

RAIL TRANSPORT SERVICES IN ROMANIA: PERCEPTIONS, PROBLEMS AND PERSPECTIVES

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Abstract:

The present research is a pilot study that analyses citizens' perceptions regarding the rail services provided by the Romanian Railways Company - traveller division (CFR Călători SA). The main objectives of the research are: (1) To assess citizens' satisfaction concerning the rail services in Romania; (2) To investigate citizens' perception regarding the quality of the rail services; (3) To identify the aspects that should be improved in the rail services provided to citizens. The research methodology consists of an opinion survey, conducted among citizens in Bucharest-Ifov region. The study revealed a rather negative perception regarding the rail services provided by the Romanian Railways Company - travellers division (CFR Călători SA). Respondents were at least satisfied with: trains' punctuality, the cleanliness in the train wagons, the number of counters for tickets available in the train stations and the food and drinks that can be provided in trains and were satisfied the most with the temperature in the trains wagons, the luggage space and, the attitude of the trains' personnel. Also, the study showed that on the whole, the respondents considered that the rail company provides services of medium quality.

Keywords: Romanian railways services, citizens' satisfaction, rail infrastructure

JEL: R4, A1, Q5

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INTRODUCTION

The transport sector as well as the transport infrastructure is deeply related to economic development. In order to ensure sustainable economic development, governments try to raise constantly their investments in the transport infrastructure, namely in airports, roads, and railways, especially in countries where this infrastructure is not developed enough such as Romania.

The development of transport infrastructure is important because it attracts new investors, leading to job opportunities and higher living standards. Transport infrastructure is a resource associated with the territory. Its level is related to foreign and local investments, human capital, economic development, and living standards (Nesterov et al., 2022).

Also from an economic perspective, it can be observed that economies evolved at the same pace with the transport infrastructure and facilities. Consequently, it is noticed that well-developed countries have also very good transport infrastructure. Better transportation facilities around the world made it possible for businesses to buy raw materials at low prices and in large quantities from distant places. This action was due to developed infrastructure and transportation facilities. Consequently, mass production was encouraged, leading to the creation of new markets and the development of the old ones. In addition, new investors were attracted, inclusively from foreign countries, new industries and businesses appeared, more workplaces were created and also innovative and creative business ideas were encouraged (Organization for Economic Cooperation and Development, 2020, Krabokoukis, Polyzos & Kantianis, 2024). Another important point is that infrastructure influences the development of human, cultural, and social capital. In addition, it conditions the possibility of progress and increases territorial cohesion (Prus & Sikora, 2021, Mnatsakanyan, Hayrapetyan & Molnar, 2021).

Nowadays, the development of the transport sector and infrastructure unfortunately leads to different challenges that should be taken into consideration such as environmental problems: pollution or energy efficiency. In the context of the EU's endorsement of the Green Deal, the environmental dimension is integrated more than ever in the process of transport development in order for citizens to benefit from clean air, have good places to live and work, and minimize the effects of climate change. However, the business environment does not always take into consideration environmental issues, especially in less developed countries, because this leads to higher expenses and less profit (Organization for Economic Cooperation and Development, 2020, Haas & Sander, 2020).

Consequently, one of the solutions for minimizing the negative impact on the environment is to promote more sustainable transport modes to alleviate the problems resulting from the excessive use of private cars (congestion, pollution, noise, etc.) (Chandra and Mishra, 2024, Andrei & Luca, 2022), such as green public transport and rail transport (Constantin, Nastacă & Geambașu, 2021, Sun et al., 2020).

1. MAIN CONSIDERATIONS REGARDING RAIL TRANSPORT

1.1 The railway system in Romania- main challenges and problems

In the European Union, the rail sector contributes significantly to the Member States economies, employing directly more than one million people (railways companies, infrastructure managers). The European rail network transports annually about 1.6 billion tons of goods and 9 billion passengers (Gökgöz & Yalçın, 2024).

In Romania, the railway system faced a major decline compared with the transport system in Western Europe. At the beginning of the 1990s, Romania had the largest, most dense, and most used railway network in Europe, which needed significant funds for maintenance. Unfortunately, the state could not ensure the necessary amount of resources and the railway system entered into decline. A significant number of routes have been disbanded and the number of passengers has decreased dramatically. In addition, the funds allocated from the state's budget for the repair and maintenance of railway infrastructure have also decreased in the past years. The insufficient funds allocated for the rail infrastructure have led to a reduction in the speed of rail traffic and contributed to the massive degradation of this infrastructure (Ministry of Investments and European Projects, 2022, Merciu et al., 2022).

