



RESEARCH ARTICLE

2024, vol. 11, issue 1, 268 - 277
<https://doi.org/10.5281/zenodo.#>

THE VIA CARPATIA PROJECT AND THE INTEGRATION PERSPECTIVES OF THE TIMIȘOARA-ARAD-ORADEA DEVELOPMENT AXIS

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Abstract

Investments in transport infrastructure and accessibility represent the backbone of the cohesion policy and regional development. Since the 1990s, the European Union has supported the development of transport infrastructure as essential, not only from the perspective of building the infrastructure itself, but also due to the role that it has later in economic development. Currently, the Trans European Transport Network (TEN-T) policy is under revision and brings important changes to Romania along the new TEN-T corridor Baltic Sea – Black Sea – Aegean Sea. In this new TEN-T corridor, Via Carpatia is the most important road transport project with the potential to stimulate regional cities along the Timișoara-Arad-Oradea development axis. The research showed a high degree of citizens' expectations for the implementation of the Via Carpatia Project. Moreover, the research concluded the overwhelming need for developing new transport routes, mainly modern infrastructure such as highways, expressways, and metropolitan transport, which enhance the accessibility of citizens and favours economic development.

Keywords: Via Carpatia, TEN-T policy, transport, infrastructure, development

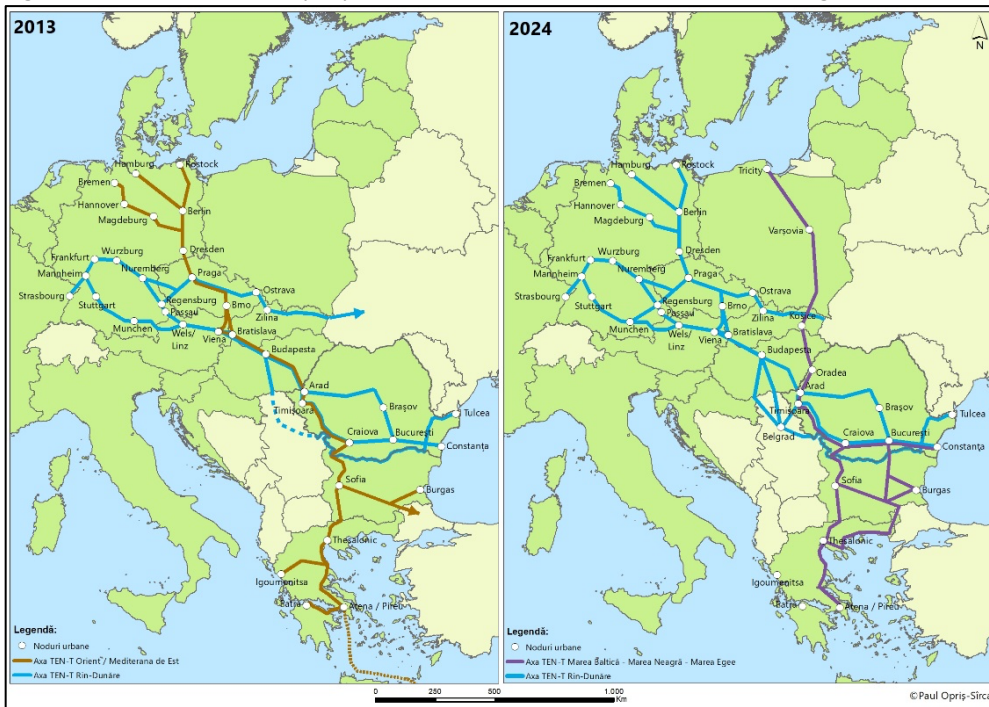
Introduction

At European Union level, the Trans-European Transport Network (TEN-T) policy is the most important initiative for developing efficient transport of people and goods, while supporting trade and economic development. This vast network includes roads, railways, inland and sea ports, airports and multimodal terminals connecting urban nodes. In a sense, this extensive network is reminiscent of the United States' Interstate Highway System, which is the largest road network in the world (Road Traffic Technology, 2014).

The significance of the Trans-European Network policy is evidenced by the addition of a new article - Article 154 (Albrecht, Coppens, 2003) - to the Treaty on the Functioning of the European Union. This article is specifically dedicated to this area. Investment in transport is a crucial component of cohesion policy and regional development (Crescenzi, Rodriguez-Pose, 2012), with substantial financial resources allocated to connecting regions. The TEN-T policy is governed by EU Regulation 1315/2013, which is currently being revised to align the transport network with the new provisions of the European Green Pact and the Strategy for Smart and Sustainable Mobility.

