

REVIEW ARTICLE

The evolution of quality management and its dimensions: Safety and responsiveness. Theoretical analysis

ABSTRACT

Organizations have found themselves in the need to respond to the high competitiveness of the market, with quality management being one of their greatest concerns. The purpose of this research is to carry out a theoretical analysis with updated references on quality management in organizations, considering that it is important for those interested to have a document in which they can find the different postulates presented by researchers from different regions of the world. The research was carried out by means of a literature review in the main repositories of scientific papers. Subsequently, the information was synthesized and organized in a way that makes it easy for the reader to review and understand. The general objective of this article is to study the evolution of the concept of quality management within organizations, with the specific objectives of analyzing the dimensions of safety and responsiveness. As a conclusion, it is highlighted that, over time, quality management has undergone significant changes in its scope within the organization, gaining importance. Currently, there are theories, models, and tools that help companies in the efficient management of quality to achieve customer satisfaction.

Keywords: quality management; organizations; customer; safety; responsiveness; security.

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INTRODUCTION

Quality management is one of the most popular topics nowadays, because it is the main concern of organizations, as they face the reality of an increasingly demanding market, with different options that consumers can choose if a company does not meet their needs.

The latest published studies have established that fulfilling requirements is essential to satisfy both customers and employees, and it is necessary to know quality management in depth in order to have tools and strategies to act at the right time, thus obtaining a higher level of competitiveness.

In this context, the present study proposes an in-depth theoretical analysis of the evolution of quality management and to explore the dimensions of safety and responsiveness, based on the Servqual model. Through a literature review based on Deming's theory, the model proposed by the European Foundation for Quality Management (EFQM) and the ISO 9001 standard, we try to provide a comprehensive guide to understand the definitions, dimensions, and tools to efficiently manage quality in companies.

The evolution of quality management has been influenced by different trends and approaches over time, from the old perspective that focused on products and services aimed at customers, to the contemporary notion that encompasses business decisions that affect a wide range of stakeholders, including society as a whole.

For this reason, it has become necessary to unify in a single document the different references of quality management in organizations, thus helping stakeholders to know it in depth, with a comprehensive perspective that serves as a valuable resource. In this way, customer dissatisfaction can be avoided, as it could affect the profitability and reputation of the company and, in the most critical cases, even lead to the closure of the organization.

METHODS

A literature review was conducted to analyze the variable quality management and the dimensions safety and responsiveness. The literature

search was conducted in a period from 2019 to 2023, including relevant previous references cited in the selected works. The bibliography found was obtained through databases such as Scopus and Web of Science, where specific filters were made for the selection of recent review and scientific papers on quality management in organizations.

At the international level, papers belonging to the Emerald Insight group were identified. At the national level, research from institutions such as the Pontificia Universidad Católica del Perú, Universidad Privada Antenor Orrego, Universidad Nacional de San Agustín de Arequipa, among others, was found.

The inclusion criteria for the selection of papers were their relevance to the topic of study, as well as their scientific rigor and contribution to existing knowledge. Papers that were not directly related to quality management or that did not meet the required quality standards, such as their institution of origin, were excluded.

Once the relevant papers were selected, we proceeded with the data analysis, which consisted of a thorough review of each paper to identify the main findings, trends, and perspectives related to quality management. This analysis allowed the interpretation and discussion of the results.

RESULTS

Since the 1950s, researchers and managers have understood that technical and social aspects within an organization interact and influence the performance of the company. This is because organizations are made up of individuals who use tools, methods, and knowledge to create products or services that are valued by customers, who constitute the external context of the organization (El Manzani *et al.*, 2019).

In the second half of the twentieth century, a prominent interest in quality management emerged, with an emphasis on planning, control, assurance, and improvement. This approach has been consolidated since the 1980s and maintains its importance today. It was based on the "Japanese industrial miracle", which made it easier for the Western world to

understand the determinants of its success (Murrieta Saavedra *et al.*, 2020). Deming was one of the pioneers who stated with conviction that the attitude of settling for what is “acceptable” can lead to failure (Nizamidou *et al.*, 2019).

The perspective on quality has evolved from focusing exclusively on customer-driven products and services to a broader understanding that recognizes that business decisions affect a diverse set of stakeholders, including society as a whole (Martensson *et al.*, 2023).