More than that, in the context of the Transport Operational Programme 2021-2027 preparation, whose financial allocation should help significantly to the development of the railway infrastructure, the Ministry of Investments and European Projects (2022) made an analysis of the transport system, its main problems and challenges. Regarding the railway system, the analysis revealed the following important aspects (Ministry of Investments and European Projects, 2022):

- The rail transport system in Romania is unattractive, unprofitable, and uncompetitive, leading to the necessity of an urgent reform concomitant with infrastructure investments.
- The main problems identified by the Romanian authorities are: poor quality of service and management, sustainability of infrastructure, safety and security, and non-performing infrastructure.
- The main problems of the services provided by the Romanian railways are: long waiting times within travel timetables; long travel times influenced by frequent stops; high prices and poor quality of services provided by the train stations.
- The need to reform the services provided for the primary network (frequency and performance indicators), reduce waiting time in train stations, design attractive train schedules that should respond to passengers' needs, improve services, ensure adequate programs and funds for rail

infrastructure maintenance and integrate it with other modes of transport at the regional and urban levels.

The main operators of the railway transport system owned by the state are: the rail infrastructure operator - CN CF CFR SA, the main rail freight operator - CFR Marfă SA and the main rail passenger operator - CFR Călători SA. The public rail infrastructure on Romanian territory belongs to the Romanian State, through the Ministry of Transport, being under concession to the Romanian Railways Company CFR SA, as administrator (The National Council of Supervision in the Railway Field, 2017).

The maintenance and operation of the public rail infrastructure is conducted by the Romanian Railways Company- Infrastructure division (CN CF CFR SA). The company's budget, formed by its revenues corroborated with financial aid allocated from the state's budget is insufficient to provide qualitative services for citizens. Thus, in the last years, several investments in the railway system have been made, which led to the increase in the trains' speed and digitalization of the services provided by the company. Despite the investments and the funds allocated from the European Union for the transport field, there are still significant disparities regarding the railway network size in relation to traffic demand and insufficient financial resources to maintain and operate to adequate quality standards (Ministry of Investments and European Projects, 2022).

The Romanian Railway Company - Traveller Division (CFR Călători SA) is the country's national railway passenger transport operator, enabling the provision of national and international long-distance rail transport and national, regional and interregional transport in order to meet national public interest as well as social and defense needs of the country, on the basis of competitive economy, with the aim of gaining profit (The National Council of Supervision in the Railway Field, 2017). The company does not have monopoly on the rail passenger transport, the service being in free competition with private operators, such as: Transferoviar Călători, Softrans, Regiotrans and Astra Trans Carpathic.

In 2023, the market share of CFR Călători on the Romanian public passenger rail transportation was approximately 74% (CFR Călători, 2023). Also in 2023, the company increased the volume of offered services (the average number of trains ran/day) by 4.7% compared to 2022. The number of passengers also increased by 5% compared to 2022 (from 70.464 to 74.279) (CFR Călători, 2023a, National Institute of Statistics, 2024).

The company tried to implement several measures, in order to increase citizens' satisfaction and the quality of the provided services. For example, after a break of 8 years, with the entry into force of the 2022/2023 train running plan, the Intercity train category was reintroduced on the routes where speed and technical conditions allowed this service. This has been possible due to the implemented projects that improved the railway infrastructure in different areas of the country. In addition, also in 2023, CFR Călători has been constantly trying to improve the offered services such as the online train ticket purchase application by introducing a new feature – the customers can choose the place where to sit and the wagon in which they wish to travel, directly from the application (CFR Călători, 2023b). Also, they introduced reloadable transportation cards and offered the possibility to purchase monthly and weekly passes in digital format (CFR Călători, 2023a,b).

In 2020, the Romanian Government, adopted the Rail Infrastructure Development Strategy (2021-2025) as a commitment to continue the efforts to improve the services provided for citizens. The strategy covers all relevant areas of rail infrastructure development, namely: maintenance and repair, operation, renewal, and modernization. The comprehensive nature of the strategy provides a guarantee for the efficient use of public funds needed to increase the economic efficiency of the national transport system through the rehabilitation of rail transport, with consequences on supporting the increase of competitiveness of the national economy (Romanian Government, 2020).

According to the strategy, by 2030 the total volume of rail passenger traffic should at least double, and the modal share in the land transport market should increase to at least 35%. Looking ahead to

2050, the target for rail passenger transport should be a modal share of more than 50% in relation to public inter-city transport by land transport.

