

Quality Evaluation in Regional Passenger Rail Transport

Procjena kvalitete regionalnog putničkog željezničkog prometa

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Summary

The article presents the methodology proposal of comprehensive evaluation of the provided services quality in regional passenger rail transport. The proposed methodology of the quality evaluation can be used for comparing the integrated transport systems by the quality level. It can be utilized as an evaluation of the provided services in the relationship with the submitter and the supplier as well. The methodology proposal fully accept the transport policy of the EU, specifically the White Paper 2011 – The Roadmap to a Single European Transportation Area - Towards a competitive and resourceful efficient transport system, that are also included in the quality norms and transportation operational programme in Horizon 2020.

KEY WORDS

quality evaluation
services quality
quality standards
regional passenger rail transport
integrated transport systems
carrier
customer

Sažetak

U radu je predstavljena prijedlog metodologije za sveobuhvatnu procjenu kvalitete usluga koje se pružaju u regionalnom putničkom željezničkom prometu. Predložena metodologija procjene kvalitete može se upotrijebiti za usporedbu integriranih prijevoznih sustava u odnosu na razinu kvalitete. Može se koristiti i kao procjena pruženih usluga u odnosu između pružatelja i primatelja usluge. Prijedlog metodologije u potpunosti podržava prijevoznu politiku EU, posebice Bijelu knjigu 2011. – Autokarta za jedinstveno europsko prijevozno područje – prema konkurentnom i isplativom sustavu prijevoza, što je također uključeno u norme kvalitete i prijevozni operativni program za Obzor 2020.

KLJUČNE RIJEČI

procjena kvalitete
kvaliteta usluga
norme kvalitete
regionalni putnički željeznički promet
integrirani prijevozni sustavi
prijevoznik
korisnik usluge

INTRODUCTION

The task of quality standards for services in regional rail passenger transport are intended to establish a uniform level of provided services, while drawing inspiration from EN 13816. The quality standards have to be set according to the strategic needs of the passengers, so that they can be set as the basis of a contract with a customer to a minimum uniform level of quality of service that is provided. There is also a need for the measuring and evaluating the quality of the services in regional passenger rail transport so that it can be compared in relation to other modes of public transport. It is necessary to know the perception, quality and value of the provided services for the client (passenger) and set the functioning with the permanent process of evaluation of these provided services. The view on the quality provided services in passenger transportation by the subject under the transport market is important. The role of the public authorities is the regulation given the impact of the transport

process on the society and the environment [1].

The main aim of the clients of the public services is established on being mutually intertwined between the customer quality and sufficiently simple comprehensive public transport system, while at the same time it also minimizes financial claims. The intention of public passenger transportation is to build a competitive system for motorized individual transport. It is necessary to establish new methodology on the definition of quality requirements in the regional rail passenger transport in support of these aims. This methodology currently does not exist [1], [2].

PROPOSAL OF THE METHODOLOGY FOR RATING QUALITY STANDARDS

The basic principle of the policy for the quality of the services in regional passenger transport is to satisfy the

customer's requirements. Therefore it is necessary to focus on the compliance with the established quality standards. The role of the order body of the transport services is to ensure the optimal transport accessibility of the regions with the effective use of resources and to implement the principles of transport policy. The task of the coordinator is to undertake to fulfil the requirements of the EN ISO 9001: 2009 and STN EN 13816 standard [3]. Based on the above, the coordinator shall establish and maintain a quality management system. Next, it is necessary to apply the principles of improvement of all of those processes that affect the quality of the services provided in public passenger transport. The effective provision of quality services requires the introduction of control processes for any activity which affects the fulfilment of the customer requirements [4], [5].

The task of the provider of the service is to ensure all activities associated with the provision of transport services in the appropriate quality to meet all of the established standards of service quality. The carrier (the undertaking railway) must ensure the safe, convenient, fast and affordable transport for the passenger (the customer) at a maximum fulfilment of their requirements. The railway undertaking (the carrier) must provide the services for passengers in accordance with the approved quality standards at the European level, in order to retain the existing customers that can potentially increase the demand for transport services. The carrier must also ensure the high quality standard of its staff and technical resources. The most valuable assets of the company are the professional qualifications and skill of the staff. For this reason it is necessary to constantly monitor the increasing proficiency, as well the career development of the employees, in relation to the fulfilment of the defined quality criteria relating to the staff and their approach to customers [1], [4].