The global evolution of quality has been influenced by the dynamics of the global economy, driven by changes in the economy, the workforce, and technology. This has led to the need for a new approach to understanding quality, which now goes beyond simply measuring the percentage of defective products on the production line and significantly expands its concept (Bashan and Armon, 2019).

Throughout history, quality has been valued; however, in the current context of organizations, they have adopted quality management systems in order to improve customer

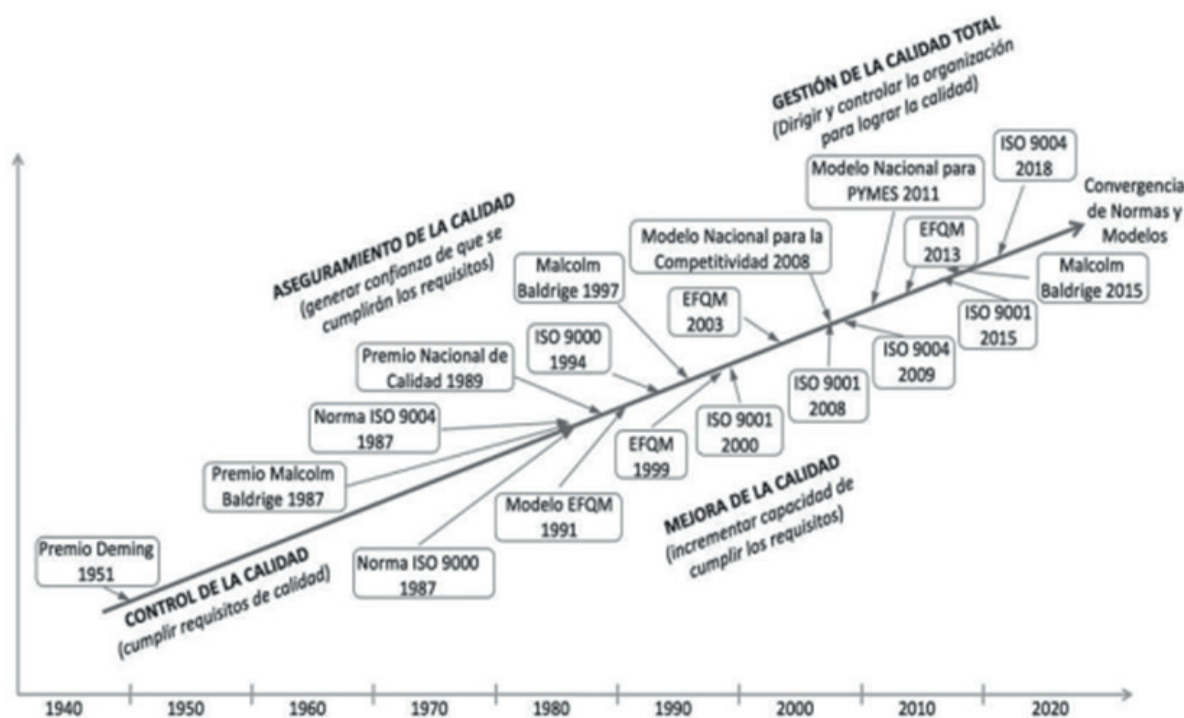
satisfaction and gain competitive advantage (Murrieta *et al.*, 2020). The quality offered today has evolved in parallel with the development of societies. These principles have supported the progress of humanity, resulting in economic growth, expansion, and advancement of knowledge (Rojas Nieves, 2020). Quality is created by people for the benefit of people and becomes a philosophy of life both for them and for organizations.

Quality is directly related to the product or service purchased so that the result meets the consumer’s expectations. Its level depends on how well it meets individual preferences and needs. Therefore, it can be said that quality refers to the suitability of the product or service to fulfill the functions expected of it, according to consumer expectations (Mamani Condori, 2020).

In the current context of the world economy, due to the influence of globalization and high competition in the markets, quality management has become an essential requirement for the success of any organization or company

Figure 1

Evolution of the concept of quality through changes in standards and models



Note. Taken from Murrieta Saavedra *et al.*, 2020.

worldwide, whether it is dedicated to industrial production or the provision of services (Zavala Choez and Vélez Moreira, 2020). Quality is defined as the characteristics and attributes of a product or service that make it suitable to satisfy the needs of the public (Mamani Condori, 2020).