All in all, considering the actual trends in transport, the need to encourage greener modes of transportation, friendly with the environment, and to improve mobility as well as connectivity throughout the country, Romania should focus on the development of the rail infrastructure, improve the rail services and provide the appropriate funding for the Romanian Railways Company (CFR) and its division, leading to an increased quality of services and a higher passengers' satisfaction. A modern and efficient rail system will allow people and goods to move quickly and easily between different regions, contributing to economic development and reducing regional disparities. By investing in rail infrastructure, green transport is encouraged and car dependency will decrease, having a positive impact on the environment. Also, the development of rail infrastructure would improve international connections, facilitating trade and tourism and strengthening Romania's position within the European transportation network (Mihail et al., 2023). For the next years, considering that the EU endorsed the Green Deal Pact, the development of rail transport becomes essential because it will help achieve the sustainability objectives set out in the European strategies (Ministry of Investments and European Projects, 2020, Fetting, 2020, Juracka, Valaskova & Nica, 2024).

1.2 Transport services quality and passengers' satisfaction

Generally, customers' satisfaction is determined by the capacity of a product or a service to meet their expectations (Permana et al., 2021). It represents someone's happiness or disappointment that comes from the comparison of the products or services to the initial expectations (Riyanto et al., 2021, Widiyanto et al., 2021). In railway transport, passengers' satisfaction is very important because it leads to increases or decreases in the number of customers. Railway transport is in competition with the other transport modes. This competition is constantly rising, making railway companies face more and more challenges and difficulties. One way to overcome these difficulties and challenges is to attract more customers. Consequently, customer satisfaction is a key factor for success in this market and also an important performance indicator (Do & Vu, 2020). One of the methods for assessing customers' satisfaction with railway services is to evaluate different factors, such as: the availability of services, accessibility, different aspects regarding the tickets, information, travel time, comfort, safety, or customer services (Ibrahim, et al., 2020). Also, the railway companies can introduce a system of complaints and suggestions, can design a survey for measuring passengers' satisfaction or even conduct a lost customer analysis, where to try to contact past customers and obtain information from them (Tjiptono, 2014).

In addition, passengers' satisfaction is related to the quality of the provided services, one of the most important problems of the transport services. The literature reveals the existence of different methods for measuring the quality of these services, such as: the Multi-Criteria Decision-Making method, the Structural Equation Modelling, the importance-performance analysis or the Bayesian Network (Ismael, Esztergár-Kiss & Duleba, 2023, Allen et al., 2019, Mandhani, Nayak & Parida, 2020). The quality of the transport services can also be assessed using the SERVQUAL instrument, which measures five dimensions: (1) reliability, (2) responsiveness, (3) assurance, (4) empathy and (5) tangibles (Mina-Raiu & Negreanu, 2020, Saputro, 2020). It should be also mentioned that the total quality of a service is based on three main components (Tjiptono, 2014, Saputro, 2020): technical quality (the service output received by customers), functional quality (related to the delivery of a service) and company's image (the reputation and profile of the company) and the railway services must improve all of them.

In recent years, in Romania, the development of the strategies on rail infrastructure corroborated with the investments and the measures implemented in the passenger rail transport showed the constant efforts made by the authorities to improve the quality of the railway services and passengers' satisfaction. Even if the results are still not the expected ones, with the available funding from the Transport Operational Programme 2021-2027, the National Recovery and Resilience Plan and

national funds, the quality of the railway services should improve, leading to a higher degree of satisfaction among passengers.

2. RESEARCH METHODOLOGY

The present pilot study analyses citizens' perceptions regarding the rail services provided by the Romanian Railways Company - traveller division (CFR Călători SA).

The main objectives of the research are:

- (1) To assess citizens' satisfaction concerning the rail services in Romania.
- (2) To investigate citizens' perception regarding the quality of the rail services.
- (3) To identify the aspects that should be improved in the rail services provided to citizens.

The research is based on the following research questions:

RS1: What is the level of satisfaction with the rail services provided by the Romanian Railways Company?

RS2: What is the level of quality of the rail services?

RS3: Which are the most important aspects that should be improved in order to provide qualitative rail services?

The research methodology consists of an opinion survey, based on a questionnaire designed by the authors. The survey was conducted in the Bucharest-Ilfov region on a sample chosen using the convenience method. 120 persons agreed to participate in the study,

Table 1. The main characteristics of the sample

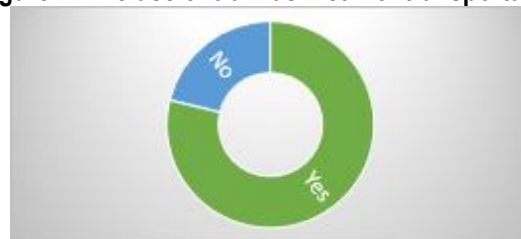
Item	Categories	Percent
<i>Gender</i>	Female	56 %
	Masculine	44 %
<i>Age</i>	18-20 years	5.3 %
	21-29 years	49 %
	30-39 years	11.9 %
	40-49 years	18.6 %
	50-59 years	12.7%
	Over 60 years	2.5%
<i>Education</i>	Highschool	45.3%
	Bachelor degree	28.2 %
	Master degree	26.5 %
<i>Residence</i>	Urban area	63 %
	Rural area	37 %

Source: author, own processing, 2024

Regarding the main characteristics of the sample, it can be observed that the majority of the participants were women, aged between 21 and 29 years old, who graduated highschool and lived in urban areas.