The proposed methodology is based on the premise to provide the maximum value for the customers. The realization of transportation services is the responsibility of the carrier. The ensuring transport service is a public service that must satisfy the transportation needs of the population in the region. The requirements of passenger (the customer) defines subject, which ordered transport performance. In the proposed methodology, the level of provided services in regional passenger transport that are ordered by transport body (state or region) is rated. This body is responsible for evaluating customer (passenger) requirements and coordinating transport performances.

The methodology integrates the solution for the evaluation of the quality standards in the regional passenger rail transport on two levels [4], [5], [6]:

- The relationship between the order body of transport services and carrier
- The relationship between the order body of transport services and customer (passenger)
- The relationship between the order body of transport services and infrastructure manager.

This relationship must be evaluated separately. A flowchart

was designed for drawing up the overall evaluation of the quality standards in regional rail passenger transport. This flowchart is on *figure 1*. It was necessary to create this flowchart to define the core of the process as the first step. The next step was to define the roles of the process [1], [6].

EVALUATION SERVICES OF RAIL CARRIERS

The evaluation of service rail under taking is based on the quality standards setting and subsequent evaluation of its fulfilment (*figure 1*) [4], [5].

The Selection Criteria of Quality: The search for measurable quality criteria, which will be part of the contractual obligation of the carrier in providing the ordered transport services. Especially are oriented on transport processes [5].

The Incorporation Quality Criteria in the Contract for the Provision of Transport Services: the implementation of the defined quality standard that is measurable in the contract. Defining the standard must be accurate and must contain defined penalties. This activity includes the overall concept of the contractual relationship between the order body and carrier. It comes to the entire agreement and all its terms [5], [6].

The Periodical Control of Fulfillment the Quality Criteria, which are incorporated into contract: the submitter checks at the compliance with agreed quality standard at regular intervals. The physical check shall usually be made in the form of the "hidden buying" staff of submitter. The carrier has to tolerate this control, which is also enshrined in the agreement. The carrier has the duties of making of traffic statistics, mainly statistics of selling travel tickets, passenger flows, as well as the number of cancelled trains and the compliance of timetable [5], [7].

The Level of Services Meets the Requirements of the Order Body: the order body based to control the submitter compares the level of provided services and is according to the contract. In case where the submitter discovers the failure to comply with the defined quality standards, he or she can impose sanctions upon the carrier [6], [7].

Submitter Dissatisfaction: identified deficiencies can be sanctioned: the order body shall examine whether it is possible to penalize unfulfilled the quality standards. The deficiencies can be found based on the control of order body or from the realized quality assessment based on customer survey.

Impose Sanctions on the Carriers under Contract: the submitter imposes sanctions based on identified deficiencies that can be sanctioned under the contract [1], [5], [6].

Request for correction of deficiencies: when is impossible to penalize identified deficiencies, order body invites carrier for remedial action to restore of quality standards provided services.

Extraordinary control of fulfillment of contractual criteria: order body shall realize random controls that are oriented on the quality standards provided by railway undertaking [5] - [7].

