



Analysis of Variables Influencing Total Quality Management in Micro and Small Enterprises: An Exploratory Study in Emerging Economies

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ABSTRACT

This study discusses the elements and dimensions of quality management in the context of micro and small enterprises, from the perspective of owners and managers. The research problem is related to the difficulty of understanding how Total Quality Management is perceived and practiced in small firms that usually operate with limited resources, informal routines and low levels of process formalization. The objective is to identify and categorize the variables that influence Total Quality Management for process improvement in micro and small enterprises in emerging economies. Data were collected from six Brazilian companies and two Colombian companies through semi-structured interviews with owners and managers. The results indicate that the Philosophy dimension presented the highest frequency in the discourse of the participants, especially due to characteristics such as flexibility, ease of change, reduced hierarchical structure, family-like work environment, direct communication and learning processes. The findings also show that micro and small enterprises demonstrate strong soft Total Quality Management practices, mainly related to leadership, customer proximity and interpersonal communication. However, they still face limitations in hard Total Quality Management practices, such as process standardization, formal measurement, documentation and systematic continuous improvement. The study concludes that quality management in micro and small enterprises should be understood as an adaptive and relationship-based system, requiring accessible, flexible and low-cost practices that strengthen process improvement without ignoring the organizational reality of small businesses.

1. Introduction

Micro and small enterprises (MSEs), usually included in the broader category of small and medium sized enterprises (SMEs), are widely recognized as important sources of entrepreneurial initiative, innovation and socio-economic development. These firms tend to present relevant

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organizational advantages, such as flexibility, fewer hierarchical levels, closer participation of top management, reduced bureaucracy and proximity to customers [4, 14, 19].

In emerging economies, the relevance of MSEs is even more evident. These enterprises contribute to employment generation, income distribution and local economic resilience, especially in contexts marked by social and economic instability. In Brazil, small businesses represent a central component of the national economy. According to SEBRAE [23], there are approximately 24 million active small businesses in the country, representing about 95% of all active companies and contributing 26.5% of the national Gross Domestic Product. In addition, micro and small enterprises generated 80% of formal jobs in 2025 and were responsible for approximately R\$51 billion in monthly wages paid to workers.

A similar pattern can be observed in other Latin American economies, such as Colombia, where micro, small and medium-sized enterprises represent the majority of the business structure and play an important role in employment and income generation. However, the strong presence of these firms coexists with structural vulnerabilities, including limited access to credit, scarce liquidity, low technological maturity and difficulties in formalizing managerial routines. Thus, while MSEs are essential to economic and social development, they often operate under severe resource constraints and with limited access to systematic management tools.

In this context, quality management becomes a relevant field of analysis. Total Quality Management (TQM) can support process improvement, increase competitiveness and strengthen organizational survival, particularly in developing countries. TQM may be understood as a managerial philosophy oriented toward stakeholder satisfaction through the implementation of planning, policies, programs and strategies, as well as the effective use of human, technological and organizational resources [5, 16]. However, in the contemporary business environment, quality management cannot be restricted to product conformity or traditional process control. MSEs are increasingly challenged by digital transformation, customer interaction through social media, supply chain integration, sustainability pressures and the need to respond quickly to changing market expectations.

1.1 Quality Dimensions of Total Quality Management

The literature explains TQM through complementary perspectives. One distinction refers to the mechanical and organic models of quality management. The mechanical model emphasizes verification, standardization, conformity and process control. The organic model, in turn, emphasizes innovation, organizational learning, teamwork and the involvement of the human factor within the quality system [20, 28].

A similar distinction appears in the literature on hard and soft TQM. Hard TQM refers to the technical and systemic aspects of quality management, such as statistical process control, use of technology, performance measurement, formal procedures and process standardization. Soft TQM refers to the social and human dimensions of quality, including leadership, customer focus, employee commitment, training, teamwork and cooperative relationships with suppliers [22].

This distinction remains relevant in recent studies. Soft and hard TQM practices should not be treated as separate or competing approaches, but as complementary dimensions of the same management system. Soft practices, such as leadership commitment, customer orientation and employee training, tend to support the implementation of hard practices, such as process management, quality 2 information analysis and the adoption of advanced technologies [1]. Therefore, the effectiveness of TQM depends on the articulation between cultural, human and

technical elements. Based on this integrated view, Paladini [16] defines five dimensions of quality management: Philosophy, Set of Methods, Continuous Improvement, Customer Service and Involvement of the Workforce. These dimensions provide the theoretical framework used in this study to analyze how quality management is perceived and practiced in micro and small enterprises. Table 1 summarizes the theoretical dimensions of Total Quality Management adopted in this study.

Table 1

Quality dimensions of Total Quality Management

Quality dimensions	Authors	Definition
Philosophy	Dobbins (1995); Corrigan (1995); Walker (1995)	Quality management comprises strategies related to the design and nature of productive actions, including the organizational principles, values and assumptions that guide production and quality assessment.
Set of Methods	Early and Godfrey (1995); Juran and Gryna (1991); Sinha and Willborn (1985); JIS-Z-8101 Japanese Quality Standard	Quality management involves simple or more elaborate tools aimed at shaping organizational actions. These methods may be related to customer service, cost reduction, planning, process control and employee participation in problem analysis and solution definition.
Continuous Improvement	Rau (1995); Cullen and Hollingum (1987)	Quality management includes strategies aimed at continuously improving productive actions. It starts from existing situations and seeks systematic improvement in processes, routines and organizational performance.
Customer Service	Buch and Shelnutt (1995); Peters (1992)	Quality management involves strategies specifically aimed at analyzing how the company serves its customers, identifying how products and services can be better developed to meet customer needs and expectations.
Involvement of the Workforce	Feinberg (1995); Hoover (1995)	Quality management includes strategies aimed at developing systematic ways to ensure that the workforce remains committed to internal and external customers, organizational goals and continuous improvement.

1.2 Total Quality Management in Micro and Small Enterprises

The application of TQM in micro and small enterprises presents specific characteristics. Unlike large organizations, which usually rely on formal departments, standardized procedures, statistical tools and specialized personnel, MSEs tend to develop quality practices through practical experience, direct supervision by the owner, customer feedback, informal training and empirical process control. Thus, TQM in these firms is frequently less formalized, but not necessarily less relevant.