3. CITIZENS' SATISFACTION WITH THE RAIL SERVICES IN ROMANIA- MAIN RESULTS

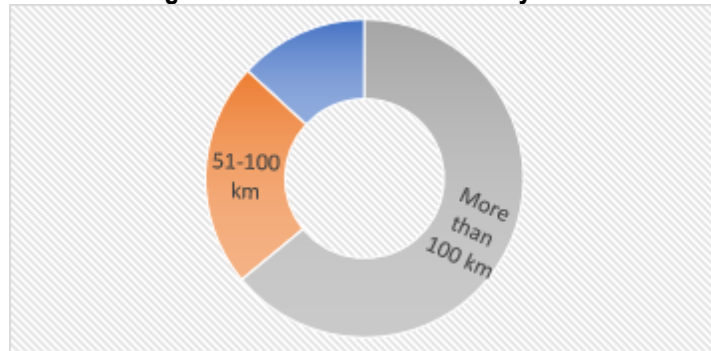
Figure 1: The use of train as mean of transportation



Source: author, own processing, 2024

First of all, respondents were asked whether they travel by train. The majority, 78.8% (95) stated that they travel by train, while the rest of them, 21.2% (25), stated that they do not use this mean of transportation on a regular basis.

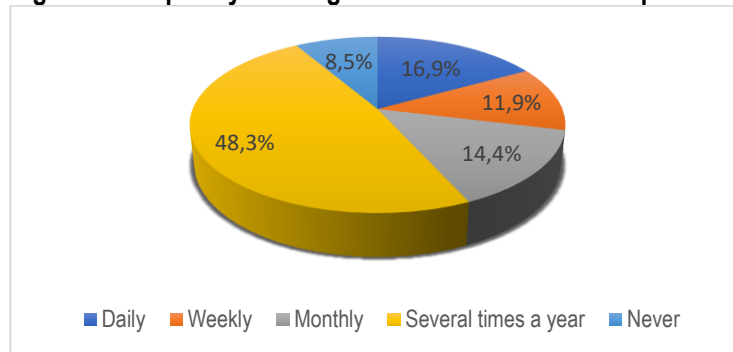
Figure 2: The distance traveled by train



Source: author, own processing, 2024

Then, respondents were asked about the distance they usually cover by train. It can be observed that most of the participants in the study- 64% (77) travel more than 100 km. The rest of them used to travel between 51 and 100 km- 22.8% (27) persons or under 50 km- 13.2% (16) persons.

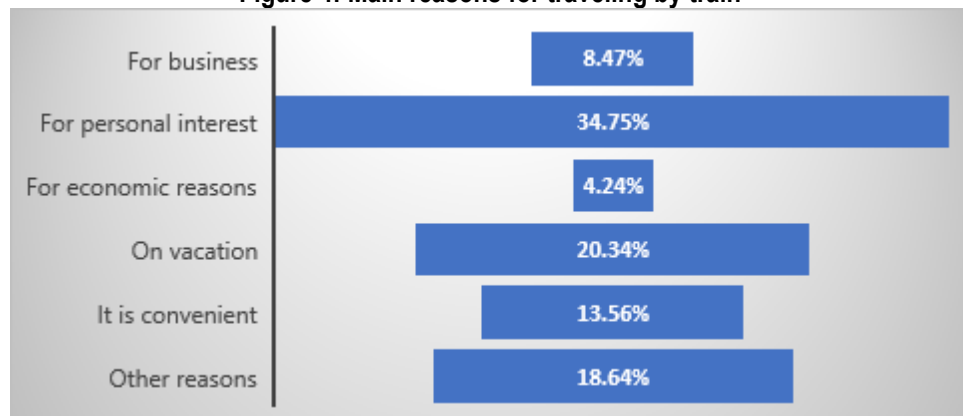
Figure 3: Frequency of using the train as mean of transportation



Source: author, own processing, 2024

Next, respondents were asked how often they travel by train. As it can be observed, the majority - 48.3% (58) stated that they use the train "several times a year". The rest of the participants use the train daily- 16.9% (20), monthly- 14.4% (17) and weekly- 11.9% (15). Only 8.5% (10) persons answered that they "never" use the train as a mean of transportation.

