

Beyond ISO: A Configurational Model of Quality Culture for Emerging Markets

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Abstract

Introduction:

In emerging markets, ISO standards do not always capture the cultural complexities of organizations. This study proposes an alternative view of quality culture as an institutional configuration that structures organizational behavior beyond compliance frameworks.

Objective:

To analyze how configurational forms of quality culture influence quality management and, through it, organizational performance, moving beyond traditional normative approaches.

Methods:

A theoretical model grounded in institutional theory and systems thinking was developed. Structural equation modeling (SEM) was applied to data collected from 2,500 employees across 16 manufacturing firms in a Latin American emerging market.

Results:

Findings show that quality culture has a significant impact on organizational performance, both directly and indirectly through quality management, validating its configurational role beyond ISO logic.

Conclusions:

The study contributes to organizational theory by framing quality culture as a systemic, symbolic, and operational logic that structures performance, particularly in institutionally diverse contexts like emerging markets.

Keywords:

Configurational model, Emerging markets, Organizational performance, Quality culture, Systems thinking.

1. Introduction

In today's volatile and highly competitive manufacturing landscape, traditional ISO-based quality frameworks often fall short in capturing the complexity and contextual richness of organizational cultures, especially in emerging markets. This study moves beyond ISO by proposing a configurational model of quality

culture (QC) that embraces both symbolic and operational dimensions, positioning culture as an institutional logic that guides organizational performance (OP) through context-sensitive mechanisms.

QC refers to the shared values, beliefs, and behaviors that shape how quality is perceived and

enacted across an organization. Unlike normative models that prescribe standardized practices, a configurational perspective recognizes QC as a dynamic, embedded system of meanings and routines reflected in leadership, language, rituals, and participatory structures (Zilber, 2020; Lounsbury & Boxenbaum, 2013). Quality management (QM), in this view, serves as the managerial translation of these cultural configurations into systematic practices aimed at monitoring, improving, and coordinating quality (Bendermacher et al., 2019).

Organizational performance (OP) is increasingly understood as a multidimensional construct that integrates financial results with qualitative attributes such as adaptability, stakeholder satisfaction, and learning capacity (Atif & Bilal, 2015). In emerging economies, these dimensions gain particular relevance due to institutional volatility and the need for flexible internal structures. Following General Systems Theory (Ackoff, 1989; Bertalanffy, 1968), this study adopts a systemic lens that emphasizes feedback loops, interdependence, and adaptive alignment as critical factors for sustainable performance (Machorro et al., 2016; Skyttner, 2022).

The objective of this research is to analyze how QC, conceptualized as a systemic and institutional configuration, influences OP both directly and indirectly through QM. A theoretical model is proposed in which QC and QM coevolve as complementary logics that shape strategic coherence, internal legitimacy, and coordinated action (Panuwatwanich & Nguyen, 2017). Whereas QC establishes the symbolic and normative basis for quality, QM operationalizes those values through tangible control systems, tools, and policies (Akpa et al., 2021).

Empirical data were collected from 2,500 employees across 16 manufacturing firms in a Latin American emerging market. Using structural equation modeling (SEM), the study demonstrates that QC significantly impacts OP, both directly and indirectly via QM. Performance was assessed using both financial metrics (e.g., profit margin, ROA, ROE) and qualitative indicators such as innovation, employee engagement, customer satisfaction, and organizational adaptability.

The results validate a configurational model in which QC functions not merely as a background variable but as a structuring logic that mediates how values are translated into effective practices. Organizations that institutionalize quality through integrative cultural mechanisms exhibit stronger

strategic alignment, innovation capacity, and resilience traits particularly valuable in unstable and dynamic environments.