The revision of the TEN-T policy regulation has major implications for Romania. According to the latest proposals from the European level, the East - East Mediterranean axis has been reconfigured and renamed the Western Balkans, while the Rhine-Danube axis has taken over the infrastructure in north-east Germany (Figure 1). The new TEN-T Baltic Sea - Black Sea - Aegean Sea axis partly overlaps in the south on the territory of Bulgaria and Greece with the former TEN-T East-Mediterranean Axis, but the novelty is the new route that starts in northern Poland, crosses Slovakia and Hungary and enters Romania near Oradea, which overlaps with the proposed route of the Via Carpatia Project.

Figure 1. The old and new proposal for the main TEN-T corridors crossing Romania



Source: own processing in ArcMap 10.6.1.

The Via Carpatia Project route connects 7 countries (Lithuania, Poland, Slovakia, Hungary, Romania, Bulgaria and Greece) and 3 seas (Baltic Sea - Black Sea - Aegean Sea), hence the proposal for the new TEN-T corridor (Figure 2).

Figure 2. Via Carpatia Project Route



Source: Oradea Indirect, 2021

Literature review

The Via Carpatia infrastructure project is indeed integrated into the regional development policies, and this is evidenced by the various initiatives aimed at promoting not only this project, but also several joint cooperation projects between European countries for the economic growth of the regions. For example, the Three Seas Initiative (3SI) is a political platform that brings together the 12 EU Member States located between the Adriatic, Baltic, and Black Seas, namely Austria, Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia. The objective of this initiative is to develop the region's economy, increase cohesion, and strengthen transatlantic ties. Under this initiative, Romania is paying special attention to the implementation of two regional infrastructure projects, namely the Rail2Sea rail project and the Via Carpatia road project (Ministry of External Affairs, 2021).

About the impact and the way the Via Carpatia project will contribute to improving accessibility in Eastern Europe, was written in particular by Polish authors (Zakrzewski, Nowacki, Kopczewski, 2018; Rosik, Komornicki, Goliszek, 2018; Wornalkiewicz, 2021; Szewczak, 2021).

In Romania, beyond the political discourse, there are not many studies on the economic impact as well as the accessibility benefits of the Via Carpatia project. Author Albu Razvan (2022) wrote about the possibilities of cooperation between Romania and Poland in the framework of the Three Seas Initiative, and Mihai Sebe made an analysis of the strategic opportunity for Romania of this initiative (2022).

The Via Carpatia project will stimulate local development and improve connectivity within the cross-border region, ultimately transforming it into a genuine European development axis. Integrating the Timișoara-Arad-Oradea corridor into this significant development axis presents a vital opportunity that must not be overlooked, as its realization would yield substantial socio-economic benefits, thereby positioning it as the second primary economic zone in Romania, following the Bucharest-Ilfov region.

Considering the pivotal role that the Via Carpatia project plays in enhancing accessibility along the eastern flank of the European Union as well as NATO and the chance to integrate the national territory into a large-scale road infrastructure project, this study intends to examine the development potential of the Timișoara-Arad-Oradea axis by implementing the Via Carpatia project.

Within the framework of the stated purpose, a first objective of the research is to analyse the stage of construction of the Via Carpatia project. A second objective concerns the analysis of the public perception and the degree of awareness of the idea of implementing the Via Carpatia project along the Timișoara-Arad-Oradea axis.

The third objective is to identify the main needs of the population in terms of transport infrastructure development and the economic sector. In the academic approach of the research, we start from the hypothesis that the implementation of the Via Carpatia project is at an early stage, but the authorities are making efforts to accelerate the start of the project and its implementation, because this project has a high degree of notoriety and the local population eagerly anticipates and is waiting for its completion.