Therefore, companies need an efficient management system to make sound decisions. This not only allows them to meet the demands of their customers, but also helps them to improve their competitiveness compared to other companies. Competition has become more challenging due to globalization, which means that companies must strive to stand out and establish their position in the globalized market (Murrrieta Saavedra *et al.*, 2020).

However, quality is not limited to being a tactic to increase production efficiency. It must be interpreted and communicated as a principle that cultivates attitudes and behaviors, both in the work environment and in the personal lives of employees (Rojas Nieves, 2020). From a business perspective, service quality can be summarized as the extent to which the operation has been effectively executed to serve its customers (Phuong Vu *et al.*, 2020).

Quality is established and evaluated from the consumer's perception rather than the company's perspective. This means that quality lies in the perception of those who experience it. The company must focus on customer expectations with the goal of meeting or exceeding them with its product (Arroyo Valer, 2020). This definition of quality focuses on agents external to the organization and is therefore particularly sensitive to market fluctuations.

The challenge for companies is to constantly seek to improve quality as a distinctive strategy to meet customer demands (Zavala Choez and Vélez Moreira, 2020). The importance given to excellence has led to the emergence of increasingly demanding consumers who expect high quality in all the products and services they purchase.

Only companies that are able to embrace the current quality management philosophy will succeed in the highly competitive global marketplace (Bagodi *et al.*, 2020). Numerous

studies have demonstrated the positive impact of quality management on financial and operational performance (Gambi *et al.*, 2020). In this context, it is not surprising that quality management has been implemented in various service and industrial sectors.

Quality management offers a number of long-term benefits, such as improved organizational performance, increased competitiveness, customer satisfaction, increased market share, and improved perception of corporate image (Bagodi *et al.*, 2020).

There are two basic approaches to evaluating service quality. One is subjective or internal, in which companies develop internal criteria and standards to evaluate the quality of their services. The other approach is more objective and is based on comparing customers' perceptions during and after a service experience with their prior expectations (Phuong Vu *et al.*, 2020).

Quality is a concept that encompasses multiple dimensions, and quality management is a comprehensive management philosophy that includes various principles related to different aspects of quality (El Manzani *et al.*, 2019). Five dimensions or areas related to service quality have also been identified, which are tangibility, reliability, responsiveness, safety, and empathy (Phuong Vu *et al.*, 2020).

Scholars have emphasized the importance of approaching quality management through a multidimensional approach, noting that its effective implementation requires an appropriate balance between the "soft" and "hard" components of quality management. Both dimensions are essential for successful implementation (Sciarelli *et al.*, 2020).

In this multidimensional context of quality management, two critical dimensions are safety and responsiveness. The security dimension focuses on implementing measures to ensure the integrity, confidentiality, and availability of quality-related processes and products (Nizamidou *et al.*, 2019).

In a business environment, security goes beyond the protection of sensitive data and includes the maintenance of established quality

standards (Phuong Vu *et al.*, 2020). Regulations, employee training, and the implementation of sound quality management systems further strengthen this dimension and create trust among customers and internal stakeholders (Arroyo Valer, 2020).

Responsiveness, on the other hand, is critical for adapting to change and meeting market demands in a dynamic environment (Zavala Choez and Vélez Moreira, 2020). Emerging technologies, such as artificial intelligence and data analytics, enhance the ability to anticipate trends and adapt quickly to market changes, thus consolidating the organization's position at the forefront of quality management (Kumar *et al.*, 2020).

When individuals within an organization have high quality standards, positive developments are noted. Departments produce high-quality results in line with user expectations, thanks to a quality culture that is widely adopted in the organization (Rojas, 2020). In this sense, the individuals that make up the organization manage to maintain the satisfaction of both customers and community members.

Organizations need to understand customer expectations, which are formed from previous interactions, online reviews, and past experiences. These expectations are then translated into detailed specifications for the service that the company provides in accordance with those specifications. Ongoing dialog with customers through complaints, claims, and reviews is essential. Gaps can occur at any stage, depending on the effectiveness of the transfer of ideas and actions (Phuong Vu *et al.*, 2020).

