

THE ROLE AND IMPORTANCE OF QUALITY ASSURANCE AND QUALITY MANAGEMENT WITHIN A ROAD FREIGHT TRANSPORT ORGANIZATION

Alexandra-Florina IAMANDII^a, Aurel-Mihail ȚÎȚU^{b}, Maria POPA^c,
Dan Theodor ANDRONIC^d*

^{a, d} National University of Science and Technology Politehnica Bucharest, București, Romania

^b Lucian Blaga University of Sibiu, Sibiu, Romania

^c University of Alba Iulia, Alba Iulia, Romania

ABSTRACT

Throughout time, it has been proven that the quality management approach has been one of the main drivers of organisational success. Numerous studies showcase how it can be applied within various fields, yet most are focused on production instead of services. Even if there are a few studies focusing on total quality transportation (TQT), there is not enough literature available in order to support the importance of this approach and to facilitate its implementation within this field. This study will focus on assessing quality management practices and how they can be applied within the chosen industry. In order to accomplish the purpose of this paper, the principles of total quality management will be applied on business models used within the transport industry. It is of utmost importance to understand how the transport industry operates and what are the weakest spots within such organisations. The highlighted issues should be analysed through the lens of total quality management, to provide solutions that can easily be applied by practitioners. Therefore, research will be focused on both theory and practice, to showcase similarities and differences and highlight issues that may not have previously been taken into consideration. This paper aims to provide an analysis of the quality management and quality assurance framework and its application on the transport industry.

KEYWORDS: *quality framework, Transport quality assurance, TQM, TQT.*

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1. INTRODUCTION

Organisations must constantly adapt to the ever-changing environment to survive and succeed in the global business dynamic. Thus, it is of utmost importance to seek strategies that can ensure rapid adaptability and, at the same time, not endanger, but increase the profitability of the organisation. Over the course of the past decades, quality and management systems focused on quality have been put into the spotlight as a method to enhance overall organisational performance in various fields, including the supply chain (Casadesús & de Castro, 2005; Vanichchinchai & Igel, 2011; Quang et al., 2016) and its components.

Quality has become a key element regarding differentiation between organisations, especially from a customer's perspective, as well as a driver of success (Akhmatova et al., 2022). Furthermore, the definition of quality that is universally accepted is that it refers to the extent to which a product or a service, through its characteristics, can meet and exceed customer needs, according to ISO 9000:2015.

* Corresponding author. E-mail address: mihail.titu@ulbsibiu.ro

However, the concept of quality is a multi-faceted one. It does not only define the final good or service, but also the processes within the organisation. Furthermore, there are several aspects that can be accounted for when defining this concept, such as adherence to certain standards, product characteristics and product usefulness, the perceived value of a certain product, perfection, exception or even transformation (Harvey & Green, 1993; Van Kemenade et al., 2008). For services, the same perspectives apply. Thus, quality is a more complex subject than it seems to be. Even until now, there is no definition that truly encompasses all the different perspectives regarding this concept.

Quality management is focused upon enhancing overall organisation performance through focusing on products, processes and human resources. Over the previous years, more and more scholars have analysed how quality management can present itself as a good strategy for organisations within the field of road freight transport (Ulitskaya et al., 2023; Zhemchugova et al., 2022; Tazhiyev et al., 2024) and even went beyond and stated that freight transport and logistics in Europe are in terrible need of a new, more specific quality standard (Islam & Zunder, 2014). Therefore, even if this area of study has recently gained popularity, there is a lot more to be discussed. For instance, there are very few models that small and medium organisations can apply so that they facilitate the implementation of a quality management system. Even if the principles of quality management provide strong and specific guidance for organisations that want to pursue a strategy based on quality. However, these principles have been formulated with a focus on companies that provide products, not services. Therefore, a clear framework on how these principles apply to small and medium enterprises operating in the field of road freight transport is necessary. Furthermore, organisations need to focus on more than quality and the principles of quality management should they wish to follow such a strategy. Quality assurance plays a crucial role in ensuring that the internal and external quality standards are met and exceeded.

