

CULTURE OF QUALITY

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ABSTRACT

Developing and sustaining a culture of quality is increasingly recognized as essential in today's competitive and rapidly evolving environments. However, what do people mean when they talk about *culture of quality*? We claim that this question has not been fully addressed yet. The theoretical and practical use of the term *culture of quality* or *quality culture* in the literature are diverse. Therefore, there is a need for a synthesis of the literature on culture of quality to explore and frame commonalities and differences across the range of implications. In this paper, we explored the blueprints of culture of quality and performed a systematic literature review (SLR) of this concept. We adopted an abductive approach to analyze 134 articles. Outcomes of the SLR suggest that the implications of a culture of quality refers to the collective values, attitudes, and behaviors that drive individuals and teams to prioritize quality as an intrinsic goal rather than merely a compliance requirement. Such implications had been captured in this paper to provide a comprehensive overview of what culture of quality means.

KEYWORDS

Quality, culture, culture of quality, quality culture, systematic literature review.

INTRODUCTION

"Quality has much in common with sex. Everyone is for it. (Under certain conditions, of course). Everyone feels they understand it. (Even though they wouldn't want to explain it). Everyone thinks execution is only a matter of following natural inclinations. (After all, we do get along somehow). And, of course, most people feel that all problems in these areas are caused by other people. (If only they would take time to do things right). In a world where half the marriages end in divorce or separation, such assumptions are open to question." – Crosby (1979 p. 15)

Indeed, while quality has long been recognized as central to organizational success, many industries continue to struggle with achieving it consistently. Quality gurus like W. Edwards Deming, Philip B. Crosby, and Joseph M. Juran have emphasized its importance in driving sustainable excellence, yet quality issues persist. In construction, for example, failing to meet quality often results in dissatisfied clients, costly rework, and delays. Rework alone can account for up to 12% of total project costs (Love et al., 1999) and extend project schedules by as much as 9.8% (Dougherty et al., 2012). Despite these substantial impacts when quality isn't met, rework is often overlooked and remains untracked in many projects (Love et al., 1999; CII, 2001; Ford & Sterman 2003; Formoso et al., 2011). Contributing factors include a perception that rework is unavoidable and therefore not worth monitoring, a lack of systems to effectively track it (CII, 2001), and concerns that rework could harm a company's reputation (Arditi and Gunaydin 1997).

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Deming (1986) challenged traditional views on quality, advocating for organizations to "cease dependence on inspection to achieve quality." Misunderstanding quality can lead to systemic issues, such as the normalization of rework or the acceptance of suboptimal practices. Crosby (1979) proposed shifting the conventional view of quality from "Quality means goodness; it is unmeasurable; error is inevitable; and people just don't give a damn about doing good work." to "Quality is conformance to requirements; it is precisely measurable; error is not required to fulfill the laws of nature; and people work just as hard now as they ever did."

While systems, standards, and compliance measures are essential, they alone are insufficient to address the root causes of quality failures (Gomez, 2023). This persistent struggle to deliver quality highlights a deeper issue: quality is often treated as a technical or procedural goal rather than a cultural one. Quality requires a foundation that extends beyond processes, one that reshapes beliefs, intentions, attitudes, and behaviors within an organization; these are key attributes to describing a culture (Johari & Jha, 2020). This focus on culture is particularly critical because quality, as Crosby (1979) observed, is often misunderstood. Hofstede, a pioneer in the study of culture, defined culture as "what we share with those around us", highlighting its role as a shared force shaping how people think, feel, and act in their work. Unlike checklists or technical protocols that enforce compliance, culture fosters intrinsic alignment with quality. This perspective aligns with Crosby's (1979) call to view quality as "people-oriented," highlighting the need to consider the human element in delivering quality.

But what exactly is *culture of quality* and how can it be cultivated to drive organizational success? While some papers have addressed these questions by highlighting specific practices, leadership behaviors, or cultural traits that influence quality outcomes, there remains a need for a comprehensive synthesis that integrates diverse perspectives. This paper explores these questions through a systematic literature review, examining theoretical frameworks, case studies, and practical examples. As Feak and Swales (2009, p. 3) highlighted, such reviews are instrumental in "clarifying the state of existing research and the implications that should be drawn from this." Through this methodical exploration, the study aims to provide a deeper understanding of the construct of culture of quality and advance its practical application in organizational and team contexts.

Ultimately, the paper aspires to shift quality from being viewed as an operational goal to being recognized as a shared cultural imperative. By cultivating a culture where quality becomes embedded in collective values and behaviors, organizations can achieve more than procedural compliance; they can cultivate an environment where excellence is both expected and consistently delivered, driving sustainable success.

RESEARCH METHOD

This study employs a systematic literature review (SLR) to explore the concept of a culture of quality. An SLR follows a systematic, transparent, and reproducible process to identify academic literature on a clearly defined topic (Fisch & Block, 2018). The study aims to answer:

- What do researchers mean by "culture of quality"?
- What research has been done on dimensions descriptive of having a culture of quality?
- How are culture of quality and Lean connected?
- What are common patterns that support having a culture of quality?
- What are common challenges faced when trying to cultivate a culture of quality?
- What benefits can be expected when cultivating a culture of quality?