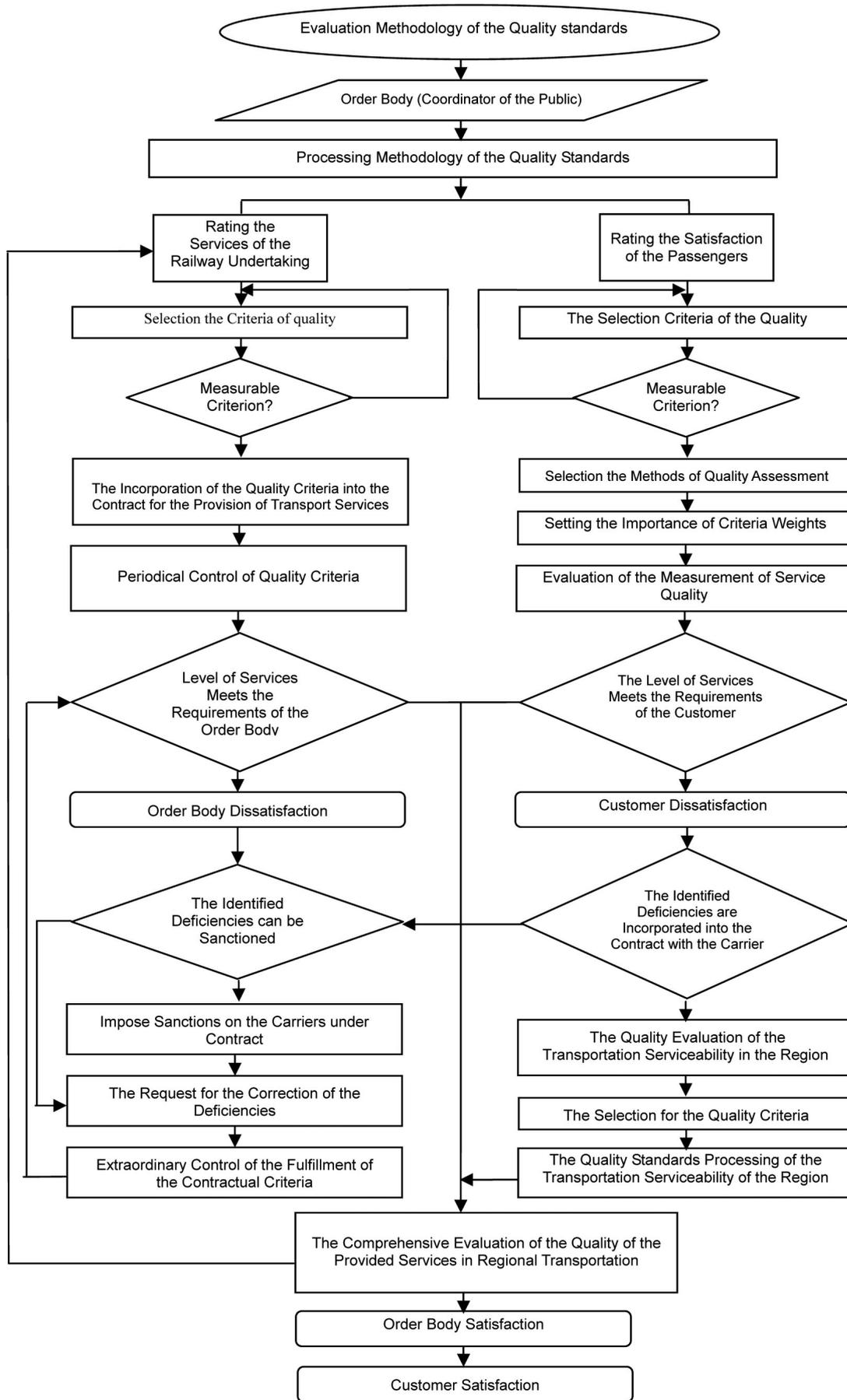


Figure 1 Methodology of the Rating Quality Standards in the Regional Passenger Rail Transport
Source: authors

EVALUATION OF PASSENGER SATISFACTION

The evaluation of passenger satisfaction (the customers) with provided transport services is based on the realization of regular traffic survey, which also includes quality assessment. This process implements the proposed steps according to the proposed methodology for measuring of provided quality services. The proposed methodology for examining the quality of the customer and determines the value of the transport service perceived transport users [4], [6],[8].

The Selection of the Criteria of Quality: the search for measurable criteria of quality, which are part of the quality assessment transport services. It is the most important step that allows one to get the perception of service quality and to determine what the customer expectations are. It is realized by survey [8-10].

The Selection of the Method Quality Assessment: the choice of objective assessment methods (Saaty's method, benchmarking etc.). On these methods we can obtain concrete and objective results [9], [10].

The Setting importance of the Weights of Criteria: the setting the weights for proposed criteria by the chosen approach [9], [10].

The Evaluation of the Measurement of the Quality of the Provided Services: it is necessary put the accent on the methodically correct procedure when we evaluate measurement of the quality of the provided services.