MSEs usually present strong interpersonal relationships, informal communication, customized customer service, knowledge sharing, flexible routines and direct involvement of owners or managers in daily operations [18, 19]. These characteristics may facilitate rapid decision-making and adaptation to customer needs. At the same time, they may limit the formalization of processes, delegation of responsibilities, documentation of routines and systematic measurement of performance.

Recent research reinforces that the implementation of TQM in small enterprises is frequently constrained by limited financial resources, insufficient managerial competence, lack of technological infrastructure, resistance to change and low availability of formal quality knowledge [6]. These barriers are especially important in emerging economies, where MSEs need to remain competitive while dealing with restricted access to credit, unstable demand and limited institutional support.

For this reason, the analysis of TQM in micro and small enterprises must consider both their advantages and limitations. On one hand, MSEs usually present flexibility, proximity to customers, fewer hierarchical barriers and greater capacity for quick adjustment. On the other hand, they often lack documented procedures, formal indicators, structured training programs and systematic tools for continuous improvement. Based on the literature review and on the quality dimensions proposed by Paladini [16], Table 2 presents the main TQM dimensions considered relevant for the analysis of micro and small enterprises.

Table 2

Dimensions of TQM in micro and small enterprises

Dimension	Authors	Definition applied to micro and small enterprises
Philosophy: innovation, entrepreneurship and organizational culture	Valmohammadi [26]; Antony [3]; Peschken et al. [19]; Beraki et al. [6]	In micro and small enterprises, the philosophy dimension is strongly associated with entrepreneurial initiative, leadership, communication, flexibility and organizational culture. The owner or manager plays a central role in transmitting quality values, shaping the work environment and influencing relationships with employees and customers.
Set of Methods: information, technology and process control	Parasuraman and Colby [17]; McGrath [13]; Ali et al. [1]	This dimension refers to the use of methods, tools and technologies to support planning, standardization, process control and decision-making. In MSEs, these practices are often simplified and informal, but they are essential for reducing waste, improving internal control and preparing the firm for digital transformation.
Continuous Improvement: customer feedback, benchmarking and sustainability	Zeinalnezhad et al. [29]; Wagner and Paton [27]; Masoudi and Shahin [12]; Tegethoff et al. [25]	Continuous improvement in MSEs is linked to customer feedback, knowledge sharing, benchmarking, supplier relationships and resource efficiency. In the contemporary context, this dimension also includes supply chain integration and sustainability-oriented practices, such as waste reduction and eco-innovation.
Customer Service: customization, digital channels and customer engagement	Ibbotson and Moran [10]; Parry et al. [18]; Pratono [21]; Deku et al. [8]; Sharabati et al. [24]; Alkhasoneh et al. [2]	Customer service is central for MSEs because of their proximity to clients, lower bureaucracy and capacity for customization. Digital channels and social media expand this dimension by enabling faster communication, customer engagement, feedback collection and relationship management.
Involvement of the Workforce: leadership, training and empowerment	Valmohammadi [26]; Wagner and Paton [27]; Peschken et al. [19]; Antony [3]; Beraki et al. [6]	Workforce involvement is related to leadership, employee participation, training, communication and empowerment. In MSEs, this dimension is often influenced by the direct relationship between the owner or manager and employees, but it requires clearer procedures and capacity building to reduce excessive dependence on the leader.

1.3 Digital Transformation, Sustainability and Quality Management

The contemporary literature on quality management shows that the boundaries of TQM have expanded with digital transformation and Industry 4.0. Traditional TQM is not obsolete; rather, it can be understood as a foundation for technological readiness. Firms that lack standardized processes, reliable information flows and a quality-oriented culture tend to face greater difficulties when adopting digital tools, automation, data analytics or advanced manufacturing technologies.

Ali et al. [1] demonstrate that both soft and hard TQM practices contribute to Industry 4.0 readiness. Soft practices, such as top management commitment, customer focus and employee

training, provide the cultural and strategic conditions for digital transformation. Hard practices, such as process management, quality information analysis and advanced manufacturing technologies, provide the technical basis for the effective use of digital systems. In this perspective, the transition toward digitalization depends on the integration between people, processes and technology.

For micro and small enterprises, digital transformation does not necessarily begin with complex technologies or high-cost systems. It may start with simple digital tools for customer communication, process control, sales monitoring, inventory management and service evaluation. Social media platforms, messaging applications and low-cost cloud-based systems can function as initial mechanisms for collecting customer feedback, monitoring satisfaction and supporting continuous improvement. Recent studies indicate that digital marketing technologies can improve business performance and service delivery in SMEs operating in emerging markets [8], while social media use can strengthen brand awareness and customer engagement [2, 24]. In addition to digitalization, recent discussions on TQM emphasize the need to expand quality management beyond internal processes. MSEs depend strongly on relationships with suppliers, distributors, customers and local networks. Therefore, supply chain integration becomes relevant for improving quality performance, especially when firms do not have sufficient resources to develop sophisticated internal systems. Collaboration with suppliers and partners may help MSEs access better inputs, reduce operational failures, improve delivery reliability and adopt more consistent quality standards.

This broader view of TQM also includes sustainability. The concept of continuous improvement is increasingly related to eco-innovation, resource efficiency and waste reduction. Sustainability practices should not be understood only as environmental obligations, but also as mechanisms for improving quality, reducing costs and increasing competitiveness. Tegethoff et al. [25], in a study focused on SMEs in Colombia, show that eco-innovation can positively affect environmental, social and economic performance. Practices such as waste reduction, efficient use of energy and water, and improvement of production processes are directly connected to the principles of quality management.

Although Total Quality Management has been widely discussed in the literature, its application in micro and small enterprises in emerging economies remains less clearly understood, especially when considering the interaction between informal managerial routines, digital transformation, customer proximity, sustainability pressures and limited process formalization. This gap is relevant because micro and small enterprises play a central role in employment generation, local economic resilience and entrepreneurial development, but frequently lack structured quality management systems. Therefore, this study aims to identify and categorize the variables that influence Total Quality Management for process improvement in micro and small enterprises, based on the perception of owners and managers in Brazilian and Colombian companies.