This study contributes to organizational theory by shifting the discourse from standardized compliance toward a systemic and culturally embedded view of quality. It expands existing research by integrating Institutional Theory with General Systems Theory, offering a comprehensive understanding of how QC operates as a multi-level logic that structures both meaning and action in organizational contexts. By highlighting the symbolic and intersubjective nature of quality in emerging markets, the study provides a robust analytical lens to explore how organizations configure internal capabilities for sustained performance.

literature review

The study of quality culture in manufacturing organizations has traditionally been framed within normative models of continuous improvement, total quality management (TQM), and ISO-based compliance. These perspectives often portray quality culture as a static or technical attribute, to be measured and controlled. In contrast, this study repositions quality culture as a dynamic institutional logic that shapes, and is shaped by, organizational structures, discourses, and practices (Daoud, 2022).

From an institutional theory perspective, organizations are embedded within multiple, and often competing, logics that provide legitimacy and structure to action (Friedland & Alford, 1991; Thornton, Ocasio & Lounsbury, 2012). Within this framework, quality culture is not merely a behavioral norm or managerial preference, but a culturally and symbolically constructed logic that organizes meaning around performance, efficiency, control, and value (Benzaquen & Charles, 2022). It represents a cognitive and normative system that guides how organizations define excellence, assess outcomes, and structure internal processes (Lounsbury & Boxenbaum, 2013; Smets & Jarzabkowski, 2021).

Theoretical perspectives on organizational systems contribute to a deeper understanding of how quality culture functions as a mechanism of integration and adaptation. Drawing from General Systems Theory, organizations can be viewed as open systems characterized by complexity, interdependence, and feedback loops (Bertalanffy, 1968; Gharajedaghi, 2011). In this sense, culture operates as a connective tissue that maintains systemic coherence, facilitates communication

across subsystems, and enables the organization to respond to environmental variations while preserving internal stability. Recent scholarship has emphasized the relevance of systemic thinking in managing organizational dynamics and innovation processes (Barton & Haslett, 2020; Dimitrantzou et al. 2022).

Quality culture, when theorized within a systems framework, is more than a value orientation; it is a dynamic infrastructure of meaning that coordinates inputs, processes, and outputs across organizational boundaries (Alzoubi, In'airat, & Ahmed, 2022). It reinforces systemic alignment by linking strategic intentions with operational behaviors and shaping the interpretive schemas that guide decisionmaking. Moreover, the systemic perspective highlights how the failure to embed quality culture integrally can create fragmentation, dissonance, or entropy within the organizational system (Skyttner, 2022). that organizes meaning around performance, efficiency, control, and value. It represents a cognitive and normative system that guides how organizations define excellence, assess outcomes, and structure internal processes (Innola et al. 2023; Smets & Jarzabkowski 2021).

This study proposes the Matrix of Integral Quality Culture (MICQ) as a configurational model that identifies four archetypal forms of quality culture: IntegralActive, IntegralPassive, PartialActive, and PartialPassive. These configurations result from the intersection of two core dimensions: the internalization of quality principles (integral vs. partial) and the organizational engagement in quality practices (active vs. passive). Each configuration reflects distinct institutional logics that manifest in differentiated modes of structuring, sensemaking, and accountability (Javaid et al. 2021; Reay & Jones, 2016).

For instance, the IntegralActive configuration embodies a logic of participatory excellence, where quality is institutionalized across strategic and operational levels, and employees are coconstructors of quality outcomes. In contrast, the PartialPassive archetype reflects a ceremonial logic, where quality symbols are decoupled from actual practices, serving primarily as legitimizing rhetoric. These tensions echo the concept of decoupling in institutional theory (Meyer & Rowan, 1977) and illuminate how quality culture can function simultaneously as a source of coordination and a site of symbolic compliance.