The purpose of this paper is to highlight the importance of total quality management within a road freight transport organisation, emphasising on quality assurance not only as a process, but also as a tool supporting systems based upon total quality management. To accomplish this objective, this paper will follow a specific approach, analysing one medium sized company operating within the Romanian road freight transport market. Thus, after diving into the necessary literature review regarding this topic, the fundamental principles of quality management will be applied within the chosen organisation. Furthermore, the process of quality assurance will be presented, compiling a framework that could be applied within such organisations. The study will consider relevant findings from previous academic sources to validate the results and, thus, present a framework for quality management within the research market.

To achieve its goal, this paper further be structured in four main sections. The first section to follow the introduction is the literature review, which aims to provide a clear background of the research topic and clarify the concepts that shall be applied further on. Moving on, the next section shall provide information regarding the methodology behind this study. The following section comprises the results of the study, accompanied by discussions on how this study integrates within existing literature and how it can be a useful piece of information. Lastly, this paper will include relevant conclusions of this piece of work and limitations of the research, as well as potential further paths to be followed in future work.

2. LITERATURE REVIEW

The following section aims to provide a clear background of quality management and quality assurance. To accomplish its purpose, the first concept to be analysed is quality, especially what quality means within the road freight transport industry. Furthermore, the next step is to present the concept of quality assurance and its importance, as well as means, methods and indicators of quality assurance within this specific field. Moreover, the notion of quality management will be analysed, with a particular focus on the selected industry.

2.1 Quality

Quality is a particularly important aspect in any organisation. It is often perceived as the key element in the process of differentiating organisations, being a driver of creating and maintaining competitive advantage. Numerous studies demonstrate that there is a relationship between quality and competitive advantage as well as between quality and organisational performance (Lakhal, 2009; Elshaer & Augustyn, 2016; Flynn et al., 1995).

Even if quality is not at all a novelty, as this concept has roots in the very old ancient days (Elassy, 2015; Mitra, 2016), there is still difficulty in compiling a definition to include all the aspects related to this concept. Over time, many academicians tried to come up with a definition of quality that would encompass all its meanings, yet the most referred to dates to 2015, stating that quality refers to the collection of attributes possessed by the subject matter, be it a product or service, that determine its ability to fulfil both explicit and implicit requirements (ISO, 2015a). Quality is usually associated with object attributes and the fulfilment of consumer needs and expectations (Kyrychenko et al., 2020). Even if a singular, one size fits all definition is yet to be determined, there is one key element that all definitions encompass: the customer.

Consumer experience is ultimately the final stage in the evaluation of the quality process (Chandrupatla, 2009). Consumer requirements and needs must be listened to and understood so that the product or service offered can be favourably evaluated. It is imperative to transform consumer requirements into quantifiable attributes that can be found in a particular product or service. Thus, the determination of quality rests with the user of the service or product, rather than the provider, and quality assessment is necessary to establish user requirements (Žeželj, 2013). Thus, it is noted that a product or service must be continuously analysed from the point of view of quality, to be able to increase its utility and, implicitly, its value. By combining organisational quality improvement processes, defect identification, both operational and product, and customer feedback, quality can be achieved and maintained.

2.2 Quality assurance

Karapetrovic and Willborn (2000) define quality assurance as a process through which the organisation ensures that the customers' needs and expectations regarding a product or service are always met. This definition is, however, incomplete, as quality assurance does not only involve the final product or service, but also internal processes. Thus, the concept of quality assurance can be defined as a systematic procedure designed to instil confidence among stakeholders that the provision of goods or services, including input, process and outputs, meets or exceeds predetermined expectations or minimum standards.