Method

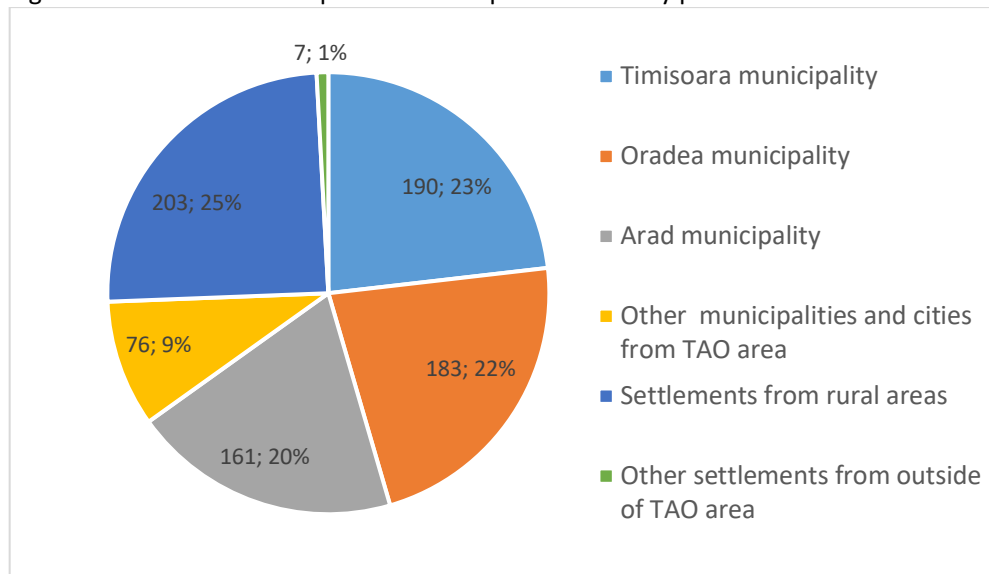
In light of the research objectives and goals, the primary research technique implemented was an opinion survey, employing a questionnaire, in the areas situated along the Timișoara-Arad-Oradea development corridor. This approach was chosen due to its capacity to uncover both qualitative and quantitative data, which includes opinions and perceptions, as well as information beyond what is typically available in official statistical records.

The survey inquired about the following topics:

- The quality of transport infrastructure (including accessibility and condition);
- The population's territorial mobility;
- Residents' views on the Via Carpatia project;
- Residents' views on local development management and attracting investment by authorities.

The sample volume is substantial of 820 subjects aged 16 years and over, residing in urban and rural localities within the Timișoara-Arad-Oradea development axis area. (Figure 3).

Figure 3. Distribution of responses to the questionnaire by place of residence



Source: own processing in Excel Office 2016

Most responses came from rural areas (203 - 25%), followed closely by Timișoara (190 - 23%) and Oradea (183 - 22%). From Arad, 161 valid answers (20%) were collected, while 76 answers (9%) came from the other small cities. The answers were filled in online by the respondents in the Google Forms platform and processed in Microsoft Excel 2016. The questionnaire was open during December 2023 and May 2024.

Other research instrument that was used was the analysis of online news articles regarding the Via Carpatia topic due to the fact that there is a lack of official information and data coming from the government ministries, national or local agencies regarding this vital project.

Findings

The development axis between Timișoara, Arad, and Oradea is situated within the broader region encompassed by five key urban centres: Timișoara, Arad, Chisineu-Cris, Salonta, and Oradea. These cities are interconnected through the European Road 671. Between Arad and Oradea are located 5 road cross-border crossings (Turnu, Vârșand, Salonta, Borș and Oradea A3), which generate a significant road traffic. Currently, Timișoara and Arad are joined by the A1 motorway, while the route between Arad and Oradea is limited to a single European road with one lane in each direction. This results in a travel time of approximately 1 hour and 40 minutes for passenger vehicles, and even longer for freight trucks. In light of these circumstances, the construction of an express road between Arad and Oradea would significantly reduce travel time to approximately 1 hour and would significantly reduce the congestion in the area.

The Via Carpatia project is also called the Arad-Oradea-A3 Express Road (DEx16) (Table 1). The segment linking the A1 motorway at Arad to the DN7 is 3.5 km long (part of Arad's south-eastern ring road) and is built to motorway profile, and is called the A11 motorway. This segment was opened in June 2012. Recently, in March, the link between Oradea and the A3 motorway was opened in the area of Borș, built as an expressway for 13 km and as a four-lane national road.

Table 1. Segments of the Arad-Oradea-A3 Expressway (DEx16)

Segment	Status	Opening date
I. Arad - Oradea	Accepting bidding offers	tbd
II. Oradea - A3	Opened, in use	March 2024
III. Arad/A1 - DN7 (A11)	Opened, in use	June 2012