Figure 4: Main reasons for traveling by train



Source: author, own processing, 2024

Considering the reasons why respondents travel by train, it can be observed that the most common reason is for personal interests, with about 34.75% (42) of respondents choosing to travel for this purpose. The second reason is for holidays, with about 20.34% (24) people choosing the train to relax or explore new destinations. A small proportion of persons- 13.56% (16) considered the train as the most convenient mean of transportation alternative. Furthermore, only a few respondents travel by train for business- 10 (4.24%) or for economic rationale, due to its price- 4.24% (5).

Table 2: Passenger satisfaction with different aspects related to the conditions in trains

	1. Not satisfied		2. Somewhat satisfied		3. Neither satisfied nor dissatisfied		4. Satisfied		5. Very satisfied		Average
	%	No.	%	No.	%	No.	%	No.	%	No.	
Comfort	20,35%	25	32,74%	39	20,35%	24	18,58%	22	7,96%	10	2,61
Temperature	15,45%	19	28,18%	33	22,73%	27	27,27%	32	6,36%	8	2,81
Punctuality	31,86%	38	27,43%	32	14,16%	18	16,81%	20	9,73%	12	2,45
Cleanliness	29%	34	34,51%	41	17,69%	21	12,39%	15	6,19%	7	2,31
Luggage space	11%	13	32,43%	39	26,13%	31	23,42%	28	7,21%	9	2,84
Information about the train	21,62%	26	28,83%	34	19,82%	24	18,92%	23	10,81%	13	2,68
Train personnel	14%	17	26,36%	32	21,82%	26	24,55%	29	13,64%	16	2,98
Food and drink	38,18%	46	25,45%	30	21,82%	26	10,91%	13	3,64%	4	2,14

Source: author, own processing, 2024

Then, respondents were asked to assess on a scale from 1 to 5 (where 1- not satisfied, 5- very satisfied) their degree of satisfaction regarding different aspects related to the conditions in trains. It can be observed, that for all the mentioned items, the average of responses was under 3, revealing a small to a medium degree of satisfaction.

The frequency of responses shows that the participants in the study are at least satisfied with trains' punctuality (average- 2.45), the cleanliness in the train wagons (average- 2.31), and on last place, the food and drinks that can be provided in trains (average- 2,14).

On the opposite pole, the respondents were satisfied the most with the temperature in the train wagons (average- 2,81), the luggage space (average- 2,84), and in the first place, the attitude of the trains' personnel (average- 2,98).

On a whole, it can be considered that, although respondents choose to travel by train, they seem to be rather unsatisfied by the comfort offered by the Romanian trains. The negative perception shows the need to improve the conditions in trains by increasing the financing and investments in rail transport.

Table 3: Passenger satisfaction regarding different aspects related to train stations

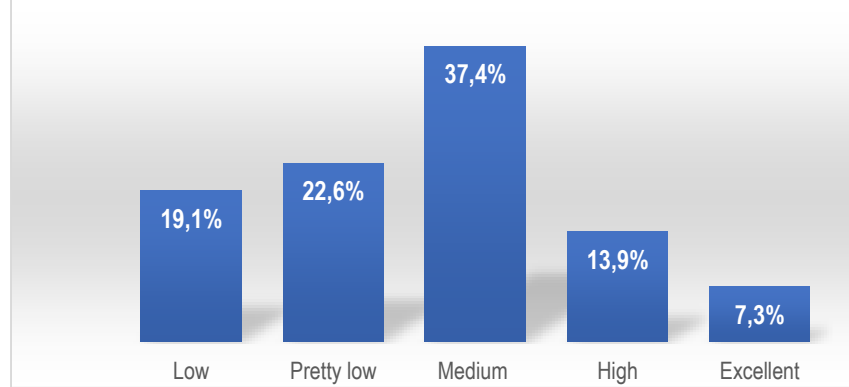
	1. Not satisfied		2. Somewhat satisfied		3. Neither satisfied nor dissatisfied		4. Satisfied		5. Very satisfied		Average
	%	No.	%	No.	%	No.	%	No.	%	No.	
Number of counters available	17,54%	21	34,21%	41	16,67%	20	23,68%	28	7,89%	9	2,70
Train stations' personnel behavior	17,59%	21	28,70%	34	18,52%	22	25,93%	31	9,26%	11	2,80
Efficiency of train stations' personnel	16,51%	20	20,36%	24	21,10%	25	26,61%	32	6,42%	8	2,77
Available ticket machines	20%	24	22,73%	27	27,27%	32	23,64%	28	6,36%	8	2,73
Information provided by train stations' personnel	14,68%	18	24,77%	30	18,35%	22	31,19%	37	11,01%	13	2,73

Source: author, own processing, 2024

Table 3 presents passengers' satisfaction (on a scale from 1 to 5, where 1- not satisfied, 5- very satisfied) regarding the personnel from the train stations and the ticket machines. As can be observed, also in these cases, the average of responses is under 3, showing a medium degree of satisfaction.