Figure 2 shows the process followed, resulting in 110 articles from the databases search. In addition, the researchers identified 24 relevant publications deemed essential to the study, which were added to the final dataset. This resulted in a total of 134 manuscripts that were

imported into NVivo 15 for coding and analysis. The study applied a combination of inductive and deductive coding strategies (Opdyke et al., 2017) to categorize findings, analyze emerging themes, and interpret the current state of research on the culture of quality.

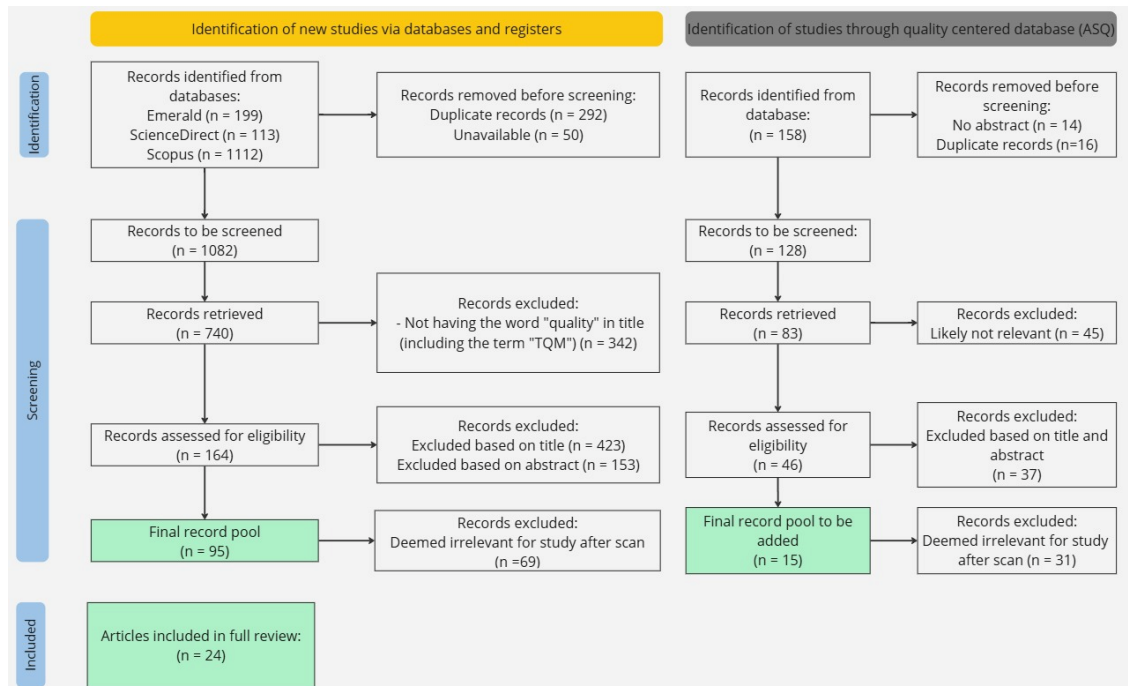


Figure 1: Research Method PRISMA Flow Diagram

RESULTS AND DISCUSSION

DESCRIPTIVE ANALYSIS

The publication years of the selected sources span from 1979 to 2024. A chronological analysis of the papers reveals a steady increase in research interest, with peak numbers in 2019 and 2023. This surge corresponds with a broader shift in organizational studies toward understanding quality beyond compliance measures, emphasizing cultural and behavioral dimensions (e.g., Bendermacher et al., 2017; Gomez, 2023; Alkhawaldeh, 2024). These studies span multiple industries (Table 1), including manufacturing, construction, healthcare, and education, indicating the cross-sectoral relevance of the culture of quality.

Table 1: Culture of Quality Papers by Industry

Industry	Count	Most Cited Papers*
Education	28	Ehlers (2009), Harvey & Stensaker (2008), Dzimińska et al. (2018)
Construction	21	Yasamis et al. (2002)
Manufacturing	17	Adebanjo & Kehoe (1998), Adebanjo & Kehoe (1999), Cameron & Sine (1999), Durana et al. (2019), Jinhui Wu et al. (2011)

*Papers with over 100 citations

DEFINITIONS OF CULTURE OF QUALITY

Trends reveal that research on quality culture has evolved in three main waves. The first wave, from the late 1990s to early 2000s, primarily focused on defining the concept and exploring its role in manufacturing (Adebanjo & Kehoe, 1998; Adebanjo & Kehoe, 1999; Cameron & Sine,

1999). The second wave, from 2010 to 2020, expanded its scope to include organizational behavior, leadership, employee engagement, and how these influence organizational quality outcomes (Alotaibi et al., 2013; Gomez et al. 2019). The third and most recent wave, from 2020 on, integrates sustainability, psychological safety, and continuous improvement as critical components of quality culture (Gomez 2023; Alkhawaldeh, 2024; Albaroudi & Iqbal, 2024).