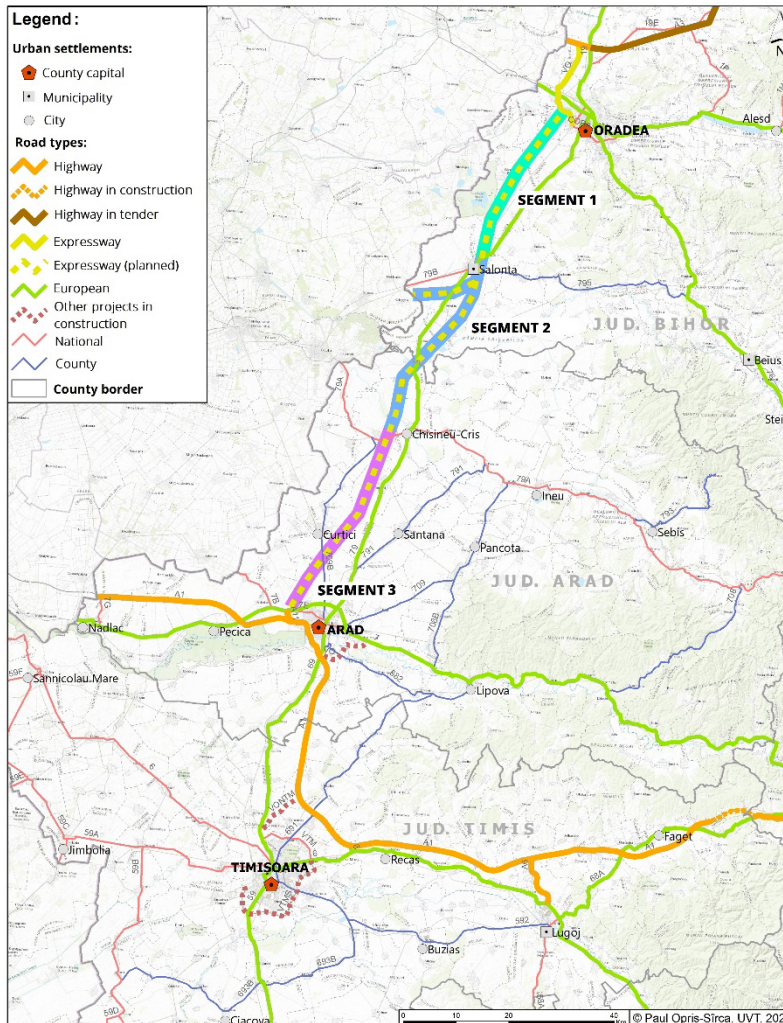
Source: Informații autostrăzi românești, 2024

The 120.47 km segment between Arad and Oradea is currently under tender. According to CNAIR, the deadline for submission of bids was May 2024, with an estimated value for execution of approximately 9715.508 million lei excluding VAT (CNAIR, 2024). The tenders are divided into 3 segments (Informații autostrăzi românești, 2024) (Figure 4):

- Segment 1 Oradea – Salonta: 33,7 km (plus 5,3km connection road between DN79 Oradea - Arad and Salonta).

- Segment 2 Salonta – Chişineu-Criş: 39,7 km (plus 10 km connection road to the border area with Hungary).
- Segment 3 Chişineu-Criş – Arad: 47,07 km (plus 2,9 km connection road with Arad West Industrial Zone).

Figure 4. Proposal for the route of the Arad-Oradea Express Road 16



Source: own processing in ArcMap 10.6.1.

This endeavour, as indicated by media outlets, is purported to be the initial-speed highway in which the central government does not hold a preeminent position. It is being constructed through a collaboration between the local authorities of Bihor and Arad, including the Bihor County Council, Oradea City Hall, Arad County Council, and Arad City Hall, with financial backing from the European Union (Podaru, 2021).