2. Methodology

2.1 Research Design

This study adopts a qualitative and exploratory research design. This approach is appropriate for investigating managerial perceptions, organizational practices and quality-related routines in contexts where formalized management systems are not always present. Qualitative research is suitable for examining meanings, interpretations and experiences in their specific contexts, especially when the objective is to understand how individuals interpret organizational practices rather than to statistically generalize findings [7].

The objective of this study was not to statistically generalize results, but to understand how owners and managers perceive and apply Total Quality Management (TQM) dimensions in the reality of micro and small enterprises. The research was structured in three main stages: first, a bibliographical study was conducted to support the construction of the research instrument; second, data were collected from selected micro and small enterprises; and third, the empirical material was analyzed qualitatively according to the TQM dimensions adopted in the theoretical framework.

2.2 Ethical Aspects

The research was submitted to the Ethics Committee of the Federal University of Pernambuco, Brazil. The study ensured the confidentiality of the information provided by the companies and participants. The participants were informed about the research objectives, the voluntary nature of their participation and their right to withdraw from the study at any stage.

All procedures followed the ethical recommendations required by Resolution 466/12 of the Brazilian National Health Council. For confidentiality reasons, the real names of the companies were replaced by fictitious names related to their main activity.

2.3 Research Instrument

The research instrument consisted of a semi-structured interview script composed of open-ended questions. This type of instrument was selected because it allows respondents to answer freely according to the proposed themes, while also enabling the researcher to explore relevant issues that emerge during the interview. Semi-structured interviews are especially useful when the researcher seeks to combine theoretical guidance with flexibility during data collection [11].

The semi-structured interview script was organized into three main parts. The first part collected demographic and organizational information about the interviewees and companies. The second part explored the basic concepts of quality perceived by owners and managers. The third part investigated the five TQM dimensions adopted in this study: Philosophy, Set of Methods, Continuous Improvement, Customer Service and Involvement of the Workforce. Table 3 summarizes the structure of the interview script and its bibliographic basis.

Table 3
Semi-structured interview script and bibliographic basis

Part	Questions	Topic	Description and bibliographic basis
I	1–9	Demographic and organizational information	This part collected information about the interviewees, such as age, gender, educational background, position, number of people under coordination and main activities performed in the company. It also collected organizational information, including company activity, number of employees and time in the market.
II	1–3	Basic concepts of quality	This part explored the basic concepts of quality perceived by owners and managers, considering their own understanding of quality and the practices observed in the company. The questions were based mainly on the theoretical basis of Paladini [16].
III	4–11	Philosophy	This section investigated organizational culture, leadership, communication, work environment, flexibility and the role of the owner or manager in transmitting quality values. The theoretical basis included Paladini [16], Valmohammadi [26], Antony [3], Peschken et al. [19] and Beraki et al. [6].

III	12–20	Set of Methods	This section addressed planning, standardization, operational procedures, process control, use of information and technology, inspection routines and managerial tools. The theoretical basis included Paladini [16], Parasuraman and Colby [17], McGrath [13] and Ali et al. [1].
III	21–27	Continuous Improvement	This section investigated process improvement, customer feedback, benchmarking, knowledge sharing, supplier relationships, training and sustainability-oriented improvement practices. The theoretical basis included Paladini [16], Zeinalnezhad et al. [29], Wagner and Paton [27], Masoudi and Shahin [12] and Tegethoff et al. [25].
III	28–31	Customer Service	This section explored customer communication, identification of customer needs, customization, satisfaction measurement, after-sales practices, social media use and digital interaction with clients. The theoretical basis included Paladini [16], Ibbotson and Moran [10], Parry et al. [18], Pratono [21], Deku et al. [8], Sharabati et al. [24] and Alkhasoneh et al. [2].
III	32–35	Involvement of the Workforce	This section analyzed leadership, employee participation, autonomy, empowerment, training, communication and workforce involvement in quality improvement practices. The theoretical basis included Paladini [16], Valmohammadi [26], Wagner and Paton [27], Peschken et al. [19], Antony [3] and Beraki et al. [6].

2.4 Sampling and Company Profile

The sample was selected through a non-probabilistic procedure based on accessibility. The final sample consisted of eight micro and small enterprises: six Brazilian companies located in Recife, Pernambuco, Brazil, and two Colombian companies located in Bogotá.

The interviewees were owners or managers of the participating companies. This criterion was adopted because these individuals have direct knowledge of the companies' processes, routines, customer relationships, workforce involvement and quality management practices. Their position within the organization allowed them to provide information about both strategic decisions and daily operational practices. Table 4 presents the profile of the companies participating in the case study.

Table 4
Profile of the companies participating in the case study

Company	Assumed name	Company activity	Market time	Employees	Country
1	BEAUTY	Personal care services	34 years	7	Brazil
2	CLEANING	Cleaning service provider	17 years	40	Brazil
3	COSMETIC	Cosmetics distributor	9 years	9	Brazil
4	GAS	Gas distributor	10 years	8	Brazil
5	PIZZERIA	Restaurant specializing in pizzas	9 years	9	Brazil
6	PLASTICS	Manufacture of plastic products	9 years	9	Brazil
7	LIFE HEALTH	Health insurance services	5 years	38	Colombia
8	WHEELS	Automotive detailing services	7 years		

3. Data Analysis

The data generated by the semi-structured interviews were analyzed qualitatively using the content analysis method. After data collection, the interview records and notes were organized and examined in order to identify recurring meanings, relevant statements and patterns associated with

quality management practices. In qualitative research, coding and interpretation of textual material are essential procedures for transforming empirical data into analytical categories [9].

The analysis followed a theory-oriented categorization process. The responses were grouped according to the five quality management dimensions defined in the theoretical framework: Philosophy, Set of Methods, Continuous Improvement, Customer Service and Involvement of the Workforce. This procedure made it possible to compare the empirical evidence obtained from the interviews with the theoretical dimensions of TQM.