The concept of "culture of quality" is multi-dimensional and has evolved over time as organizations recognize its critical role in achieving excellence. Table 2 summarizes the most frequent definitions cited in the literature. These definitions emphasize shared values, leadership commitment, and continuous improvement as key components (Goetsch & Davis, 1994; Malhi, 2013; Alkhawaldeh, 2024). While definitions of a culture of quality vary across industries and contexts, the core idea remains the same: *Culture of quality starts with how we think, shows in how we act, and lasts in what we build.*

Table 2: Culture of Quality Definitions

Definition	Reference	# of times cited
Subset of organizational culture, reflects values and orientation towards quality	Cameron & Sine (1999)	13
Set of values and principles, focused on customer and continuous improvement	Malhi (2013)	10
System of values leading to an environment that establishes quality and continuous improvement	Goetsch & Davis (1994)	9
Organizational culture, intends to enhance quality permanently and has two elements	European University Association (2006)	8

DIMENSIONS OF A CULTURE OF QUALITY

A quality culture is a multifaceted construct built on several interrelated dimensions that reinforce each other to create a sustained focus on quality. These dimensions, influencing both the organizational environment and individual behaviors, have been evolving over time.

Values

A central element of quality culture is the shared set of values within the organization. Quality culture values might include a commitment to customer satisfaction (Adebanjo & Kehoe, 1999; Alzate-Ibanez et al., 2023), continuous improvement (Yasamis et al., 2002), responsibility (Pratama et al., 2021; Dzimińska, 2023), and ethical behavior (Sattler & Sonntag, 2018a; Zgodavova et al., 2017). The culture of quality thrives when employees internalize these values and align their actions with the organization's quality goals.

Principles

Quality culture is supported by guiding principles that shape how people behave:

- Pursue continuous improvement: This approach promotes innovation, proactive problem-solving, and learning from both successes and failures (Adebanjo & Kehoe, 1999; Xiaoxiang & Liping, 2011; Zgodavova et al., 2017).
- Foster psychological safety: A strong culture of quality relies on employee engagement and the presence of psychological safety (Pratama et al., 2021; Karim, et al. 2022; Gomez, 2023; Chu & Hansen, 2024).
- Institute training on the job: Training supports hands-on learning and immediate feedback (Crosby, 1979; Deming, 1986; Tomic & Spasojevic Brkic, 2017; Rahman Alhejoj et al., 2023).

- Promote a caring mindset: Organizations committed to quality culture focus on meeting and exceeding customer expectations (Gomez et al., 2019).
- Encourage motivation, collaboration, and ownership: Quality culture thrives when everyone, from management to workers, shares responsibility for quality outcomes (Forbes Insights & ASQ, 2014).
- Enhance transparency and build trust: While secrecy and delicacy in information management are common in many organizations, transparency provides access to quality information and customer feedback (El Safty, 2013).

Beliefs

Beliefs shape how individuals and teams perceive and approach quality, influencing behaviors, decision-making, and priorities (Gomez, 2023). They serve as foundational frameworks that define quality's significance within an organization (Alotaibi et al., 2013). Crosby (1979) emphasized that "quality is free... What costs money are the unquality things—all the actions that involve not doing jobs right the first time," highlighting that quality is an investment in prevention, precision, and people rather than an expense. In organizations with a strong quality culture, quality is seen as an integral part of identity, contributing to long-term success, customer satisfaction, and competitive advantage (Salah, 2020). Employees believe that quality is a shared responsibility, spanning from leadership to frontline workers, fostering a collective commitment to continuous improvement (Patel et al., 2015; Jinhui Wu et al., 2011).

Presuppositions

Presuppositions are the underlying assumptions that shape how individuals and organizations approach quality. In a quality culture, a key assumption is that quality must be continuously pursued. These often implicit, taken-for-granted beliefs influence team behavior and remain largely unquestioned. For example, a presupposition about employees' roles in quality may involve the belief that they are empowered to drive improvements and identify enhancement opportunities (Závadský et al., 2020; Sattler & Sonntag, 2018a).

Common assumptions about quality, such as "quality lies in the eyes of the beholder", or "information is ambiguous and conflicting" need to be challenged and reshaped with shared understandings that support consistency, clarity, and proactive communication (Gomez, 2023).

Attitudes

Attitudes toward quality, shaped by organizational norms, leadership influence, and personal experiences, determine how individuals approach quality-related tasks and collaborate with others (Tomic & Spasojevic Brkic, 2017). In a strong quality culture, employees adopt proactive behaviors, viewing challenges as opportunities for innovation and process refinement. Rather than perceiving defects as failures, they see them as learning opportunities to drive improvement (Zgodavova et al., 2017; Salah, 2020). When leaders consistently demonstrate a commitment to quality and model a positive approach to improvement, employees at all levels are more likely to adopt the same mindset (Tomic & Spasojevic Brkic, 2017; Han et al., 2019).

Intentions

Intentions are the underlying motivations and goals that drive actions within an organization. In a culture of quality, the intention to continuously improve, innovate, and exceed customer expectations becomes a driving force behind daily actions (Salah, 2020; Závadský et al., 2020). Intentions shape how teams collaborate, how problems are solved, and how customer feedback is integrated into process improvements. For example, if the leadership team intends to cultivate an environment where innovation and quality improvement are central, it will align resources, provide training, and create systems that empower employees to make improvements (Sattler & Sonntag, 2018a).

Behaviors

A culture of quality is reflected in employees' behaviors at all levels, which are shaped by the organization's underlying beliefs, attitudes, and intentions (Gomez, 2023). As one of the most visible dimensions of quality culture, behaviors demonstrate how individuals act and interact in pursuit of quality objectives (Jinhui Wu et al., 2011; Pounds et al., 2015; Závadský et al., 2020; Gomez, 2023). To ensure quality is more than an abstract concept, organizations must cultivate behaviors that align with their quality goals, embedding quality into daily routines (Zgodavova et al., 2017; Sattler & Sonntag, 2018).