Respondents are at least satisfied with the number of counters available in the train stations (average 2.7) and satisfied the most with the rail personnel's behaviour (average 2.8). On a whole, the differences in perception regarding all the presented items are very small.

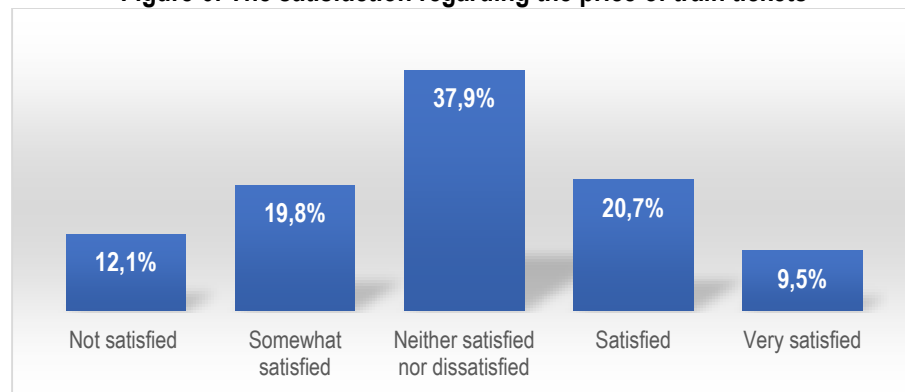
Figure 5: The perception regarding the quality of the railway services in Romania



Source: author, own processing, 2024

Respondents were asked to assess on a scale from 1 to 5 (where 1- low level of quality, 5- excellent) the quality of the rail services provided by the Romanian Railways Company. Unfortunately, the results revealed a negative perception regarding Romanian railway services. The majority of respondents expressed a low level of satisfaction as 19.1%- 23 persons considered that the railway services are of low quality and 22.6%- 27 persons answered pretty low. A high proportion of respondents, 37.4%- 45 persons declared that that the railway services are of medium quality. Only a few respondents believed that the rail services are of high quality or excellent (13.9%- 17 persons, respectively, 7%- 8 persons).

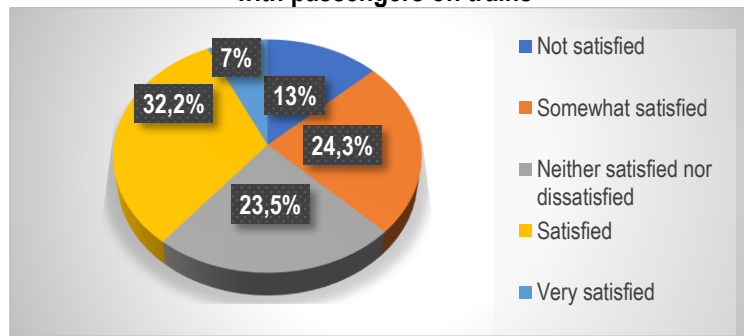
Figure 6: The satisfaction regarding the price of train tickets



Source: author, own processing, 2024

Another important aspect is the satisfaction regarding the price of the train tickets as the total cost of a train journey should reflect not only the distance but also the conditions provided by the Romanian Railway Company. Most of the respondents- 37.9% (45) persons are neither satisfied nor dissatisfied regarding the price of the tickets, revealing a neutral perception. The rest of the respondents are divided equally between a low and a high level of satisfaction. The average of responses is 3.08, showing a medium degree of satisfaction concerning the tickets' price. Regarding this aspect, it cannot be drawn a certain conclusion, but rather it can be considered that the opinions of the respondents are equally divided into negative, positive, and medium levels of satisfaction.

Figure 7: The level of satisfaction regarding the level of information and communication with passengers on trains



Source: author, own processing, 2024

The last question focused on the degree of satisfaction regarding the communication with passengers and the available information regarding trains, changes in their schedule, availability of tickets, and changes in the price of tickets. In this case, it can be observed a higher level of satisfaction, as most of the participants in the study declared to be satisfied and very satisfied (32.2%- 39, respectively 7%- 8 persons). 23.5%- 28 respondents expressed a neutral opinion, being neither satisfied nor dissatisfied. The rest of them are either not satisfied at all- 13% (16) respondents, or somewhat satisfied- 24.3% (28) persons. The average of responses was 3.26 revealing again a medium degree of satisfaction, but a better perception compared with the other factors under research.