The quality level of transport services is constituted by a set of indicators and characteristics that define the transport process. The parties involved in this process include the carrier, the vehicle operator and the owner of the relevant infrastructure. This process encompasses all stages, starting with the execution of the contract and ending with the delivery of the goods to the final destination (Ulitskaya et al., 2023).

The evaluation of the quality of transportation services is usually based on the performance and reliability of the providers, which can be evaluated from several perspectives (Neamțu, 2024):

- Maintaining the quality of the transported goods;
- Meeting the delivery deadlines;
- Compliance with the specified quantity;
- The technical state of the vehicles;
- Costs.

Moreover, since each category of goods in the transportation sector has unique characteristics that determine the assessment of its quality, it is essential for the quality management process to incorporate specialised methods for evaluating and analysing the factors that affect the overall quality

of both the transported product and the transport service. The evaluation of service quality in the transportation industry can be categorised into three specific dimensions: vehicle quality, technical condition of vehicles, and the level of customer service (Ulitskaya et al., 2023).

Assessing quality within a road freight organisation proves to be difficult because, as a supplier, the organisation provides a service, and as a customer, it purchases both goods and services. From this point of view, the quality assurance process is made more difficult. Looking at the organisation strictly from the point of view of the organisation as a service provider, two distinct sets of problems are identified (Blanquart & Burmeister, 2009):

- Challenges associated with the interaction between service users (customers) and suppliers (road freight organisations);
- Difficulties in trying to evaluate production in service activities.

2.3 Quality management

Since its conceptualisation, quality management has evolved and adapted according to the dynamics of the organisations and their fast-paced environment (Fundin et al., 2020). Nowadays, quality Management has developed as a management framework to enhance organisational effectiveness, competitiveness, and innovation (Ebrahimi & Sadeghi, 2013). Through time, quality management has faced some criticism regarding its inability to attain certain expectations in some organisations, as well as its similarities with what many scholars call good management practices (Dahlgaard-Park, 2011). However, its popularity denotes that this management practice has proven as a successful strategy for organisations in various fields.

The most frequent form of quality management applied within organisations is total quality management (Dahlgaard-Park, 2011). However, to implement such a strategy, it is necessary that all resources are aligned with the new philosophy to be adopted. Therefore, understanding what quality management is and identifying methods to implement this concept are of utmost importance. In this regard, Kanji (1990), describes total quality as an organisation's ability to continuously meet and exceed customer needs and expectations, while maintaining low costs.

The principles of quality management are essential in pursuing a business strategy focused on quality (Kuei & Lu, 2013). According to ISO (2015b), there are seven key quality management principles: focus on the customer, leadership, engagement of people, process approach, improvement, evidence-based decision making and relationship management. While ISO presents this set of principles to be followed, it does not provide a guideline on how these can be applied.

In their paper, Martin et al. (2019) argue that there is a very limited number of studies showcasing how quality management is actually put into practice in organisations. Therefore, the need for further research and frameworks to be followed by organisations arise. Moreover, in the field of road freight transport, there are even less valuable resources that can indicate a path for an organisation that wishes to pursue a qualitative approach (Metri, 2006; Ulitskaya et al., 2023). Furthermore, most of these studies are based upon non-European markets, which may influence the results, as practices and regulations differ from one geographical market to another.

3. METHODOLOGY

To accomplish the purpose of this study, a broad literature review has been carried out and systematically presented in the previous section. After providing a clear background for the research topic and understanding how quality assurance and quality management integrate within organisational practices, a transport organisation has been selected as the subject of the study. The main criteria for selecting the organisation were size, field of activity and data availability. The chosen organisation is a medium company operating within the field of road freight transport, with a median number of 80 employees and a net turnover of almost 10 million euros. The organisation and its

activities were studied for a period of nine months to understand its particularities and its method of operating. Upon understanding the goals of the organisation and its need for a strategy that would facilitate growth and smoother operations, a strategy focused on quality management has been proposed as a potential approach. Thus, this research paper showcases how a medium organisation can integrate concepts such as quality assurance and quality management in order to attain its objectives.

