growth, thus the increase in transported cargo and new investments; stability of the European policy and transport development strategies at the European and national level as well as development of cooperation within the studied cross-border area. The issue of cross-border cooperation with the Czech



Republic and Slovakia is discussed in the strategic documents of the Śląskie Province. Unfortunately the cross-border approach to the development of the transport system is weakly emphasized. The issue of integration of transport systems in border areas, including the competitiveness of these systems and sustainable mobility and transport, is tackled to a low degree. It seems that this is the result of strategy building in a hierarchical way, which leads to polarization of regional strategies in the national direction, while local and regional transport initiatives are marginalized.

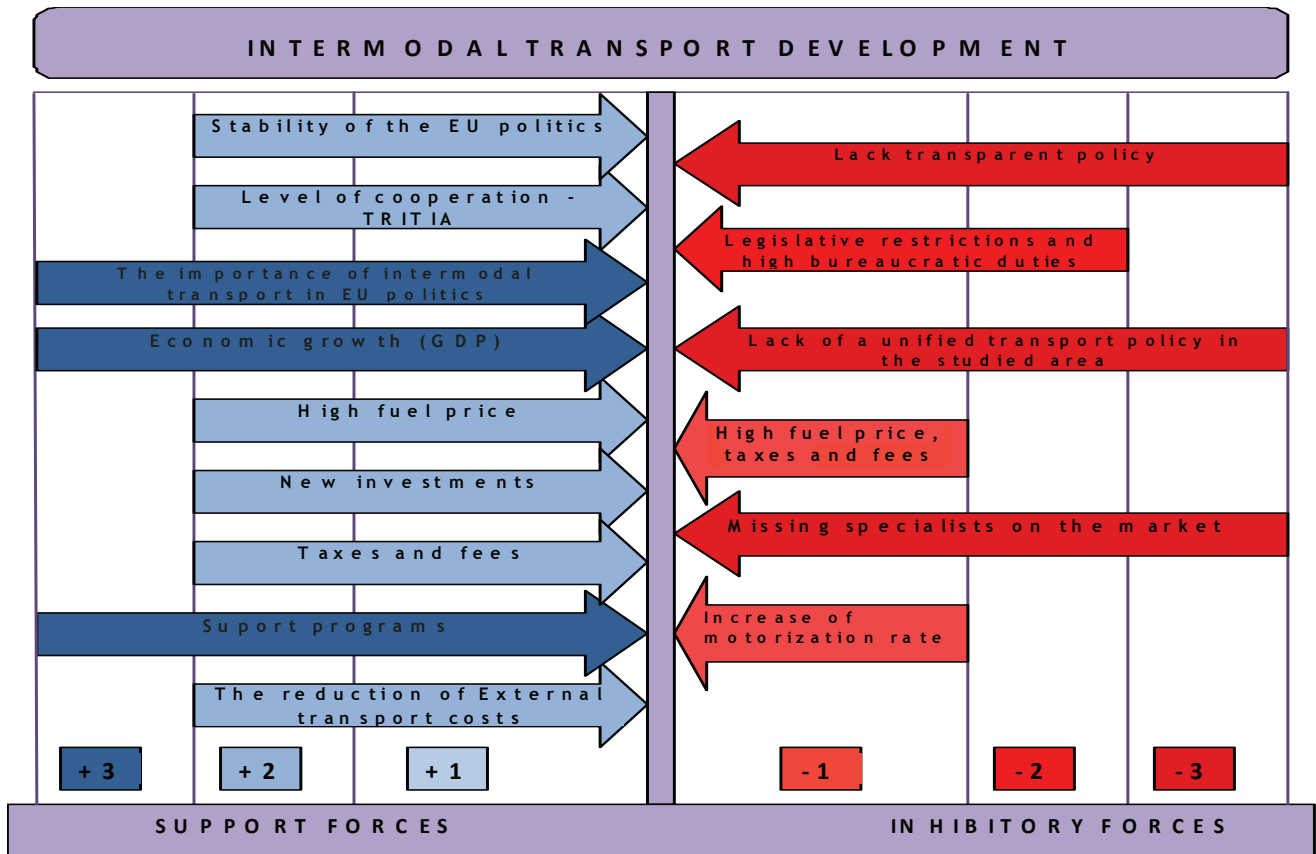


Figure 1 Force field analysis of economic and political factors (own elaboration)

It is also necessary to show the limiting forces in the form of missing common programs and projects, especially on regional level that develop cross-border cooperation. Regulations on the Union level (average positive impact) cannot be translated to standards and unified regulations applicable in neighbouring countries (high decelerating impact). Taxes and other external costs have both positive and negative impact on intermodal transport development; positive because the rate of charges inspires to using different types of transport and negative because most of the charges is related to road transport, which is part of intermodal transport. The support programs have a definitely positive effect on the development of intermodal transport.

Missing specialists on the market represents major negative impact on intermodal transport development. Unfortunately, this factor will intensify in time.

6. CONCLUSION

According to PESTEL analysis and force field assumptions, it is necessary to present operations that use opportunities and driving forces and to limit or reduce threats or decelerating forces. The key solution with reference to intermodal transport development within the given TRITIA regions is cooperation both on sector level (between TSL companies) and between cross-border regions and the state administration. Cooperation



of the first ones depends to high extent on development of the European policy, which is relatively stable and on the national and regional policy, which is unfortunately not coherent. Cooperation on strategic and administrative, institutional and organizational level is key in this case, and would allow for preparing and implementing unified regulations and infrastructural projects. The first problem is lack of specialists. It is necessary to develop vocational schools and faculties on universities. This is another scope of cooperation which the regional authorities are mostly responsible for.

As the partial PESTEL analyses showed, the future of intermodal transport depends to high extent on operations of regions, and in this example, on cross-border regions supported by national policies. The remaining conditions form a complete image of forces driving and decelerating development of this transport and represent grounds for future works over intermodal transport development strategy within TRITIA region.

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