CONCLUSIONS

The research revealed that the respondents traveled by train several times a year for personal interest or holidays. This mean of transportation is used on long distances, for more than 100 km, showing that traveling on short distances, as for work, is not very common.

Unfortunately, the study showed a rather negative perception regarding the rail services provided by the Romanian Railways Company - traveller division (CFR Călători SA). Regarding the conditions in trains, respondents were at least satisfied with trains' punctuality, the cleanliness in the train wagons, and the food and drinks that can be provided in trains. In addition, the participants in the study were satisfied the most with the temperature in the train wagons, the luggage spaces and, the attitude of the trains' personnel. The responses show the need to raise investments in the railway system and improve the conditions in trains.

Concerning the train stations, the participants in the study were at least satisfied by the number of counters for tickets available in the train stations and satisfied the most with the rail personnel's behavior. The single aspect where respondents declared a higher degree of satisfaction is related to the communication process to passengers.

Also, the study showed that on a whole, the respondents considered that the rail company provides services of medium quality, suggesting the need to improve the rail infrastructure, modernize and extend the rail network to allow trains to run at higher speeds, and increase wagon capacity. Also, there is a need to respect the schedule of the trains, due to the numerous delays accumulated by trains on various routes in Romania. Also, another important aspect to be improved is to increase the frequency of trains towards important destinations where there is a large flow of passengers.

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AUTHORS CONTRIBUTIONS

The author/authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

CONFLICT OF INTEREST STATEMENT

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

REFERENCES

- Allen, J., Eboli, L., Forciniti, C., Mazzulla, G. & de Dios Ortúzar, J. (2019). The role of critical incidents and involvement in transit satisfaction and loyalty. *Transport Policy*, 75, 57–69.
- Andrei, L. & Luca, O. (2022). Towards a sustainable mobility development in Romanian cities. A comparative analysis of the sustainable urban mobility plans at the national level. *Management Research & Practice*, 14(1).
- Do, Q., & Vu, T. (2020). Understanding consumer satisfaction with railway transportation service: An application of 7Ps marketing mix. *Management Science Letters*, 10(6), 1341-1350.
- CFR Călători, (2023a), *RAPORT DE ACTIVITATE al SNTFC „CFR CĂLĂTORI”- SA pentru anul 2023*, Online, available at: <https://www.cfrcalatori.ro/wp-content/uploads/2024/03/raport-2023-pt-publicare-romana-final-site.pdf>.
- CFR Călători, (2023b), *CFR Călători în anul 2023*, Online, available at: <https://www.cfrcalatori.ro/comunicate/numarul-calatorilor-transportati-de-cfr-calatori-in-anul-2023-mai-mare-cu-5-fata-de-anul-2022/>
- Chandra, S. & Mishra, V. (2024). Framework for Rail Transport Inequality Assessment: A Case Study of the Indian Railway Zones with Superfast Express (SE) Trains. *Sustainability*, 16(18), 8077.
- Constantin, D. L., Nastacă, C. C. & Geambașu, E. (2021). Population accessibility to rail services. Insights through the lens of territorial cohesion. *Regional Science Inquiry*, 13(1), 81-98.
- Fetting, C. (2020). *The European green deal. ESDN Report*, December, 2(9).
- Gökgöz, F. & Yalçın, E. (2024). *Performance and Productivity Analysis of the European Union Transport Sector: Evidence on Static and Dynamic Decision Models*. *Transportation Research Record*, 03611981241257503.
- Haas, T. & Sander, H. (2020). Decarbonizing transport in the European Union: Emission performance standards and the perspectives for a European Green Deal. *Sustainability*, 12(20), 8381.
- Ibrahim, A. N. H., Borhan, M. N., Md Yusoff, N. I., & Ismail, A. (2020). Rail-based public transport service quality and user satisfaction—a literature review. *Promet-Traffic & Transportation*, 32(3), 423-435.
- Ismael, K., Esztergár-Kiss, D., & Duleba, S. (2023). Evaluating the quality of the public transport service during the COVID-19 pandemic from the perception of two user groups. *European Transport Research Review*, 15(1), 5.
- Juracka, D., Valaskova, K. & Nica, E. (2024). Sustainable public policy instruments: revealing global interest in circular economy and eco-innovations. *Administrație și Management Public*, 43, 6-24.
- Krabokoukis, T., Polyzos, S. & Kantianis, D. (2024). Mapping the landscape of transport infrastructure and regional development. *Theoretical and Empirical Researches in Urban Management*, 19(1), 5-29.
- Mandhani, J., Nayak, J. K., & Parida, M. (2020). Interrelationships among service quality factors of metro rail transit system: An integrated Bayesian networks and PLS-SEM approach. *Transportation Research Part A: Policy and Practice*, 140, 320–336.
- Merciu, F. C., Păunescu, C., Dorobanțu, M., & Merciu, G. L. (2022). Assessing the value of railway heritage for sustainable development: The case study of the Oravița–Anina Railway, Romania. *Sustainability*, 14(20), 13262.
- Mihail, S. I., Oana, T., Magdalena, C., Aristia, P. I., Valentin, Z. & Daniela, M. (2023). Energy Efficiency Aspects Regarding Passengers' Transportation using Escalators. *Romanian Journal of Transport Infrastructure*, 12(2), 1-14.
- Mina-Raiu, L., & Negreanu, V. (2020). Using SERVQUAL model to measure citizen satisfaction with local taxes services quality. *Applied Research in Administrative Sciences*, 1(2), 5-11.
- Ministry of Investments and European Projects, (2022), *ANNEX V Template for programmes supported from the ERDF (Investment for jobs and growth goal), ESF+, the Cohesion Fund, the JTF and the EMFAF – Article 21(3)*, Online, available at: <https://mfe.gov.ro/wp-content/uploads/2022/01/3e7e06747db1db401f1a904afe1e99db.pdf>.
- Mnatsakanyan, T., Hayrapetyan, R. & Molnar, D. (2021). Measuring regional development disparities: Some methodological contributions and evidence from Armenia and Serbia. *Regional Science Inquiry*, 13(2), 327-348.
- National Institute of Statistics, (2024), *TRN135A - Pasageri transportati in transportul interurban si international de pasageri, pe moduri de transport*, Online, available at: <http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table>.
- Nesterov, E., Rudakova, E., Borisov, A., Morkovkin, D., Vlasov, A., Mottaeva, A. & Gavrilova, E. (2022). Development of transport service to the population in the social and economic spheres of the state. *Transportation Research Procedia*, 63, 1404-1409.
- OECD (2020), *Transport Bridging Divides*, OECD Urban Studies, OECD Publishing, Paris, <https://doi.org/10.1787/55ae1fd8-en>.