4. RESULTS AND DISCUSSION

4.1 Quality assurance in road freight transport

Quality assurance is a systematic process of monitoring and evaluating a product or service. It involves checking for defects or errors to ensure that the product or service meets the required standards and specifications. Quality assurance also includes the implementation of corrective measures and continuous improvement strategies to raise the overall quality level of the product or service. Thus, its main objective is to identify and propose solutions to improve established standards and performance, while ensuring optimal functionality to prevent problems and promote seamless operations, ultimately leading to improved products and services. Figure 1 illustrates the constant quality assurance process.

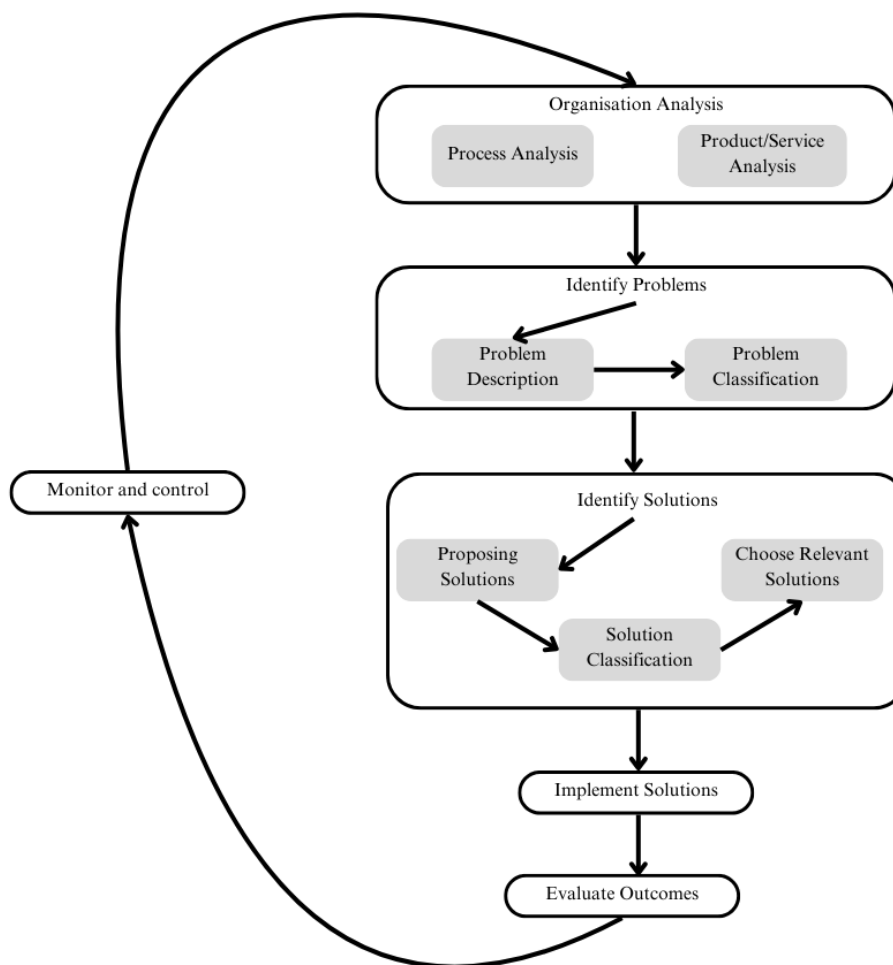


Figure 1. Quality assurance process framework

Source: Author's own contribution

Internal quality assurance measures are implemented to check that this is happening and usually involve regular audits and inspections to ensure that all processes and procedures are being followed correctly. This may include reviewing documentation, observing operations and collecting data for analysis. These measures help identify any potential areas for improvement and ensure that the product or service consistently meets or exceeds the required standards. In addition, internal quality assurance also involves providing training courses and support sessions to employees to ensure the skills and knowledge required to maintain high quality standards throughout the organisation.