The objective of the analysis was to identify which dimensions of quality management were most present in the discourse of owners and managers, as well as which aspects of TQM were considered more relevant for micro and small enterprises. The results were then interpreted in relation to the specific characteristics of these companies, such as flexibility, proximity to customers, informal communication, limited resources and direct participation of the owner or manager in daily operations.

4. Results and Discussion

This section presents and discusses the results obtained from the semi-structured interviews conducted with owners and managers of micro and small enterprises in Brazil and Colombia. The analysis was organized according to the five dimensions of Total Quality Management (TQM) adopted in this study: Philosophy, Set of Methods, Continuous Improvement, Customer Service and Involvement of the Workforce [16].

The results indicate that quality management practices are present in the companies studied, although they are not always formalized or systematically implemented. In general, quality is associated with customer satisfaction, direct communication, flexible routines, owner supervision and rapid response to market demands. These characteristics reveal both strengths and limitations. On one hand, micro and small enterprises benefit from proximity to customers, reduced hierarchy and flexible decision-making. On the other hand, they still show limitations in process documentation, performance measurement, task delegation and systematic continuous improvement.

4.1 Quality Vision for Owners and Managers

From the perspective of the owners and managers interviewed, quality is mainly associated with customer needs satisfaction, product and service conformity, service delivery, price, agility and efficiency. The interviewees presented a pragmatic understanding of quality, strongly connected to daily market requirements and to the need to remain competitive.

Competition emerged as an important factor in the construction of quality. Quality was not described only as the absence of defects, but also as a way to differentiate the company from competitors and retain customers. This can be observed in the response of the GAS company, which associated quality with “a durable product” and “competitive value”. Similarly, the PLASTICS company emphasized that quality is related to the question of why a customer should buy from one company instead of another competitor.

These statements show that, for the companies studied, quality is closely related to market positioning. In micro and small enterprises, the perception of quality tends to be constructed through direct contact with customers, comparison with competitors and the capacity to respond rapidly to

specific demands. This reinforces the relevance of customer orientation as a central element of TQM in smaller firms [5, 18].

4.2 Philosophy

The Philosophy dimension is related to organizational culture, leadership, work environment, communication and the values that guide quality practices [16]. In the companies studied, this dimension appeared as one of the strongest elements of TQM, mainly because of the proximity between owners, employees and customers.

The main elements identified in this dimension were the work environment, communication and care. The results are summarized in Table 5.

Table 5

Relationship between theory and results: Philosophy

Dimension	Theoretical elements	Results observed in the companies
Philosophy	Leadership and communication; strategic vision; entrepreneurial orientation; employee participation; managerial experience; flexible structure and information flow; visible top management; rapid response to environmental changes; organizational culture and soft TQM practices.	Philosophy of service and customer orientation; organizational culture based on trust; high concern with customer service; good access to interaction spaces among employees; family-like work environment; analysis of customer satisfaction; high level of leadership and communication; limited formal spaces for disseminating quality principles and standards.

The interviewees recognized that the physical arrangement and organizational environment influence the flow of information, employee well-being and customer perception. For example, the GAS company emphasized that employees who do not have a good work environment will not sell the product in the best way. The PLASTICS company also indicated that a chaotic or negative work environment affects the customer's perception of the product.

These findings suggest that, in micro and small enterprises, quality philosophy is strongly associated with soft TQM practices, such as leadership, interpersonal trust, communication and concern for employees [15, 22]. The family-like environment facilitates interaction and reduces hierarchical barriers, contributing to rapid communication and greater flexibility.

However, this same characteristic also presents limitations. When quality values depend mainly on informal communication and on the constant presence of the owner or manager, the company may face difficulties in maintaining quality standards independently of the leader. Therefore, the Philosophy dimension is a strength of the companies studied, but it also requires mechanisms capable of transforming informal values into stable organizational routines.

4.3 Set of Methods

The Set of Methods dimension refers to planning, standardization, process control, operational procedures, use of managerial tools and inspection routines [16]. In contrast to the Philosophy dimension, this was one of the most fragile aspects of TQM in the companies studied. The main results related to this dimension are presented in Table 6.

Table 6
Relationship between theory and results: Set of Methods

Dimension	Theoretical elements	Results observed in the companies
Set of Methods	Planning; information and technology; knowledge management; process standardization; operational procedure documentation; internal control; inspection routines; use of managerial tools; hard TQM practices; structured data collection and digital readiness.	Limited access to human and financial resources; presence of innovation initiatives adapted to the reality of micro and small enterprises; low level of formal standardization; relevant but mostly informal internal control; operational procedures not always formally documented or disseminated; procedures may be clear in practice but remain dependent on direct supervision; strong supervision by the owner or manager; low level of task delegation; high level of product and service inspection, often conducted empirically.

The interviewees recognized the importance of standardization for reducing waste and improving processes. The PIZZERIA company, for example, associated standardization with the reduction of input losses. The PLASTICS company also described standardization and optimization as fundamental aspects for sales, production and purchasing routines. Despite this recognition, the actual use of formal methods remains limited. The tools mentioned by the companies included check sheets, flowcharts, action plans, periodic meetings, cash flow spreadsheets, sales tracking spreadsheets and specific software for some activities. These tools indicate the existence of basic managerial controls, but their use is still fragmented and uneven among the companies.

Another relevant finding is the low level of formalization of operational procedures. Five of the eight companies stated that they did not clearly present to employees the activities they had to perform. This lack of clarity regarding tasks, goals and work routines may limit the development of improvement initiatives and increase dependence on direct supervision by the owner or manager.

Inspection practices were also often empirical. Owners and managers reported that they usually perform product and service inspections themselves, sometimes randomly or based on visual assessment. Although some companies reported more continuous monitoring practices, the general pattern indicates limited use of structured quality control methods.

These findings show that the Set of Methods dimension represents a central challenge for micro and small enterprises. Although owners and managers understand the importance of standardization and internal control, their practices are still largely informal and dependent on personal supervision. From a contemporary perspective, this limitation is relevant because hard TQM practices, such as documented procedures, structured data collection, process control and formal quality information, are important conditions for digital transformation and technological readiness [1]. Therefore, strengthening this dimension is necessary not only for current quality performance, but also for the future adoption of digital tools and more systematic management practices.