In strong quality cultures, behaviors reflect a commitment to continuous improvement, collaboration, accountability, and excellence. Employees actively engage in problem-solving, address issues promptly, and communicate openly about quality concerns. This proactive approach prevents issues from escalating and promotes shared responsibility for quality (Salah, 2020; Závadský et al., 2020). Additionally, behaviors such as maintaining consistency in quality standards, paying attention to detail, and challenging ineffective processes support quality outcomes (Gomez, 2023). Collaboration is another key behavior in quality culture, as high-quality outcomes depend on cross-functional teamwork and knowledge sharing. Mutual respect, open communication, and joint problem-solving enable successful implementation of quality initiatives (Jinhui Wu et al., 2011; Sattler & Sonntag, 2018a; Závadský et al., 2020; Gomez, 2023). Employees who exhibit flexibility and a solution-oriented mindset in response to changing customer needs or evolving market conditions contribute to the organization's overall quality strategy (Zgodavova et al., 2017).

Psychological Safety

Psychological safety is a critical dimension of quality culture, providing an environment where employees feel safe to take interpersonal risks—such as offering ideas, reporting problems, and suggesting improvements—without fear of retribution or negative consequences (Edmondson, 1999; Wolniak & Olkiewicz, 2019). When employees believe their input is valued rather than judged, they are more likely to contribute to innovation and continuous improvement (Jinhui Wu et al., 2011; Zgodavova et al., 2017; Sattler & Sonntag, 2018a). To support quality culture, employees must feel empowered to speak up about quality issues, provide feedback, and challenge existing processes without fear of humiliation or punishment (Karim et al., 2022; Chu & Hansen, 2024). This openness enables transparency and collaboration, essential for identifying areas of improvement (Wolniak & Olkiewicz, 2019; Sattler & Sonntag, 2018a).

Leadership and Governance

Leadership is a cornerstone of quality culture, shaping how quality is embedded into an organization's operations and priorities (Tomic & Spasojevic Brkic, 2017; Sattler & Sonntag, 2018b; Hildesheim & Sonntag, 2019; Kumar et al., 2021;). Crosby (1979) emphasized that *"quality [must be] a leading part of the operation, a part equal in importance to every other part."* He advocated for active management participation, structured quality programs, and recognition systems to drive employee engagement. Similarly, Deming (1986) stressed that leaders must *"drive out fear"* to enable employees to contribute effectively, as *"no one can put in his best performance"* without a sense of security. Leaders play a crucial role in setting expectations around quality and aligning it with organizational goals, nurturing a climate of psychological safety where employees feel encouraged to voice concerns and contribute to quality improvements (Adebanjo & Kehoe, 1998; Tomic & Spasojevic Brkic, 2017; Závadský et al., 2020; Alkhawaldeh, 2024). To be effective, leaders must champion quality as a non-negotiable priority, demonstrating a clear and consistent commitment while inspiring employees to achieve shared goals (Xiaoxiang & Liping, 2011; Bendermacher et al., 2017; Zgodavova et al., 2017; Sattler & Sonntag, 2018a; Závadský et al., 2020).

CULTURE OF QUALITY AND LEAN

The integration of Lean principles with a culture of quality offers significant potential for organizations aiming to achieve operational excellence and enhance quality:

Lean Principles as Enablers of Quality Culture

Lean promotes continuous improvement, respect for people, and process optimization, reinforcing key quality culture behaviors (Tang et al., 2010; Jinhui Wu et al., 2011; Salah, 2020; Závadský et al., 2020). Concepts such as Kaizen (continuous improvement) and Jidoka (automation with human oversight) create a culture where quality is a shared responsibility at all levels. Value stream mapping enables organizations to eliminate non-value-adding activities while maintaining customer satisfaction (Rother & Shook, 1999; Zgodavova et al., 2017; Závadský et al., 2020). Organizations with a strong quality culture provide an environment where Lean can thrive.

Customer Focus and Value Delivery

Both Lean and quality culture are customer-centric, viewing customer satisfaction as a reflection of the entire value delivery process (Xiaoxiang & Liping, 2011; Zgodavova et al., 2017; Salah, 2020; Herbas Torrico & Canaza Fernandez, 2021). Lean maximizes customer value by minimizing delays, defects, and inefficiencies. When organizations integrate Lean with quality culture, they become better equipped to understand and meet customer needs (Jinhui Wu et al., 2011; Zgodavova et al., 2017; Sattler & Sonntag, 2018a; Závadský et al., 2020). Value stream mapping identifies waste, while a quality culture ensures the customer's voice is integrated into decision-making.

Continuous Improvement

Deming (1986) argued for leadership to *“improve constantly and forever the system of production and service.”* Both Lean and quality culture embrace continuous improvement as a core principle (Womack & Jones, 1996; Liker, 2004; Jinhui Wu et al., 2011; Zgodavova et al., 2017). Organizations adopting Lean exhibit a higher commitment to quality, as Lean promotes standardized work, employee involvement, and problem-solving (Shingo, 1988). Studies show that embedding Kaizen into daily operations results in sustained quality improvements (Imai, 1986; Liker, 2004). Lean tools such as value stream mapping, root cause, 5S drive continuous improvement, while quality culture ensures that employees embrace these efforts (Salah, 2020).