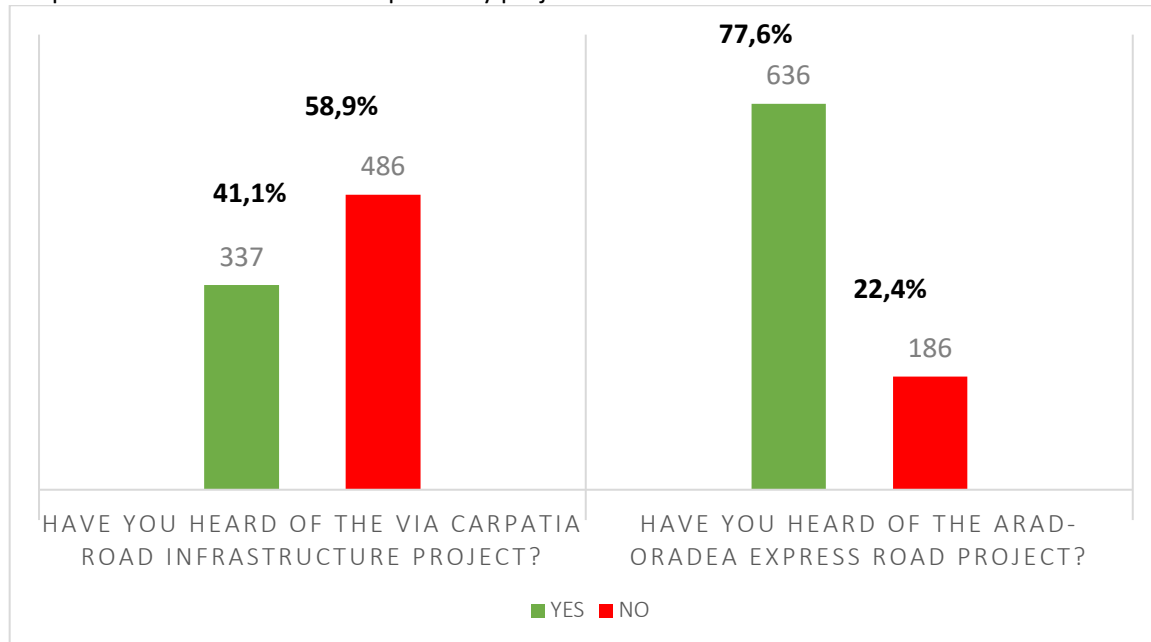
According to earlier statements, the Via Carpatia project is due for completion in 2026 (G4media, 2021). It is unclear at this stage whether 2026 remains the project's completion date, as construction work has not actually started on site. The progress of the project will also depend on the pace at which the local authorities manage to implement the construction of this road. The latest developments in the project show that the tender for lot 1 has been released by CNAIR, but segments 2 and 3 remain suspended until the responses to the appeals lodged by the interested contractors are finalised (Podaru, 2024).

The analysis of the Via Carpatia project was not limited to its implementation state, but also extended to the public's perception of the project. To achieve this, a questionnaire was administered in localities situated along the Timișoara-Arad-Oradea development axis, which tracks the level of recognition of this extensive European-level project, as exemplified by the Arad-Oradea expressway.

The findings from the question "Are you familiar with the Via Carpatia road infrastructure project?" indicate that the majority of participants (n=486; 59.3%) were not familiar with this significant European endeavour (Figure 5). While the ratio of almost 60-40 may not be entirely negative, it is encouraging that 40% of the surveyed individuals had heard about this strategic initiative that has been increasingly promoted in recent years, even though the concept was first proposed in 2006 (RL Online, 2010).

In contrast, the Arad-Oradea expressway has a much higher level of recognition, as it holds greater significance for the local population. Results from the question "Are you familiar with the Arad-Oradea expressway project?" reveal that over three-quarters (77.6%) of respondents were familiar with this endeavour, which indicates a high degree of anticipation and expectation from citizens for the project's implementation. (Figure 5).

Figure 5. Distribution of answers to the questions concerning the level of information of the population about Via Carpatia and the Arad-Oradea expressway projects



Source: own processing in Excel Office 2016

The survey investigated the primary needs of the population with regard to transportation infrastructure and the economy, as there exists a direct correlation between the level of development of communities and their access to transport infrastructure (Pottier, 1963; Geyer, 1987; Popa, 1994; Rodrigue et al, 2013).

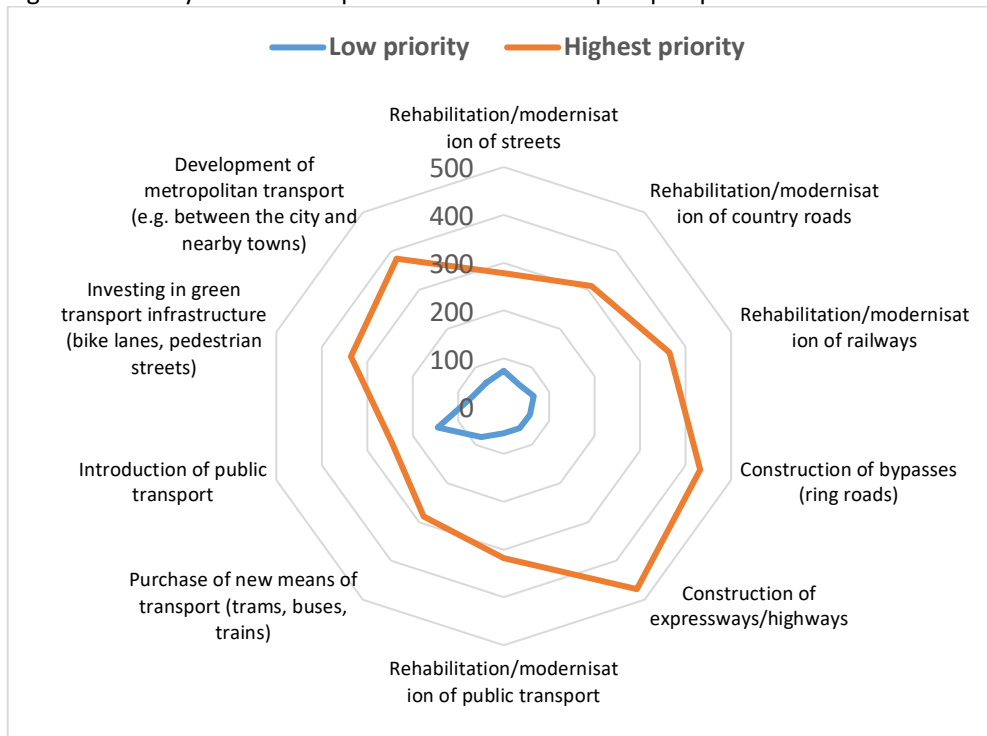
The analysis of the citizens' responses focused on the categories of infrastructure considered to be of the highest priority.