4.4 Continuous Improvement

The Continuous Improvement dimension involves communication, knowledge sharing, process monitoring, performance evaluation, employee training, benchmarking and learning from customer feedback [16, 27, 29]. In the companies studied, this dimension was present, but mostly through informal and reactive practices rather than through structured improvement systems.

The main results related to this dimension are summarized in Table 7.

Table 7

Relationship between theory and results: Continuous Improvement

Dimension	Theoretical elements	Results observed in the companies
Continuous Improvement	Benchmarking; knowledge sharing; supplier relationship management; employee education and training; internal and external communication; process monitoring; performance measurement; supply chain integration; sustainability-oriented improvement and eco-innovation.	Low degree of formalization; process supervision mainly performed by the owner or manager; limited use of formal measurement tools; strong family-like environment; organizational culture based on proximity and informal communication; low perception of technical procedures; flexible structure for assessing customer perception; strong communication among stakeholders; recognition of the importance of training, although with limited investment capacity.

The interviewees recognized the importance of improving processes and monitoring performance. However, most companies reported that they do not use formal measurement tools. Instead, process evaluation is frequently carried out through direct supervision by the owner or manager, empirical observation and customer feedback. This indicates that continuous improvement exists in practice, but is not usually supported by formal indicators or systematic monitoring routines.

Customer perception appeared as one of the main sources of improvement. Some companies reported that they evaluate service quality through informal conversations, phone calls, written forms or direct contact with regular customers. This proximity to customers allows micro and small enterprises to identify problems quickly and respond to specific demands. However, the lack of formal records limits the transformation of customer feedback into structured improvement actions.

Employee training was also recognized as relevant. Four of the companies reported some form of training, while others stated that economic constraints and limited resources restricted investment in this area. This finding shows that the companies understand the importance of workforce development, but do not always have the financial or organizational conditions to implement continuous training programs.

From a contemporary perspective, continuous improvement in micro and small enterprises may be strengthened through supplier collaboration, benchmarking and sustainability-oriented practices. Supply chain integration can help these firms access better standards and improve process reliability without depending exclusively on internal resources [12]. In addition, sustainability practices, such as waste reduction and efficient use of resources, can be incorporated into continuous improvement because they contribute to operational efficiency, cost reduction and quality performance [25].

Therefore, the main challenge in this dimension is to transform informal learning into systematic improvement. The companies already collect relevant information from customers, employees and daily operations, but this information needs to be recorded, analyzed and converted into process changes, training actions and managerial decisions.

4.5 Customer Service

The Customer Service dimension was one of the strongest aspects of TQM in the companies studied. This dimension includes customer communication, identification of needs, product and service customization, satisfaction measurement, after-sales practices and the use of digital channels for customer interaction [16, 18, 21].

Table 8
Relationship between theory and results: Customer Service

Dimension	Theoretical elements	Results observed in the companies
Customer Service	Communication with consumers; visible top management; product and service customization; identification of customer needs; customer satisfaction measurement; digital communication channels; social media use; customer engagement and feedback collection.	High importance attributed to communication with customers; direct identification of customer needs and expectations; customized products and services; flexible tools for measuring customer satisfaction; use of after-sales contact, phone calls and social networks to collect feedback; customer relationship frequently managed directly by the owner, manager or salesperson; social media used as an informal channel for service evaluation and customer interaction.

The interviewees emphasized the importance of knowing customer expectations and maintaining direct communication with clients. In the companies studied, quality is strongly associated with the ability to identify what customers want, adapt products and services to specific demands and respond quickly to complaints or suggestions.

Customization appeared as a relevant advantage of micro and small enterprises. Because these firms usually have fewer hierarchical levels and closer contact with customers, they can adapt their services more easily than larger organizations. This proximity also helps owners and managers understand customer dissatisfaction, uncertainty and expectations.

The companies mentioned different mechanisms for evaluating customer satisfaction, including after-sales contact, phone calls, direct communication by salespeople, customer satisfaction forms and social networks. Some companies reported using Facebook and other digital channels to observe customer evaluations and collect feedback. These practices show that social media already functions as an informal tool for customer relationship management.

However, the use of digital channels remains mostly practical and informal. The companies use these tools to communicate with customers and observe satisfaction, but customer feedback is not always recorded, classified or analyzed systematically. Thus, digital communication contributes to customer service, but its potential for quality management and continuous improvement is still underused.

Recent literature on digital marketing and social media reinforces the relevance of this finding. Digital channels can support customer engagement, brand awareness, service evaluation and faster feedback loops. For micro and small enterprises, these tools are especially important because they are low-cost and accessible [2, 8, 24]. Nevertheless, to generate stronger quality management results, customer feedback obtained through digital channels should be integrated into formal improvement routines.

4.6 Involvement of the Workforce

The Involvement of the Workforce dimension examines leadership, employee participation, autonomy, empowerment, training and communication between owners, managers and employees [3, 16]. In the companies studied, this dimension was strongly influenced by the direct presence of the owner or manager. The main results related to this dimension are summarized in Table 9.

Table 9

Relationship between theory and results: Involvement of the Workforce

Dimension	Theoretical elements	Results observed in the companies
Involvement of the Workforce	Personal authority and leadership; low resistance to change; motivation for individual creativity; few managerial levels; communication with employees and customers; workforce training; empowerment; delegation; employee participation in process improvement; development of competencies and shared quality standards.	Strong presence of owner or manager leadership; high importance attributed to employee empowerment; autonomy granted when workers demonstrate capacity to improve processes; leadership perceived as central to workforce motivation; direct communication between owner or manager and employees; family-like relationships influencing work routines; limited formal delegation of tasks; need for more structured training and clearer procedures to support employee autonomy.

The interviewees perceived themselves as leaders and emphasized their role in guiding employees, supervising activities and motivating the workforce. This proximity between owner and employees is a relevant characteristic of micro and small enterprises, since it facilitates communication, reduces hierarchical distance and allows faster correction of operational problems.