The synergy between Lean and quality culture institutionalizes continuous improvement across production, service, and organizational development. Organizations promoting a “do things better every day” mindset empower employees to engage in problem-solving and proactive innovation, leading to greater efficiency, lower costs, and enhanced customer satisfaction (Sattler & Sonntag, 2018a; Zhang & Yang, 2011; Závadský et al., 2020). Quality-driven organizations view improvement as an ongoing effort, ensuring that feedback is continuously evaluated (Xiaoxiang & Liping, 2011; Zhang & Yang, 2011).

Standardization and Visual Management

Standardization is a foundation for both Lean and quality culture, ensuring consistency, minimizing variation, and reducing errors (Ohno, 1988; Shingo, 1988; Sattler & Sonntag, 2018a; Zhang & Yang, 2011). Standardized work provides a baseline for continuous improvement, ensuring that employees follow best practices and maintain consistent quality (Herbas Torrico & Canaza Fernandez, 2021; Zgodavova et al., 2017). Standards evolve continuously, improving based on feedback, data, and employee input, ensuring that quality remains a long-term pursuit rather than a one-time effort (Salah, 2020).

Visual management enhances transparency and supports a culture of quality (Sattler & Sonntag, 2018; Tezel et al., 2009; Sattler & Sonntag, 2021). Tools like dashboards, performance

boards, and color-coded indicators allow employees to quickly assess operations and identify areas requiring improvement (Herbas Torrico & Canaza Fernandez, 2021; Zgodavova et al., 2017). Visual management empowers employees to address quality issues proactively (Tezel et al., 2009). For example, quality dashboards displaying defect rates allow workers to take immediate corrective action instead of waiting for managerial intervention. This transition from top-down control to a collaborative, proactive model reinforces quality ownership across all levels (Zhang & Yang, 2011). The transparency provided by visual management enhances team communication, reinforcing a culture of shared responsibility for quality outcomes (Salah, 2020; Jinhui Wu et al., 2011).

People-Focused: Leadership, Involvement, and Empowerment

A culture of quality thrives on employee participation at all levels. Lean encourages organizations to involve employees in decision-making, problem-solving, and process improvements, ensuring that quality is not only the responsibility of management but also shared by all employees (Adebanjo & Kehoe, 1998; Xiaoxiang & Liping, 2011). For instance, Lean practices, such as Gemba walks (where team members observe work processes at the site) and employee-driven improvement teams, rely heavily on the input and active participation of team members to drive continuous improvement (Adebanjo & Kehoe, 1998; Herbas Torrico & Canaza Fernandez, 2021). This participatory approach emphasizes the importance of creating an environment where employees feel valued, respected, and supported in their roles while encouraging a sense of ownership and accountability, which is crucial for building a quality culture (Xiaoxiang & Liping, 2011; Zgodavova et al., 2017).

The successful integration of Lean and a culture of quality depends on strong leadership that champions both initiatives. Leadership's role extends beyond just top-down directives; leaders must actively participate in Lean initiatives, model quality behaviors, and ensure that both Lean tools and quality are a strategic priority fully supported by the organization (Zgodavova et al., 2017; Salah, 2020; Rahman Alhejoj et al., 2023). Leaders must set a clear vision for quality and Lean, ensuring that both strategies are aligned with the organization's goals. Effective leadership in a Lean and quality-driven organization means fostering a culture of open communication, collaboration, and accountability, while also driving the necessary changes to embed Lean into the daily work routines of employees (Xiaoxiang & Liping, 2011).

CHALLENGES AND COUNTERMEASURES

Cultivating a culture of quality requires strategic action, leadership commitment, and employee engagement at all levels. While essential for long-term success, several challenges must be addressed to ensure meaningful progress.

- **Old habits and resistance to change:** Employees may resist quality initiatives due to ingrained habits, fear of job security threats, or increased workload (Zgodavova et al., 2017; Alkhawaldeh, 2024). Gradual implementation of changes allows employees to adapt over time (Závadský et al., 2020), while engaging them early fosters ownership (Sattler & Sonntag, 2018a; Xiaoxiang & Liping, 2011). Raising awareness of quality benefits, such as improved efficiency and job satisfaction, further supports adoption.
- **Misalignment:** A disconnect between leadership vision and employees' realities can cause quality initiatives to fail (Salah, 2020; Rahman Alhejoj et al., 2023). Leaders must model quality behaviors and align organizational strategies with quality goals (Salah, 2020; Zgodavova et al., 2017). Ensuring that quality is embedded in the organization's mission improves adoption (Xiaoxiang & Liping, 2011).
- **Lack of resources or leadership commitment:** Without adequate tools, training, and leadership support, sustaining a culture of quality becomes difficult (Herbas Torrico & Canaza Fernandez, 2021; Adebanjo & Kehoe, 1999; Albaroudi & Iqbal, 2024).

Organizations should invest in quality resources (Zhang & Yang, 2011), provide targeted training for employees (Jinhui Wu et al., 2011), and ensure sufficient time and budget allocation for quality initiatives (Zgodavova et al., 2017).