Approximately 58% of the respondents (n=473) indicated that the construction of express roads and highways is the most pressing need in terms of transportation infrastructure (Figure 6). These findings are consistent with the statistical data at the European level, which reveals that Romania ranks last in the density of high-speed roads (motorways) (EUROSTAT, 2024).

The second most popular option among respondents was the construction of bypasses (ring roads), with 53% (n=432) of the participants indicating their support for this measure. This is particularly relevant in large cities, where the lack of or incomplete bypasses often leads to traffic congestion, a problem that was confirmed by the data collected in the survey.

The following priority is the development of metropolitan transport (Figure 6). Among the respondents, nearly half (47%, or 381 individuals) expressed this need. It is important to note that this category does not refer to a specific mode of transport, but if bypasses are limited to road transport, then the preference may be for environmentally friendly modes of transport, such as fast rail or tram networks that connect metropolitan areas and promote the use of green transportation options that reduce pollution. Indeed, a similar project worth approximately 200 million EURO is currently underway in the Oradea metropolitan area, which aims to connect Oradea with several locations, including Oradea Airport, Sânmartin - Băile 1 Mai - Băile Felix (Cordău), Borș (Industrial Park), and Sântandrei - Girișu de Criș - Toboliu – Cheresig (Bihar County Council, 2023).

Figure 6. Priority needs of respondents from a transport perspective



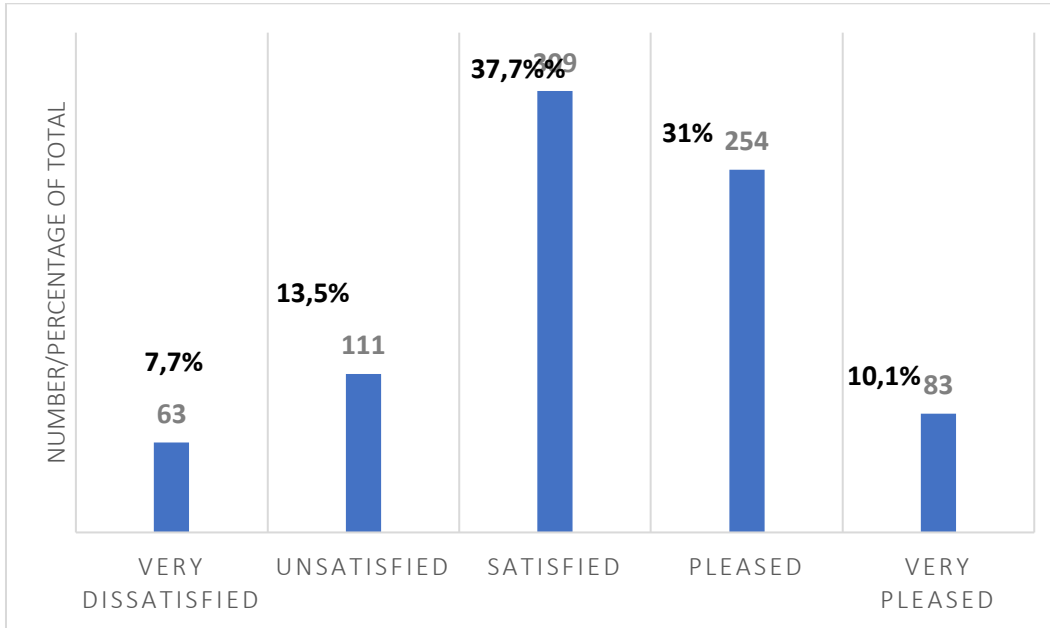
Source: own processing in Excel Office 2016

The fourth priority for respondents was the rehabilitation/modernisation of railways, with 364 respondents (44%). This is consistent with the pressing need to revitalize Romania's railways, which are experiencing a historical degradation. Without substantial investments, there is a risk of closing more railway sections. From 1990 to 2023, the rail network decreased by 737 km (-6.5%), and a lack of investment and vision on the part of decision-makers may lead to a further shrinking network, unlike the European Union, which is increasingly emphasizing investments in rail transport as well as clean and environmentally safe metropolitan transport.