Employee autonomy was also mentioned by the interviewees, but it appeared as a conditional practice. In general, workers are allowed to modify or improve tasks when they demonstrate that the change produces satisfactory results. This indicates that empowerment exists, but it depends strongly on the approval and judgment of the owner or manager.

This pattern reveals both a strength and a limitation. On one hand, direct leadership can increase trust, motivation and commitment. On the other hand, excessive dependence on the owner may reduce delegation, limit employee initiative and make quality practices less stable. When decisions remain concentrated in the leader, the company may face difficulties in maintaining quality standards during growth or in the absence of the owner.

Training is therefore essential for strengthening workforce involvement. Employee autonomy should not depend only on personal trust or informal experience, but also on clear procedures, shared standards and capacity building. In this sense, workforce involvement needs to be connected to the Set of Methods dimension. Employees can participate more effectively in quality improvement when they understand procedures, indicators, customer expectations and process goals.

Overall, the findings suggest that the involvement of the workforce in micro and small enterprises is strongly supported by interpersonal relationships and direct leadership. However, for this dimension to contribute more consistently to TQM, these relationships should be complemented by training, formal delegation, documented routines and shared quality standards [6].

4.7 Synthesis of Findings

The empirical results show that TQM in micro and small enterprises assumes a specific configuration. Rather than appearing as a fully formalized managerial system, TQM is expressed through informal routines, direct supervision, customer proximity, flexible planning and strong interpersonal relationships. This configuration reflects the characteristics of small firms in emerging

economies, where managerial practices are often shaped by resource constraints, market instability and the central role of the owner or manager [6, 14, 19].

A central finding of this study is the coexistence of strong soft TQM practices and fragile hard TQM practices. Soft TQM is evident in organizational culture, communication with customers, direct leadership, concern for employee well-being and proximity to stakeholders. These elements show that quality is not perceived only as product or service conformity, but as a broader organizational practice embedded in daily relationships [15, 22].

However, the same flexibility that strengthens these enterprises may also limit their capacity for systematic improvement. The family-like environment, reduced hierarchy and direct involvement of the owner facilitate communication and rapid decision-making, but they may reduce the formalization of procedures, indicators and responsibilities. Therefore, the main managerial challenge identified is not the absence of concern with quality, but the difficulty of transforming informal quality practices into stable, documented and measurable routines.

The Set of Methods dimension illustrates this tension. Although owners and managers recognize the importance of standardization, process control and inspection, many procedures are still conducted empirically, randomly or under the direct supervision of the owner. This indicates that hard TQM practices remain underdeveloped in the companies studied. From a contemporary perspective, this limitation is relevant because structured data, documented processes and systematic control are important conditions for digital transformation and technological readiness [1].

Another relevant finding is the role of social networks and digital communication channels. In the companies studied, social media appeared mainly as a practical tool for customer communication, service evaluation and relationship maintenance. This use can be interpreted as an initial form of digital customer relationship management. However, these tools are still used more as communication channels than as structured sources of quality information [2, 8, 24].

This creates a gap between front-office and back-office practices. On one hand, the companies are close to customers and can obtain feedback quickly through direct contact, phone calls and social media. On the other hand, this feedback is not always recorded, classified or transformed into indicators, training actions or process redesign. Thus, customer orientation is a strong point of the companies studied, but its contribution to continuous improvement could be increased if feedback were systematically incorporated into managerial routines.

Continuous improvement also appears as a relevant but partially formalized dimension. The companies recognize the importance of training, communication and customer perception, but most of them do not use structured performance measurement tools. Improvement is frequently based on empirical observation, conversations with customers and the owner's direct perception of results. Supplier collaboration, benchmarking and sustainability-oriented practices may therefore represent important paths for strengthening quality management in micro and small enterprises [12, 25, 27, 29].

The Involvement of the Workforce dimension also reveals an important tension. Owners and managers recognize the importance of employees for quality, but autonomy is often conditional and depends on the worker's demonstrated ability to produce satisfactory results. As a result, empowerment exists, but it is not always supported by formal training, documented procedures or shared standards [3, 6].

Overall, the findings indicate that TQM in micro and small enterprises should be understood as an adaptive and relationship-based management system. Philosophy, Customer Service and Involvement of the Workforce tend to appear more naturally, supported by proximity, trust and

informal communication. Set of Methods and Continuous Improvement, however, require greater managerial effort because they depend on documentation, measurement, training and systematic learning.

Therefore, the challenge for micro and small enterprises is not simply to adopt TQM, but to adapt it to their scale, resources and organizational culture. The companies studied already possess important elements of quality management, especially customer orientation, flexibility and leadership. However, these elements need to be complemented by more structured methods, digital feedback records, supplier collaboration, employee training and sustainability-oriented improvement practices.

As a synthesis of the empirical findings, Figure 1 presents the main quality factors identified according to the five TQM dimensions analyzed in this study.