4.2 The principles of quality management applied in the field of road freight transport

Quality management is an essential function in any organisation. There are numerous arguments and studies that support this claim. However, understanding the concept is not enough to be able to apply it. In this sense, the International Organization for Standardization (ISO) (2015b) formulated a list of 7 principles of quality management, which are found within the standards ISO 9000:2015 and ISO 9001:2015:

(a) Customer orientation

In order to establish sustainable and mutually beneficial relationships between consumers and organisations, facilitating the provision of transport services that meet consumer satisfaction, it is imperative to develop a dedicated system that includes the transport organisation (subject of management) and consumers (object of management) (Kryvoruchko et al., 2018). This dedicated system should prioritise open communication channels between the transport organisation and consumers, allowing for feedback and promptly addressing any concerns or issues. In addition, it should also incorporate continuous improvement and innovation mechanisms to consistently meet and exceed consumer expectations in the ever-evolving transportation industry.

(b) Leadership

Considering the fact that the human resource is one of the most valuable resources within a road freight transport organisation, as well as the impossibility of replacing it with any other type of resource, leadership is a key aspect in the smooth running of operations. Also, by applying the concept of leadership, employees may be less reluctant to share their views and provide feedback to the organisation, which supports the implementation of a total quality management system. Thus, the processes can be properly analysed, since the source of the information is precisely the person responsible for their fulfilment.

In addition, it is the duty of top management to develop and implement systems that influence the production of products and services, as well as to create and promote an organisational culture based on the principles of quality management (Teoman & Ulengin, 2017). Thus, leadership is one of the key factors influencing the success of quality management, being a key element both in the good functioning of the organisation and in its development.

(c) Involvement of people

To be able to identify the aspects that can be improved at all organisational levels, it is necessary to analyse all the processes and operations within an organisation. Analysing them externally is not only expensive, but often has gaps, as those who carry out the analysis do not have the experience of those who actually carry out that activity and can only partially identify the problems. Also, employee engagement is a more comprehensive approach to measuring employee motivation and its impact on organisational effectiveness (Nienaber & Martins, 2020). This perspective considers multiple factors at the individual, team/unit, and organisational levels. Thus, the involvement of people within the organisation is essential, as they know best the operations, activities and problems that occur, frequently or less frequently, within an organisation. For example, in a road freight transport organisation, the dispatcher, who works in the administrative headquarters, cannot identify possible problems with the trucks, but the drivers can. Also, the management of the organisation cannot identify the organisational problems until they affect the performance, but the lower-level employees,

who start the processes in question, can identify the problems and propose solutions in a timely manner, so that the consequences on the performance are minimal.

(d) Process approach

A process can be defined as a series of activities that add value to an input (input/primary resources), from the customer's point of view, and provide an output (output/product or service) for the customer, whether internal or external (Navarro, 2021). Processes are crucial for organisations to achieve their goals and operate effectively. They involve synchronising many resources, including people, materials, and technology, to transform inputs into desired outputs. By analysing and optimising operational procedures, organisations can increase efficiency, decrease expenses, and increase customer satisfaction.

The process approach within a road transport organisation is extremely important, as it allows the analysis of all the activities carried out, the identification of weak points or errors and allows the improvement of the transport process. This approach facilitates the creation of development strategies, but also increases performance.

(e) Improvement

Quality management is a continuous process of analysis, development, improvement and innovation of all operations within an organisation. Thus, if the previous principles supported the analysis of an organisation's activity at all levels and the identification of problem areas or areas that could be improved, the next step consists in formulating improvement strategies and applying them.

The existence of the organisation is based on attracting and retaining customers. This can only be done by understanding and meeting the demands and needs of consumers, but these are constantly changing. Thus, understanding dynamic customer requirements and implementing improvements based on their input is crucial (Gerasimov, 2014). In road freight organisations, understanding customer needs is crucial given the competitive market and low or no switching costs. In this sense, organisations must constantly improve their processes to be able to satisfy the needs of consumers and to differentiate themselves from competitors.