From a methodological standpoint, the lowest priority for development, as determined by respondents' choices, was also examined. The most common responses were the introduction of public transport (n=145 responses) and the purchase of new transportation means (trams, buses, trains) (n= 80 responses). These answers can be attributed to the significant investments already made in the purchase of rolling stock for public transport companies in large cities, particularly through the Regional Operational Programmes for the European financing and programming periods 2007-2013 and 2014-2020. The investments will continue on the same trend as well in the current funding period 2021-2027. Moreover, most responses came from the three major cities in the axial zone (Timișoara, Arad, and Oradea), where large amounts of investments have been made and although there is more room for improvements, in the public opinion there are other more pressing matters regarding transport.

According to the participants in the survey, there were noteworthy trends in the economic situation. The results regarding the level of satisfaction with various aspects, such as job opportunities, starting a business, salary level, and attracting new investors and businesses, are illustrated in Figure 7.

Figure 7. Degree of satisfaction of respondents with aspects of the economic environment in their place of residence



Source: own processing in Excel Office 2016

The majority of respondents (n=309; 37.7%) reported being satisfied with the economic opportunities available in their area. Conversely, only 21.7% indicated dissatisfaction with economic opportunities, compared to 41.1% who expressed satisfaction and high levels of satisfaction. Although the ratio is relatively balanced, it tilts slightly toward the satisfied and highly satisfied, particularly in a western region of Romania that hosts a significant portion of foreign investment and offers multiple economic prospects along with rapid transportation links to Central and Western Europe.

The questionnaire requested that respondents identify the main strengths of their locality or region from their perspective. A significant portion of respondents (number: 217; 26.4%) cited the area's geographical location or proximity to the border as a major advantage. Additionally, 12% of respondents highlighted the ease of finding employment as a benefit, while 10% mentioned the efficient administration as a contributor to the area's overall development (11%).

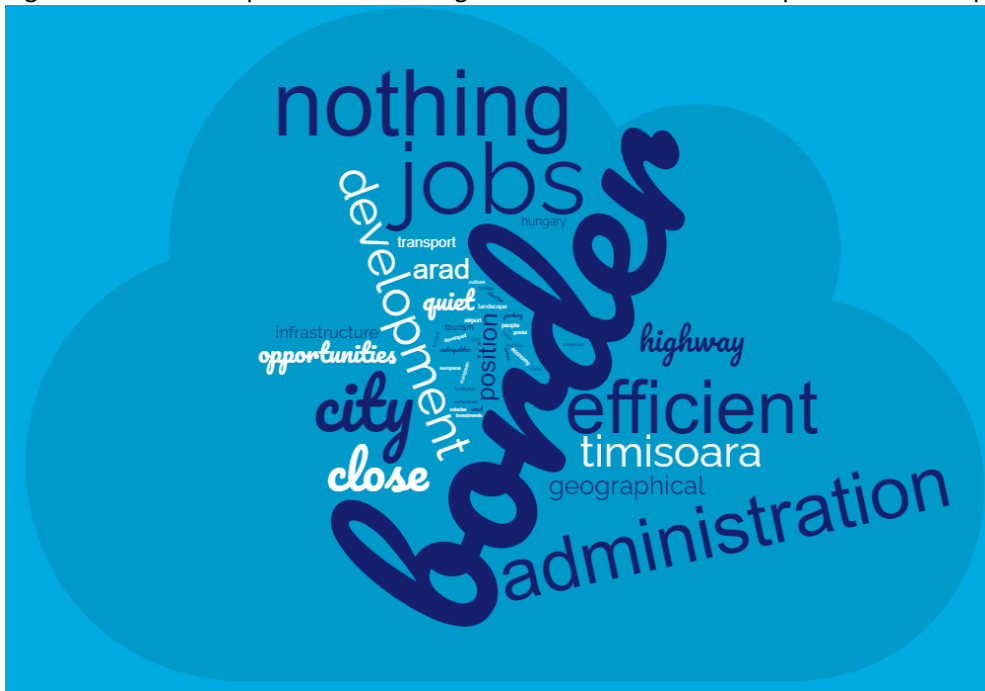
The decision to create a figure representing the most commonly cited words (820 respondents) in English (word cloud) was made to show the citizens responses about what they consider the main assets of the area they reside (in a formal tone, numbers remain unchanged). The prominent words such as "border," "jobs," "development," and "efficient administration" align with the previously calculated and presented percentages.