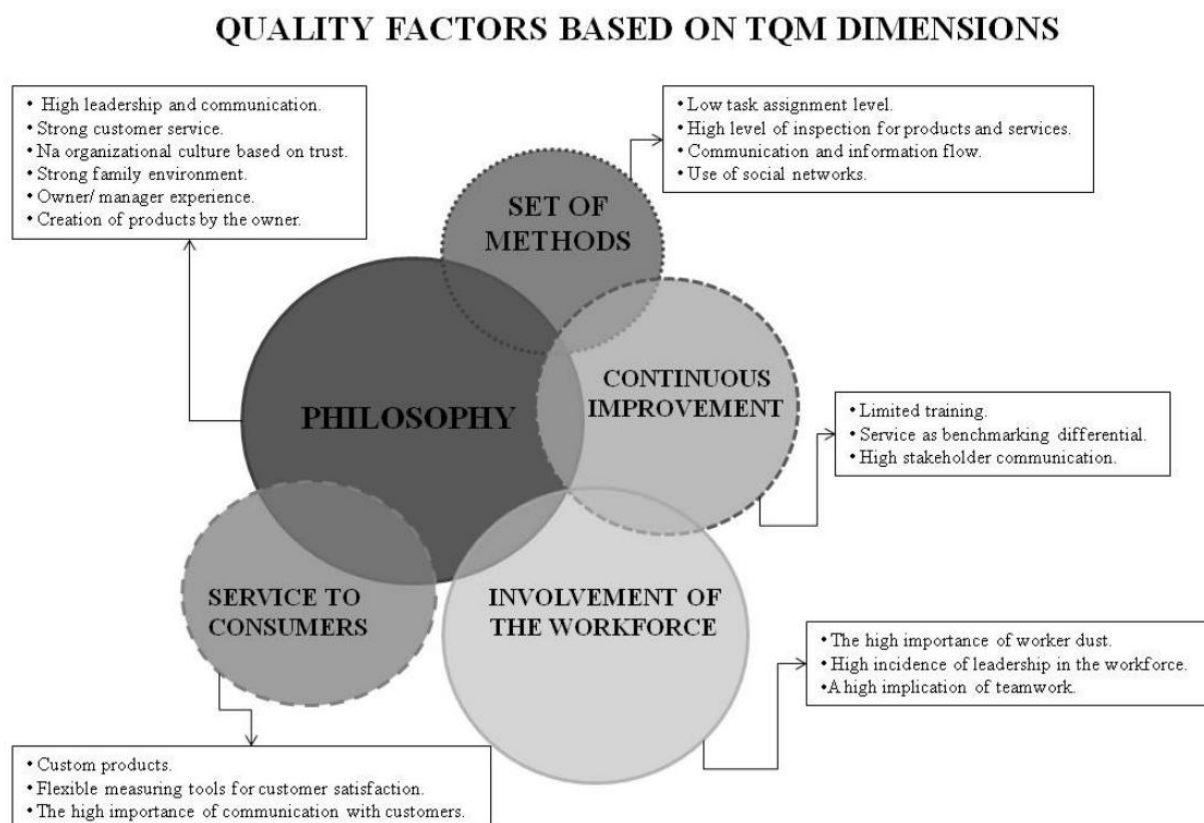


Fig. 1. Quality factors based on TQM dimensions

5. Conclusions

This study aimed to identify and categorize the variables that influence Total Quality Management (TQM) for process improvement in micro and small enterprises, based on the perception of owners and managers in Brazilian and Colombian companies. The results show that the most relevant quality strategies observed across the five dimensions were flexible planning, use of social networks for customer communication, few hierarchical levels, identification of customer needs through direct interaction, strong leadership and close communication with employees.

The findings indicate that owners and managers are concerned with quality and customer satisfaction. However, they do not always have specific methods, formal tools or structured procedures to support quality management. In many cases, quality practices are based on direct supervision, empirical inspection, informal communication and the personal experience of the owner or manager. This confirms that TQM is present in micro and small enterprises, but often in an informal and partially systematized form.

The results also show that soft TQM practices are more evident than hard TQM practices. Philosophy, Customer Service and Involvement of the Workforce are supported by proximity, trust, flexibility and direct communication. These elements represent important advantages for micro and small enterprises, especially in emerging economies. Nevertheless, the Set of Methods and Continuous Improvement dimensions still require greater formalization. The lack of documented procedures, systematic performance measurement and structured training limits the capacity of these companies to improve processes consistently and expand their operations [6, 22].

In the current business context, this limitation becomes even more relevant. Digital transformation, social media use, customer feedback systems, supply chain integration and sustainability oriented practices are increasingly connected to quality management. The companies studied already use some digital channels, especially social networks, to communicate with customers and observe satisfaction. However, these tools are still mostly used in an informal way. For this reason, micro and small enterprises could benefit from transforming customer feedback into organized information capable of supporting decision-making, training, process redesign and continuous improvement [1, 2, 8].

The study also suggests that quality improvement in micro and small enterprises should not depend only on internal resources. Collaboration with suppliers, benchmarking practices and supply chain integration may support the adoption of better standards and reduce operational weaknesses. Similarly, sustainability practices, such as waste reduction and efficient use of resources, can be incorporated into continuous improvement strategies, contributing simultaneously to cost reduction, competitiveness and long-term business viability [12, 25].

One limitation of this research was the difficulty of identifying a unified theory on the dimensions of TQM applicable to micro and small enterprises. Another limitation was the difficulty of finding owners and managers willing to participate in the research, especially in Colombia, where the response rate was lower than in Brazil. Therefore, future studies may expand the sample, include other emerging economies and compare different sectors in order to deepen the understanding of how TQM dimensions are adapted to the reality of small firms.

Despite these limitations, this study contributes to the understanding of how TQM dimensions are perceived and practiced in micro and small enterprises in emerging economies. The main contribution of the article is to clarify the quality management needs of these firms and to indicate practical paths for adapting TQM to their reality. Rather than applying complex models designed for large corporations, micro and small enterprises need accessible, flexible and low-cost quality management practices that respect their organizational characteristics while helping them improve products, services and processes.

Author Contributions

All authors contributed to the conceptualization, methodology, validation, formal analysis, investigation, resources, writing – original draft preparation, writing – review and editing, visualization, supervision and project administration. All authors have read and agreed to the published version of the manuscript.

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Conflicts of Interest

The authors declare no conflicts of interest.