The Level of Service Must Meet the Requirements of the Order Body: there is the assessed perceived satisfaction and maximum value of the customer satisfaction. The approach of multi-criteria analysis can be used. A comprehensive assessment can be processed in the case where the quality level of the provided services meets the customer's perspective. In case when the customer is not satisfied with quality level of provided services, there is the need to check the source of the dissatisfaction according to the concluded contract. Then the carrier must make remedies to improve the standards of quality [5], [8].

The Identified Deficiencies Are Incorporated in the Contract with the Carrier: after finding that the customer is dissatisfied with the criteria of quality standards, the procedure continues as in the case of previous step. It is necessary to search for the possibility of how these deficiencies are to be penalized [5],[8].

The Quality Evaluation of the Transportation Serviceability in the Region: the task of this activity is the quality evaluation of the rail transportation and its impact on the transportation serviceability assessment of the region. It is an activity of order body that must respond to the transportation needs of the population. The transportation needs of the population come up from order body's surveys and also from customer transport surveys.

The Selection Criterion of the Quality: the task of this activity is to set the quality criteria of rail transportation serviceability in the selected region. This selection comes from previous activities and from based assessed results. Then are chosen from the relevant quality standards which are measurable [4], [6-8].

The Quality Standards of Processing the Transportation Serviceability of the Region: the task of this activity is a concretization a detailed elaboration of quality standards processing in regional transport.

COMPREHENSIVE EVALUATION OF THE QUALITY OF THE PROVIDED SERVICES IN REGIONAL TRANSPORTATION

The methodology of the evaluation quality standards in regional rail passenger transport assesses from the point of view of the order body that evaluates request for carrier and includes the evaluating the measurement of quality provided services at some time. The generalized methodology is based on the successive steps. The task of this methodology is searching for the measurable quality criteria [4], [8].

The quality standards allow for monitoring, evaluation and comparison of the single criteria of provided services. The evaluation of the measurement of the quality provided services brings to those measures and help to continuously improve the quality services. The quality standards of regional rail passenger transportation shall be binding for all railway undertakings that provide rail passenger services. The infrastructure manager must participate in order to fulfil the same standards. The update of the quality standards should be implemented once a year as a rule, after consultation with all of the stakeholders [4], [5].

The method of evaluation must respect the requirements of the multi-criteria background, for example if the customers (the passengers) demand fulfilment of a number of the quality characteristics at once from the carrier [4].

By providing the transportation service, it is necessary to define the service specifications, the evaluation process and then regularly measure and control the process of providing these services [8].

Part of the method of evaluating the quality must also be that of creating a rating scale. A rating scale gives the possibility to compare the measured values and then reconsider the quality of provided services. [7], [8].

The task of the comprehensive evaluation is the harmonized assessment quality of the services from the customer's perspective, as well as from the perspective of the submitter. Customer satisfaction is achieved if the level of the quality of the service provided meets the requirements of the customer and also corresponds with the required level of the perceived quality from the customer's perspective. These facts could mean satisfied the submitter and cycle of evaluating should be end in that period [4], [8].

In the event that the quality of the provided services does not satisfy the requirements of the customer, it is necessary to take corrective measures to improve the quality standards. It is necessary to repeat the evaluation process of quality services on the part of the carrier (railway undertaking) [4], [5].

The task of the order body (the coordinator of transport performances) as a key player in the assessment of the quality standards, measuring the quality of services and control contract standards is to represent the interest of the customers by providing public transportation services [4] - [8].

CONCLUSION

The Saaty method appears to be appropriate. Inputs for the calculation were determined in the research team, and each member of the team could evaluate the relationship between the criteria using a nine-point scale. From this overview of

setting criteria weightings using the Saaty pairwise comparison method, it is clear that the highest priority is assigned to the transport infrastructure and also to the transport characteristics of the region, which are represented by the density of the road network and the number of higher category AGTC lines passing through a given region, as well as the amount of goods transported by road transport [2], [10].

The least important criteria are the number of large state enterprises and the level of direct foreign investment in the region. Large enterprises are partly assumed to have sufficient funds to build and manage their own logistics sites and therefore they will not be the target customers of the large logistics objects. As for direct foreign investment, it does not necessarily produce the desired effects by increasing the level of employment; they serve only as an indirect indicator of the financial performance of the given region.

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