The use of this tool is also beneficial in identifying other word clusters that may provide valuable insights into other aspects mentioned by respondents. For instance, the mention of words linked to transport subject's words such as "infrastructure" or "highway" was observed. These factors are considered significant assets for the inhabitants, particularly in the context of having access to certain sections of motorways and expressways as well as the continuous development of the transport infrastructure as a whole.

The word "quiet" suggests that the residents appreciate living in peri-urban areas that offer a more moderate lifestyle, yet remain close to the services of big cities. As a proof, words such as "city," "Timișoara," and "Arad" indicate that the residents value the benefits and services that the urban environment offers.

Another important word worth bringing into discussion that was mentioned by the citizens was "nothing" referring to the fact that they are unsatisfied about the development prospects of the places where they live and as a consequence they did not identify anything as an asset. In the applied questionnaire, the citizens did not mention the exact reasons for their dissatisfaction, but this can be attributed various factors, including the quality of the neighborhood environment (transport as well as utilities infrastructure), the availability and proximity of community facilities and services (health, education and recreative), safety concerns, and most important, the degree of attachment they feel towards their community. Because satisfaction is a multifaceted concept influenced by both physical and social dimensions of the living environment, this theme can be explored in a further research topic.

Figure 8. The most representative strengths of the areas where the questionnaire respondents live



Source: own processing in WORDCLOUDS, <https://www.wordclouds.com/>

Conclusions

This research is important in that it offers a significant contribution to the policy on transport infrastructure development in the European Union in light of the recent changes proposed, with a focus on the new Baltic Sea - Black Sea - Aegean Sea corridor and the implications it has for Romania. Furthermore, the new TEN-T corridor incorporates the major road transport infrastructure development project known as Via Carpatia – vital for Western Romania, particularly the Timișoara-Arad-Oradea area with potential to stimulate the economy and transform the area into the country's second industrial hub.

This new project could serve as an exemplary model for transport infrastructure construction in Romania, as it represents the first major infrastructure project in which central authorities do not hold a preeminent role. Consequently, there are improved prerequisites for expediting the project, although some stages, such as the construction tendering, are still conducted centrally and involve rigorous and often lengthy procedures. The local authorities have set a bold deadline for the completion of the works (2026), but a more realistic estimate could be made by the end of this year (2024), depending on the unblocking of all tenders and the level of mobilization of the contractors.

All three research hypotheses have been partially or fully validated.

With regards to the hypothesis that the local population is aware of the project's implementation, the data from the questionnaire revealed an overwhelming majority of respondents are knowledgeable about the project and support its implementation, thus validating the hypothesis fully.

In terms of the pressing needs of the population related to transport infrastructure, particularly large-scale projects, the hypothesis has been fully validated. The responses to the questionnaire showed that building express roads and motorways (58% of responses), constructing bypasses (53% of responses), and developing metropolitan transport (47% of responses) are the most pressing needs of the population. These projects aim to improve connectivity between localities and facilitate accessibility between major cities, while also fostering economic links with peri-urban areas where public transportation is lacking or insufficiently developed.

Regarding the notion that the Via Carpatia project's implementation is in its early stages, but authorities are working to expedite its commencement, the data demonstrated that there is considerable local government concern for its successful execution. However, further data is necessary to test and substantiate this hypothesis. In this context, the analysed data sources (press articles) are deemed suitable for only partial validation. In perspective, an evaluation of the degree of government involvement in the project's implementation could serve as a topic for future research.

The strategic importance of the Via Carpatia project, aiming to connect northern Europe with southern Europe through a transportation corridor, is undeniable, with a triple approach: economic growth, transatlantic connectivity, and European unity. It will fill an essential missing transportation segment in the region (Sebe, 2022).

Additionally, at the regional level, it will improve connections between Oradea, Salonta, Chişineu-Criş, Arad, and Timișoara, functioning as a development axis and contributing to economic growth by attracting investors and facilitating a new road access. This will result in the decongestion of localities and improve the quality of life for citizens.

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