- Sustaining continuous improvement: Motivation to implement quality practices may decline over time (Salah, 2020; Jinhui Wu et al., 2011). Organizations should encourage lifelong learning (Xiaoxiang & Liping, 2011), create recognition systems for incremental improvements (Crosby, 1979; Yasamis et al., 2002), and establish regular performance reviews to maintain focus on quality priorities (Zgodavova et al., 2017).
- Cultural and structural barriers: Diverse workforces and multi-location organizations face challenges in creating a unified quality culture (Wolniak & Olkiewicz, 2019). Recognizing diverse perspectives on quality and adapting practices to fit local contexts without compromising core standards promotes inclusivity (Zgodavova et al., 2017). Encouraging cross-functional collaboration ensures alignment across departments (Sattler & Sonntag, 2018a).

Deming (1986) famously argued that quality is not a one-time effort but a continuous process. Although organizations and teams building their culture of quality might face challenges as described above, the following section highlights some of the expected benefits of this effort.

BENEFITS OF CULTIVATING A CULTURE OF QUALITY

By embedding quality as a cultural imperative (e.g., into the core values, behaviors, and processes), organizations can realize benefits that lead to sustainable growth:

- Improved employee engagement and satisfaction (Burke, 1995; Xiaoxiang & Liping, 2011; Zgodavova et al., 2017; Wolniak & Olkiewicz, 2019; Závadský et al., 2020; Alkhawaldeh, 2024).
- Increased customer loyalty and stronger reputation (Adebanjo & Kehoe, 1999; Zgodavova et al., 2017; Sattler & Sonntag, 2018; Závadský et al., 2020; Torrico & Fernandez, 2021).
- Enhanced operational efficiency and effectiveness (Womack & Jones, 1996; Liker, 2004; Jinhui Wu et al., 2011; Zhang & Yang, 2011; Alotaibi et al., 2013).
- Enhanced innovation and continuous improvement (Jinhui Wu et al., 2011; Zhang & Yang, 2011; Sattler & Sonntag, 2018a).
- Better risk management and compliance (Salah, 2020; Zgodavova et al., 2017; Albaroudi & Iqbal, 2024).
- Sustained competitive advantage (Závadský et al., 2020; Alkhawaldeh, 2024).
- Improved Financial Performance (Salah, 2020; Jinhui Wu et al., 2011).

TRENDS AND FUTURE DIRECTIONS

As the business landscape evolves, maintaining a strong culture of quality remains a key driver of organizational success. Emerging trends and future directions include:

- Integration of digital transformation: Tech can enhance real-time decision-making, automation, and process efficiency (Sattler & Sonntag, 2018a; Jinhui Wu et al., 2011).
- Increase focus on employee well-being: Organizations will invest in well-being initiatives, mental health resources, and inclusive environments (Gomez, 2023; Wolniak & Olkiewicz, 2019; Herbas Torrico & Canaza Fernandez, 2021).
- Emphasis on sustainability and ethics: Organizations are integrating sustainability by reducing waste, conserving resources, and ensuring ethical sourcing (Zgodavova et al., 2017; Závadský et al., 2020).

- Adaptability of quality practices: Quality strategies will align with local regulations, cultural norms, and customers (Xiaoxiang & Liping, 2011; Zgodavova et al., 2017).
- Collaborative approach: Agile methodologies and cross-functional teamwork will drive continuous improvement (Sattler & Sonntag, 2018a; Zhang & Yang, 2011).
- Remote work: Organizations must innovate to maintain quality standards, communication, and collaboration across dispersed teams (Gomez et al. 2024).

CONCLUSIONS

This paper explores the concept of culture of quality, emphasizing its multifaceted nature and critical role in organizational success. From a systematic literature review of 134 references, we have identified several key dimensions that define a culture of quality, including values, beliefs, attitudes, leadership, psychological safety, and behaviors. These dimensions interact to shape an organization's approach to quality and contribute to creating an environment where quality is prioritized not just as an operational goal but as a cultural imperative that permeates every level of an organization. We also examined the close relationship between a culture of quality and Lean, highlighting how tools like standardization and visual management contribute to continuous improvement and operational efficiency. The integration of Lean and quality reinforces behaviors that enhance customer satisfaction, minimize waste, and foster employee engagement. By integrating quality into the organization's core values and practices, businesses can create a sustainable competitive advantage and a work environment that continuously strives for improvement. However, cultivating a culture of quality is not without its challenges such as resistance to change and a lack of resources or commitment from leadership. Overcoming these challenges requires a strategic approach, including leadership commitment, employee empowerment, clear communication, and the integration of quality into every aspect.

Looking ahead, future research should explore new frameworks for integrating psychological safety, continuous learning, and cross-functional collaboration into quality-driven organizations, as these elements will be essential for adapting to future challenges and opportunities in an ever-evolving business landscape.