(f) Decision-making process based upon concrete evidence

By analysing the processes within the organisation, both management and employees can make informed decisions that produce positive effects in the shortest possible time or that favour the avoidance of improper or crisis situations. Also, justifying decisions with concrete evidence positively influences the quality of decisions. This aspect depends on the level of detail used, with the highest quality decision result likely to be one that considers all aspects worth considering in relation to the scenario (Akdere, 2011).

Within a road freight organisation, individuals make different decisions at each hierarchical level based on shared and individual knowledge. This fact is caused both by the dynamism of the industry and the influence of external factors. By promoting the principle of motivating decisions with concrete evidence, the performance of the organisation will be improved, and, at the same time, operations will become more efficient.

(g) Relationship management

The performance of an organisation is influenced by the activities of various stakeholders, such as customers, employees, suppliers or shareholders, but also by society and its expectations. The organisation is more likely to achieve sustained success if it manages its relationships with all its stakeholders to maximise the impact these relationships have on the organisation's performance (ISO, 2015b). The organisation places a significant emphasis on the management of its relationships with networks of partners and suppliers, as they support its operation and development. For example, within a road freight organisation, suppliers are often competitors. Maintaining a favourable relationship with them leads to the creation of an economically beneficial partnership.

To implement a quality management strategy, it is necessary to implement all seven fundamental principles of quality management. It is also imperative to consider the particularities of the road

freight industry. For example, the duality of quality from the evaluator's point of view implies the need for a complex quality audit, which takes into account both the quality of the service provided and the quality of the processes. Thus, relevant measures can be taken to improve quality, depending on the weak points of the organisation. A model for this has already been proposed in another article (Kyrychenko et al., 2020). However, this model cannot be considered entirely correct, as it can only be applied within an organisation that provides transport services only by its own means. One of the peculiarities of the road freight industry is the fact that often an organisation's competitors can simultaneously be its customers and suppliers. For example, in the situation where the transport request received by an organisation exceeds its resources, it will resort to freight forwarding, i.e. selling the transport operation to another carrier that has availability. Intermediation is a common process in this industry. Thus, in order to be able to maintain the quality standards, it is necessary that the partners also adhere to the same standards. Implicitly, the fundamental condition for the provision of a high level of quality of transport services is to achieve a high degree of efficiency in the interaction between organisations in the transport industry (Ulitskaya et al., 2023).

The application of the fundamental principles of quality management is a complex, cyclical process that, once implemented, must be maintained. Thus, the steps are not a chain of steps with a clear destination, but an interconnected mesh. Figure 2 presents a graphical model of the application of quality management principles within a road freight transport organisation.