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References

- [1] Ali, K., Johl, S. K., Muneer, A., Alwadain, A., & Ali, R. F. (2022). Soft and hard total quality management practices promote Industry 4.0 readiness: A SEM-neural network approach. *Sustainability*, 14(19), 11917. <https://doi.org/10.3390/su141911917>
- [2] Alkhasoneh, O. M., Jamaludin, H., Zahar, A. R. B., & Al-Sharafi, M. A. (2025). Drivers of social media use among SMEs and its impact on brand awareness and customer engagement. *Asia-Pacific Journal of Business Administration*, 17(3), 595–615. <https://doi.org/10.1108/APJBA-02-2024-0102>
- [3] Antony, J. (2015). The ten commandments of quality: A performance perspective. *International Journal of Productivity and Performance Management*, 64(5), 723–735. <https://doi.org/10.1108/IJPPM-10-2014-0167>
- [4] Antony, J., Kumar, M., & Madu, C. N. (2005). Six sigma in small- and medium-sized UK manufacturing enterprises: Some empirical observations. *International Journal of Quality & Reliability Management*, 22(8), 860–874. <https://doi.org/10.1108/02656710510617265>
- [5] Arasli, H. (2002). Gearing total quality into small and medium-sized hotels in North Cyprus. *Journal of Small Business Management*, 40(4), 350–359. <https://doi.org/10.1111/1540-627X.00062>
- [6] Beraki, M. T., Tessema, M. T., Plecka, M., & Abdourrahmane, M. (2022). Factors affecting the implementation of total quality management (TQM) in small and medium-sized enterprises (SMEs): The case of South Africa. *Journal of Organizational Culture, Communications and Conflict*, 26(3), 1–14.
- [7] Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). SAGE Publications.
- [8] Deku, W. A., Wang, J., & Preko, A. K. (2024). Digital marketing and small and medium-sized enterprises' business performance in emerging markets. *Asia Pacific Journal of Innovation and Entrepreneurship*, 18(3), 251–269. <https://doi.org/10.1108/APJIE-07-2022-0069>
- [9] Gibbs, G. (2009). *Analysis of qualitative data*. Artmed Editora.
- [10] Ibbotson, P., & Moran, L. (2003). E-banking and the SME/bank relationship in Northern Ireland. *International Journal of Bank Marketing*, 21(2), 94–103. <https://doi.org/10.1108/02652320310461474>
- [11] Kallio, H., Pietilä, A.-M., Johnson, M., & Kangasniemi, M. (2016). Systematic methodological review: Developing a framework for a qualitative semi-structured interview guide. *Journal of Advanced Nursing*, 72(12), 2954–2965. <https://doi.org/10.1111/jan.13031>
- [12] Masoudi, E., & Shahin, A. (2025). The impact of TQM on quality performance: The mediating role of supply chain integration in manufacturing SMEs. *The TQM Journal*. <https://doi.org/10.1108/TQM-02-2025-0069>
- [13] McGrath, R. G. (2013). *The end of competitive advantage*. Harvard Business Review Press.
- [14] Mendes, L., & Lourenço, L. (2014). Factors that hinder quality improvement programs' implementation in SME. *Journal of Small Business and Enterprise Development*, 21(4), 690–715. <https://doi.org/10.1108/JSBED-03-2014-0054>
- [15] Ooi, K.-B., Bakar, N. A., Arumugam, V., Vellapan, L., & Loke, A. K. Y. (2007). Does TQM influence employees' job satisfaction? An empirical case analysis. *International Journal of Quality & Reliability Management*, 24(1), 62–77. <https://doi.org/10.1108/02656710710720330>

- [16] Paladini, E. P. (2012). *Quality management: Theory and practice* (3rd ed.). Atlas.
- [17] Parasuraman, A., & Colby, C. L. (2002). *Techno-ready marketing: How and why your customers adopt technology*. Free Press.
- [18] Parry, S., Jones, R., Rowley, J., & Kupiec-Teahan, B. (2012). Marketing for survival: A comparative case study of SME software firms. *Journal of Small Business and Enterprise Development*, 19(4), 712–728. <https://doi.org/10.1108/14626001211277488>
- [19] Peschken, T., Shukla, P., Lennon, J., & Rate, S. (2016). The role of information alignment and entrepreneurial traits on SME internationalization. *Management Research Review*, 39(2), 196–214. <https://doi.org/10.1108/MRR-11-2015-0271>
- [20] Prajogo, D. I., & Sohal, A. S. (2004). The multidimensionality of TQM practices in determining quality and innovation performance: An empirical examination. *Technovation*, 24(6), 443–453. [https://doi.org/10.1016/S0166-4972\(02\)00122-0](https://doi.org/10.1016/S0166-4972(02)00122-0)
- [21] Pratono, A. H. (2016). Strategic orientation and information technological turbulence. *Business Process Management Journal*, 22(2), 368–382. <https://doi.org/10.1108/BPMJ-05-2015-0066>
- [22] Rahman, S.-U., & Bullock, P. (2005). Soft TQM, hard TQM, and organisational performance relationships: An empirical investigation. *Omega*, 33(1), 73–83. <https://doi.org/10.1016/j.omega.2004.03.008>
- [23] SEBRAE. (2026, June). *Pequenos negócios somam 24 milhões de empresas ativas*. <https://agenciasebrae.com.br/dados/pequenos-negocios-somam-24-milhoes-de-empresas-ativas/>
- [24] Sharabati, A.-A. A., Ali, A. A. A., Allahham, M. I., Hussein, A. A., Alheet, A. F., & Mohammad, A. S. (2024). The impact of digital marketing on the performance of SMEs: An analytical study in light of modern digital transformations. *Sustainability*, 16(19), 8667. <https://doi.org/10.3390/su16198667>
- [25] Tegethoff, T., Santa, R., Bucheli, J. M., Cabrera, B., & Scavarda, A. (2025). Sustainable development through eco-innovation: A focus on small and medium enterprises in Colombia. *PLOS ONE*, 20(1), e0316620. <https://doi.org/10.1371/journal.pone.0316620>
- [26] Valmohammadi, C. (2011). The impact of TQM implementation on the organizational performance of Iranian manufacturing SMEs. *The TQM Journal*, 23(5), 496–509. <https://doi.org/10.1108/17542731111157608>
- [27] Wagner, R., & Paton, R. A. (2014). Strategic toolkits: Practice and performance: A German SME perspective. *VINE: The Journal of Information and Knowledge Management Systems*, 44(4), 470–495. <https://doi.org/10.1108/VINE-03-2014-0019>
- [28] Yunis, M., Jung, J., & Chen, S. (2013). TQM, strategy, and performance: A firm-level analysis. *International Journal of Quality & Reliability Management*, 30(6), 690–714. <https://doi.org/10.1108/02656711311325638>
- [29] Zeinalnezhad, M., Mukhtar, M., & Sahran, S. (2014). An investigation of lead benchmarking implementation. *Benchmarking: An International Journal*, 21(1), 121–145. <https://doi.org/10.1108/BIJ-09-2011-0074>