REFERENCES

- Adebanjo, D., & Kehoe, D. (1998). An evaluation of quality culture problems in UK manufacturing organizations. *International Journal of Quality Science*, 3(3), 275-285.
- Adebanjo, D., & Kehoe, D. (1999). An investigation of quality culture development in UK industry. *International Journal of Operations and Production Management*, 19(7), 633-649.
- Albaroudi, H. B., & Iqbal, S. (2024). Role of leadership styles in connecting quality culture and organizational performance. *TQM Journal*. doi.org/10.1108/TQM-02-2024-0072
- Alkhawaldeh, K. (2024). The impact of team building excellence on creating a culture of quality in construction. *Measuring Business Excellence*. doi.org/10.1108/MBE-05-2024-0062
- Alotaibi, M., et al. (2013). The mediating effect of quality culture on the relationship between total quality management practices and competitiveness. *I. J. Ops, Pro Mgt*, 33(4), 500-520.
- Alzate-Ibanez, A. M., Ramírez-Ríos, J. F., & Rodríguez-Andrade, C. (2023). Exploring Quality Culture in Proj. Mngmt. *DYNA*, 90(228), 123-131. doi.org/10.15446/dyna.v90n228.108554
- Bortolotti, T., Boscari, S., & Danese, P. (2015). Successful Lean Implementation: Organizational culture and soft lean practices. *Intl. J. of Production Econ.*, 160, 182-201.
- Bendermacher, G. W. G., oude Egbrink, M. G. A., Wolfhagen, H. A. P., Leppink, J., & Dolmans, D. H. J. M. (2017). Reinforcing pillars for quality culture development: a path analytic model. *Studies in Higher Ed.*, 44(4), 643–662. doi.org/10.1080/03075079.2017.1393060
- Burke, R. J. (1995). Culture's Consequences: organizational values, satisfaction and performance. *Empowerment in Organizations*, 3(2), 19-24.

- Cameron, K., & Sine, W. (1999). A framework for organizational quality culture. *Quality Management Journal*, 6(4), 7-25. doi.org/10.1080/10686967.1999.11919208
- Chu, J., & Hansen, M. (2024). An uprising: A strong culture of quality elevates employee satisfaction, ASQ survey reveals. *Quality Progress*, 57(11), 16-23.
- Crosby, P. B. (1979). *Quality is free: The art of making quality certain*. McGraw-Hill.
- Deming, W. E. (1986). *Out of the crisis*. MIT Press.
- Dougherty, J.M., Hughes, N., and Zack, Jr., J.G. (2012). "The Impact of Rework on Construction and Some Practical Remedies." Navigant Construction Forum, 21.
- Durana, P., Kral, P., Stehel, V., Lazaroiu, G., & Sroka, W. (2019). Quality culture of manufacturing enterprises: A possible way to adaptation to industry 4.0. *Soc. Sc.*, 8(4), 124.
- Dzimińska, M. (2023). Students as Co-Creators of a University's Quality Culture. In Bugaj, J. M., Budzanowska-Drzewiecka, M., & Mikolajczyk, B. (Eds.), *Build. Acad. Com.*. BRILL.
- Ehlers, U. D. (2009). Understanding quality culture. *Quality Assurance in Education*, 17(4), 343-363. doi.org/10.1108/09684880910992322
- El Safty, S. B. (2013). Critical success factors of quality culture development in automotive industry. *SAE Technical Papers*. doi.org/10.4271/2013-01-1330
- Emiliani, M. L. (2008). *Lean behaviors: Managing cultural change for sustainable supply chain excellence*. CRC Press.
- European University Association. (2002). Quality Culture in European Universities: A bottom-up approach. *Report on the three rounds of the Quality Culture project*, 2006(11).
- Feak, C. B., & Swales, J. M. (2009). Telling a Research Story: Writing a Literature Review. *English in Today's Research World 2*. Ann Arbor: University of Michigan Press.
- Forbes Insights, & ASQ (2014). Culture of quality: Accelerating growth and performance in the enterprise. ASQ.ORG.
- Goetsch, D. L., & Davis, S. (1994). *Quality Function Deployment*. Merrill
- Gomez, S. (2023). *Behavior-Based Quality System*. [Doctoral dissertation, University of California, Berkeley].
- Gomez, S., Ballard, G., Terni, S., Arroyo, P. & Bello, K. (2024). An Exploration of Psychological Safety and Team Behaviors in a Construction Global Team, *Proc. 32nd Ann. Conf. Int. Group for Lean Const.*, 1111-1122. doi.org/10.24928/2024/0130
- Gomez, S., Bishop, B., Ballard, G., Saenz, M., & Tommelein, I. (2019). An active caring approach through psychological safety in construction projects. *Proc. 27th Ann. Conf. Int. Group for Lean Const.*, Dublin, Ireland, 1037–1048. doi.org/10.24928/2019/0207
- Han, Y., Kumar, V., Tuyét Truong, N., & Ngoc Hoang, N. Y. (2019). The impact of Culture of Quality (CoQ) on the organizational performance. *Proc. 9th I. Conf. on Ops and SCM*.
- Harvey, L., & Stensaker, B. (2008). Quality culture: Understandings, Boundaries and Linkages. *European J. of Education*, 43(4), 427-442. doi.org/10.1111/j.1465-3435.2008.00367.x
- Herbas Torrico, B., & Canaza Fernandez, J. (2021). The determinants of a culture of quality for Bolivian firms. In *2nd South American Int. Conf. on Industrial Eng. and Operations Mngt*.
- Hildesheim, C., & Sonntag, K. (2019). The quality culture inventory: A comprehensive approach towards measuring quality culture in higher education. *Studies in Higher Education*, 45(4), 892-908. doi.org/10.1080/03075079.2019.1672639
- Imai, M. (1986). *Kaizen: The key to Japan's competitive success*. McGraw-Hill Education.
- Iqbal, S., Taib, C. A. B., & Razalli, M. R. (2023). The nexus between leadership styles and organizational performance: the mediating role of quality culture. *QA in Ed*, 31(4), 600-615.
- Jinhui Wu, S., Zhang, D. & Schroeder, R.G. (2011), "Customization of quality practices: the impact of quality culture", *I. J. of Quality & Reliability Mngmt*, 28(3), 263-279
- Juran, J. M., & Gryna, F. M. (1993). *Juran's quality control handbook* (5th ed.). McGraw-Hill.
- Karim, R. A., Latief, Y., & Zagloel, T. Y. (2022). Measuring and benchmarking the quality culture maturity of construction companies in Indonesia. *I. J. Eng, Tra*, 35(10), 2027-2039.