- Permana, A., Aima, M.H., Ariyanto, E., Nurmahdi, A., Sutawidjaya, A.H., & Endri, E. (2021). The effect of compensation and career development on lecturer job satisfaction. *Accounting*, 7(6), 1287-1292.
- Prus, P. & Sikora, M. (2021). The impact of transport infrastructure on the sustainable development of the region—Case study. *Agriculture*, 11(4), 279.
- Riyanto, S., Endri E., & Herlisha, N. (2021). Effect of work motivation and job satisfaction on employee performance: Mediating role of employee engagement. *Problems and Perspectives in Management*, 19(3), 162-174.
- Romanian Government, (2020), *HOTĂRÂRE pentru aprobarea Strategiei de dezvoltare a infrastructurii feroviare 2021 – 2025*, Online, available at: <http://sgg.gov.ro/1/wp-content/uploads/2020/11/NF-3.pdf>.
- Saputro, F. G., Sasono, A. D., Suyono, J., Elisabeth, D. R., & Bonn, A. T. B. (2020). The Effect of Customer Relationship Marketing and Service Quality on Customer Retention with Customer Satisfaction as A Mediating Variable In Forwarding Companies In Surabaya. *International Journal of Entrepreneurship and Business Development*, 3(4), 470-478.
- Sun, X., Yan, S., Liu, T. & Wu, J. (2020). High-speed rail development and urban environmental efficiency in China: a city-level examination. *Transportation Research Part D: Transport and Environment*, 86, 102456.
- The National Council of Supervision in the Railway Field, (2017), *STUDIUL DE PIAȚĂ ÎN TRANSPORTUL DE CĂLĂTORII PE CALEA FERATĂ*, Online, available on: https://www.consiliulconcurrentei.ro/uploads/docs/items/bucket12/id12144/studiu_de_piata_transportul_de_calatori_pe_calea_ferata.pdf.
- Tjiptono, F. (2014), *Pemasaran Jasa*. 2nd edn. Yogyakarta: Andi.
- Widiyanto, P., Endri, E., Sakti, R. F. J., Setiawan, E. B., Manfaluthy, M., Suryaningsih, L. & Limakrisna, N. (2021). The relationship between service quality, timeliness of arrival, departure flip ship logistics and people and customer satisfaction: A case in Indonesia. *Academy of Entrepreneurship Journal*, 27(6), 1-12.