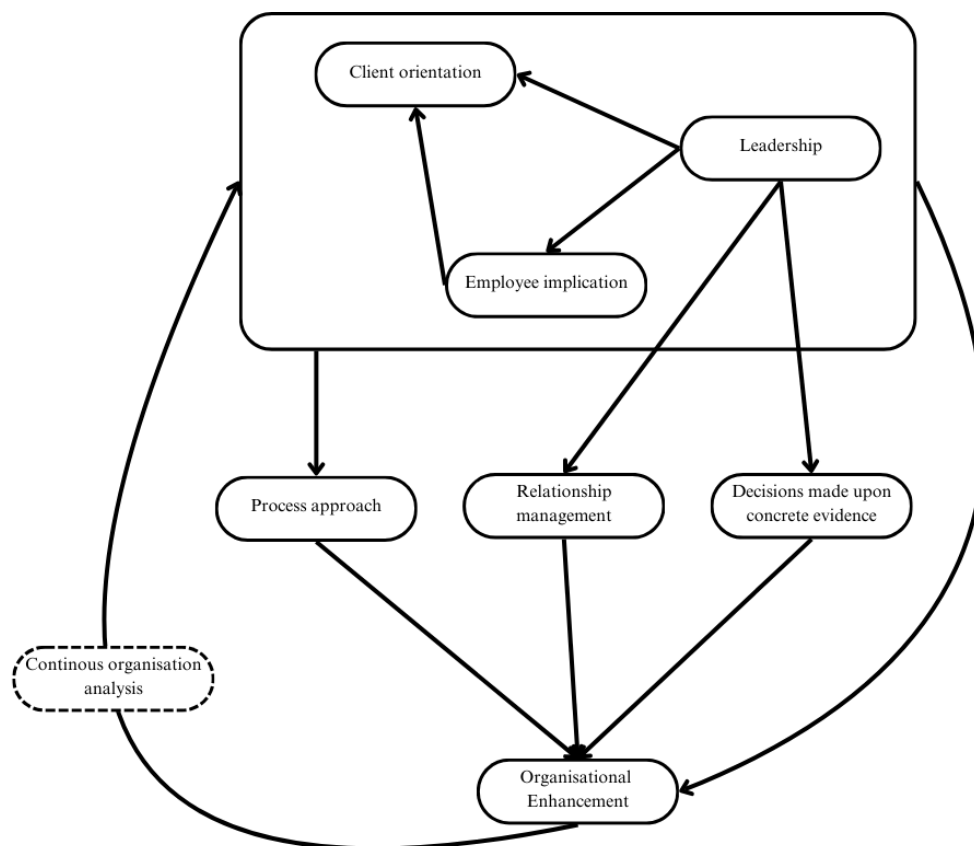


Figure 2. Quality management applied in transport organisations

Source: Author's own contribution

Thus, it can be clearly seen how the principles of quality management are interrelated in terms of their application within a road freight organisation. Also, the use of the proposed model facilitates the implementation of quality management principles. In addition, this step is the precursor to the implementation of a total quality management system.

An organisation is able to guarantee a consistent supply of resources and support for its operations if it manages its relationships with partners and suppliers in an effective manner. This has the potential to lead to increased productivity, lower costs, and better product or service quality. Strong relationships with these networks are also likely to yield mutually beneficial growth and expansion prospects, as well as opportunities for collaboration and innovation.

5. CONCLUSIONS

Quality management presents as a prosperous strategy for organisations that seek to increase their performance and enhance their activities, while at the same time minimising costs. However, this strategy was formerly proposed for organisations in the manufacturing industry. Thus, to apply it to a service providing company, the strategy needs to be adapted to the field of activity. This paper has proposed a model on how organisations operating within the field of road freight transport could implement this strategy.

Furthermore, the quality management principles, as well, have been proposed for organisations that produce goods. However, this piece of research was based upon an organisation that provides road freight transport services. Thus, methods have been proposed to adapt and implement the fundamental principles of this strategy within organisations that provide such services.

In conducting this research paper, it was noted that there is a limited number of studies (Ulitskaya et al., 2023) that present methods of applying quality management principles in the field of road freight transport. Moreover, it is noted that these studies were carried out by analysing other geographic markets. Through the lens of the concept of glocalization, these studies can only be assimilated to a certain extent in the European and, more specifically, in the Romanian context, since the geographical regions have both common features and features that differentiate them. Thus, the need to carry out future research on the implementation of quality management within road transport organisations in Romania arises.

In addition, this paper has analysed the concept of quality assurance, highlighting its importance in implementing a quality management strategy. What is more, a model for applying this concept in a road freight transport organisation has been proposed.

This study has provided two clear frameworks on how concepts associated with total quality management can be implemented within a road freight transport organisation. Thus, it shall not only present itself as a valuable piece of research in the selected field of study, but also as a starting point for practitioners in this industry. Considering that the frameworks were elaborated upon studying a singular organisation, the findings cannot be generalised. However, this study may be adapted to other organisations, according to their specific characteristics.

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