- Kumar, V.; Han, Y.; Tuyết Truong, N., Ngoc Hoang, N. Y., & Upadhyay, A. (2021). Understanding the interrelationship between culture of quality, employee, and organizational performance. *Operations and Supply Chain Management*, 14(1), 14-25.
- Liker, J. K. (2004). *The Toyota Way: 14 Management Principles from the World's Greatest Manufacturer*. McGraw-Hill.
- Liker, J. K., & Convis, G. L. (2012). *The Toyota Way to Lean Leadership: Achieving and Sustaining Excellence Through Leadership Development*. McGraw-Hill.
- Love, P.E., Mandal, P., and Li, H. (1999). Determining the Causal Structure of Rework Influences in Construction. *Const. Mngmt & Econ*, 17(4), 505–517.
- Malhi, R. S. (2013). Creating and sustaining: A quality culture. *Journal of Defense Management S*, 3, 1-4.
- Ohno, T. (1988). *Toyota production system: Beyond large-scale production*. Productivity Press.
- Patel, P., Baker, D., Burdick, R., Chen, C., Hill, J., Holland, M., Sawant, A. (2015). Quality Culture Survey Report. *PDA J. of Pharmaceutical Science and Technology*, 69(5), 631-642.
- Pratama, F. H., Andhika, R., & Latief, Y. (2021). The framework of quality culture maturity in Indonesian construction company to reduce the construction failure rate. *IOP Conf*, 794(1).
- Rahman Alhejoj, M. A., Almatlaqa, M. M., Alhejoj, H. A. M. (2023). The role of senior management in disseminating a culture of quality in higher education institutions. In: Hamdan, A., Harraf, A., Buallay, A., Arora, P., & Alsabatin, H. (Eds), *From Industry 4.0 to Industry 5.0. Studies in Systems, Decision and Control*. Springer.
- Rother, M., & Shook, J. (1999). *Learning to see: Value stream mapping to add value and eliminate muda*. Lean Enterprise Institute.
- Salah, B. (2020). Sustainable quality culture: Company-wide management systems and lean six sigma as enablers. *Lean Construction Journal*, 13(2), 44-56.
- Sattler, M., & Sonntag, P. (2018a). The role of leadership in creating a culture of quality. *TQM Journal*, 32(1), 24-38.
- Sattler, M., & Sonntag, P. (2018b). Quality cultures in higher education institutions - Development of the quality culture inventory. In Meusburger, P., Heffernan, M., & Suarsana, L. (eds.), *Geographies of the University*. Springer.
- Shingo, S. (1988). *Non-Stock Production: The Shingo System of Continuous Improvement*. CRC Press.
- Tezel, A.; Koskela, L., & Tzortzopoulos, P. (2009). The functions of visual management. *International Research Symposium*.
- Tomic, B., & Spasojevic Brkic, V. (2017). Under cultivation. *Quality Progress*, 50(7).
- Torrico, B. & Fernandez, J. (2021). The determinants of a culture of quality for Bolivian firms. *Proc. of the Intl Conf. on Industrial Engineering and Operations Management*, 960-970.
- Wolniak, R., & Olkiewicz, M. (2019). The relation between safety culture and quality culture in the workplace. *Safety Science*, 110, 37-46.
- Womack, J. P., & Jones, D. T. (1996). *Lean Thinking: Banish Waste and Create Wealth in Your Corporation*. Simon & Schuster.
- Xiaoxiang, Z., & Liping, R. (2011). Human resource competency model based on quality culture. *2011 International Conference on E-Business and E-Government (ICEE)*, 1-4.
- Yasamis, F., Arditi, D., & Mohammadi, J. (2002). Assessing contractor quality performance. *Construction Management and Economics*, 20(3), 211-223.
- Zgodavova, K., Hudec, O., & Palfy, P. (2017). Culture of quality: insight into foreign organisations in Slovakia. *TQM & Business Excellence*, 28(9–10), 1054–1075.
- Závadský, J., Malá, D., Benčíková, D., Sedliačiková, M., & Šatanová, A. (2020). Behavioral approach to quality: An empirical study in Slovak SMEs. *Cogent Business & Mngmt*, 7(1).
- Zhang, H., & Yang, D. (2011). Multilevel fuzzy comprehensive evaluation of corporate quality culture. *Quality Technology & Quantitative Management*, 8(4), 353-370.