To optimize quality improvement processes, organizations need quality systems and a quality mindset (Kumar *et al.*, 2020). Today, quality management focuses on performing the right actions effectively and contributing to the quality of society as a whole. In fact, looking at the evolution of quality management, it has been highlighted how the focus has evolved from customer satisfaction to engagement with all stakeholders (De Menezes *et al.*, 2022).

In this regard, quality management can be seen as an organizational leadership approach

based on quality and the participation of all team members, with the aim of achieving customer satisfaction and benefits for all parties involved (Arroyo Valer, 2020). The emphasis on customer requirements is an essential principle of quality management, since the customer is the person to whom value is provided (Isaksson, 2019). Thus, the business process is intended to provide value to the customer.

It is undeniable that over the years, quality has become increasingly important for organizations. This is evidenced by the growing number of companies seeking certification according to the standards established by the International Organization for Standardization (ISO) or applying for excellence awards, such as those granted by the European Foundation for Quality Management (EFQM) (Murrieta Saavedra *et al.*, 2020).

Companies can choose from different approaches to implement quality management, such as the model proposed by the EFQM and the ISO 9001 standard, among others. The EFQM model represents a quality model that reflects the quality management principles recommended in the professional literature and serves as a management tool that allows the evaluation of the satisfaction of customers, employees, and other stakeholders (Portela Maquieira *et al.*, 2019). It is recognized that the implementation of quality management programs is essential to ensure long-term success in order to remain competitive (Lasrado and Nyadzayo, 2020).

ISO 9001:2015 characterizes a process as a set of interrelated activities that transform inputs into outputs. It advocates a process-centered perspective to improve the effectiveness of the quality management system and meet customer requirements (International Organization for Standardization [ISO], 2015). Implementing a quality management system according to ISO 9001:2015 provides benefits such as uniformity of products and services, compliance with regulations, improved customer satisfaction, and management of business risks and opportunities (Vigo Pereyra, 2021). The ISO 9001:2015 standard makes it possible to demonstrate the adequacy of the quality management system requirements, in line

with current market needs to improve performance. In particular, it emphasizes the importance of quality management in the service sector, which has gained global importance (ISO, 2015).

Quality management practices refer to methods, techniques, and strategies for continuous quality improvement, usually motivated by the need to meet customer expectations (Chakraborty *et al.*, 2019). Quality management strategies such as TQM, Six Sigma, Kaizen, and Lean emerged in the manufacturing industry last century with the aim of improving processes, increasing reliability, reducing waste, increasing efficiency and productivity, and strengthening financial performance (Mosadeghrad and Afshari, 2020).

Quality improvement management personnel play a key role in meeting customer expectations and contributing to the continuous improvement process (Kumar *et al.*, 2020). Continuous improvement is an integral part of quality management and is derived from the Japanese word “kaizen,” which translates to “improving small things” (Vigo Pereira, 2021).

Continuous quality improvement requires a cultural transformation supported by leaders (Mosadeghrad and Afshari, 2020). Therefore, it is necessary to establish and maintain a culture that emphasizes trust, empowerment, teamwork, collaboration, risk-taking, and the continuous search for improvement.

Edward Deming, widely recognized as a leading figure in the field of quality management, formulated Deming’s 14-Point Management Theory as a guide to quality management, which emerged during his extensive consulting career in Japan and elsewhere (Shokri and Nabhani, 2019).

The process-based approach involves the systematic planning and management of processes and their relationships with the goal of achieving desired results in accordance with the organization’s quality policy and strategic direction (Arroyo Valer, 2020). The management of processes and the system as a whole can be achieved by applying the PDCA (Plan, Do, Check, Act) cycle with a global perspective and oriented towards risk management, with

the objective of taking advantage of opportunities and preventing undesirable results.

The constant search for improvement is fundamental to achieving high quality performance, and these characteristics, such as market research and development capabilities, are factors that help companies gain a competitive advantage by promoting the success of new innovations (Sahoo, 2019).

The processes are structured according to the PDCA methodology: Plan, Do, Check, and Act, with the goal of driving continuous improvement and consequently ensuring that the final products and services meet customer expectations. This in turn leads to customer satisfaction (Vigo Pereira, 2021).

In the process of implementing quality management, some reports indicate that larger companies have more resources, while other studies find no significant differences based on the size of the organization (Portela Maquieira *et al.*, 2019).

High-quality management requires a cohesive implementation of strategy, focusing on key elements for success, such as understanding the company’s vision, identifying relevant markets, and optimizing core processes, with the active participation of top management and all employees in the constant search for improvement (Gremyr *et al.*, 2021).

In the field of quality management, the issue of resource allocation has always been crucial because resources are limited while the demands of the community are unlimited (Rezaee and Pooya, 2019). Any company that wants to manage quality, gain a solid position in the market, and achieve competitiveness can apply the results of all the studies evaluated, always keeping customer satisfaction as the main objective (Zavala Choez and Velez Moreira, 2020).

Continuing education and training provide a solid foundation for the cultural change required to implement quality management. Providing continuing education and training to managers and employees is critical to the success of quality management (Mosadeghrad and Afshari, 2020). These education and training

programs enable the continuous development of employees' skills, ensure their commitment to continuous quality improvement, and empower them to drive change.

DISCUSSION

As analyzed in this article, the results of this research are consistent with those presented by Sciarelli *et al.* (2020), who indicate that quality practices contribute to increased innovation and organizational performance. In turn, innovation has a positive impact on organizational performance.

Similarly, El Manzani *et al.* (2019) state that social and technical quality management practices (ISO 9001) do not show a significant relationship with incremental and radical product innovation when considered individually, but when combined to form a complete socio-technical system, they prove to have a strong positive and significant impact on incremental product innovation and a positive and significant but less pronounced impact on radical product innovation.

Bashan and Armon (2019) highlight the strategic role of the parent company in creating a corporate quality management system (QMS) and developing a relevant global quality strategy, which is consistent with the perspective of Chakraborty *et al.* (2019), who state that solutions in quality management are found in the limited implementation of quality management practices and the reduced use of tools and techniques. All of these findings are consistent with the research of Lasrado and Nyadzayo (2020), who emphasize the importance of top management commitment, middle management involvement, audits, training, and employee involvement.

In line with the previous findings, we must highlight the importance of the security and responsiveness dimensions. Security, understood as the ability of an organization to ensure the integrity and protection of its processes, products, and customers, emerges as a fundamental pillar. This concept is reinforced by the perspective of Phuong Vu *et al.* (2020), who believe that it not only strengthens customer trust, but also contributes to the sustainability and longevity of the organization.

In parallel, the responsiveness dimension, which focuses on the organization's agility and ability to adapt to internal and external changes, is positioned as an essential element to face the dynamic demands of the business environment, as highlighted by Zavala Choez and Vélez Moreira (2020), who emphasize that organizations with high levels of this dimension not only excel in customer satisfaction, but are also better equipped to face unexpected challenges and take advantage of emerging opportunities.

CONCLUSIONS

Quality management, in terms of its general objective, has changed over time in its scope within organizations and has become increasingly important. Currently, theories, models, and tools are available to help organizations effectively manage quality with the goal of achieving customer satisfaction. It is essential to consider Deming's postulates as the initial basis for quality management. Each action or tool used in organizations must be analyzed from the perspective of what type of quality it is, since each of them deserves a different management. Also, among the most widely used strategies and methods in the market are Total Quality Management (TQM), Six Sigma, Kaizen, and Lean. The approaches include the EFQM model and the ISO 9001 standard. It is important to emphasize that these strategies, methods, and approaches to implementing quality management must be appropriate to the type and orientation of the company in order to achieve greater efficiency.

Furthermore, this comprehensive analysis of the evolution of quality management, in relation to specific objectives, highlights the critical importance of the dimensions of safety and responsiveness. Safety, understood as the ability to maintain the integrity and protection of processes, products, and customers, is shown to be an essential pillar for sustainability and customer confidence. Responsiveness, on the other hand, emerges as a key element for the adaptability and agility of organizations in the face of internal and external change. The studies reviewed confirm that an integrated approach to these dimensions not only contributes to customer satisfaction, but also

strengthens organizational resilience in the face of unexpected challenges and takes advantage of emerging opportunities.

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Conflict of interest

The author has no conflicts of interest to disclose.

Author contributions

Yuliana Geraldine Alvarez Caballero (lead author): research, methodology, writing (original draft, review, and editing).