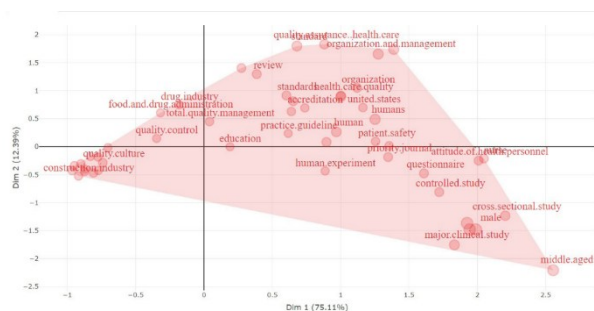
By theorizing quality culture through institutional logics, this model contributes to

organizational theory in three key ways. First, it reframes quality not as a best practice, but as a socially constructed and contested domain of organizational meaning. Second, it emphasizes the structuring role of culture in shaping how performance is defined, enacted, and measured. Third, it aligns with emerging critiques of performativity and impact measurement in contemporary organizations (Greenwood et al. 2025), proposing that quality culture itself can become an instrument of both improvement and ideological control (Carnevale & Hatak, 2020; Verschueren et al. 2023).

This reconceptualization opens avenues for further theoretical development, particularly in understanding how cultural configurations interact with other logics (e.g., market, professional, bureaucratic) and how they evolve over time in response to internal contradictions and external pressures. Ultimately, the MICQ serves as a theoretical and diagnostic lens to examine how organizations institutionalize quality, and with what consequences for their structures, practices, and identities.

The following figure illustrates a thematic mapping of cooccurrence terms derived from the bibliometric analysis, highlighting the conceptual landscape surrounding quality culture in organizational studies. The twodimensional graph (Dim 1: 75.11%, Dim 2: 12.39%) reveals a concentration of terms related to quality systems, management standards, and healthcare administration, emphasizing how academic discourse has predominantly focused on procedural compliance and institutional frameworks. Notably, terms such as "quality culture," "construction industry," and "total quality management" are located in the left quadrant, suggesting their peripheral treatment in contrast to dominant topics such as "patient safety," "clinical studies," and "healthcare personnel." This dispersion reflects a gap in research on how quality culture is operationalized in sectors beyond healthcare, particularly in emerging markets. This configuration underscores the need for alternative models, such as the one proposed in this study, that reconceptualize quality culture as a strategic and integrative construct rather than a compliance-driven practice.

Factor analysis of words



Conceptual Model

Quality Culture, Quality Management, and Organizational Performance

In the context of manufacturing organizations, quality culture (QC), understood as an institutional logic that integrates shared values, beliefs, and behaviors, influences how organizations perceive, implement, and legitimize quality-related practices (Lounsbury & Boxenbaum, 2013; Zilber, 2020). These practices do not manifest in isolation but are operationally translated through formal systems, policies, and processes characteristic of quality management (QM), which articulate cultural meanings into concrete actions aimed at compliance, continuous improvement, and operational efficiency (Bendermacher et al., 2019; Akpa et al., 2021).

The relationship between QC, QM, and organizational performance (OP) is neither linear nor unidimensional, but rather systemic. Drawing on General Systems Theory (Ackoff, 1989; Bertalanffy, 1968), performance is conceived as an emergent outcome resulting from multiple interactions among organizational subsystems that require coherence, feedback, and interdependence. Accordingly, QC directly influences OP by fostering work environments aligned with excellence, innovation, and adaptability. However, it also operates indirectly by being channeled and reinforced through QM practices that allow its formalization, monitoring, and evaluation.

Quality, therefore, should not be understood merely as a technical set of tools but as a symbolic and institutional construct that guides organizational behavior. Companies that succeed in aligning their management practices with a participatory, quality-oriented organizational culture demonstrate greater capacity to navigate volatile environments, meet stakeholder expectations, and generate sustained value. Consequently, QM is posited as a key mediating

variable that translates cultural logics into concrete organizational outcomes, both financial and non-financial.

Based on the theoretical model proposed and depicted in Figure, the hypotheses of this research are formulated to examine the structural relationships between quality culture, quality management, and organizational performance in manufacturing firms located in Norte de Santander. These hypotheses are grounded in the reviewed literature and the systemic and institutional approach adopted in the study, taking into account both direct and mediating effects among the variables analyzed. The hypotheses guiding the empirical analysis are as follows:

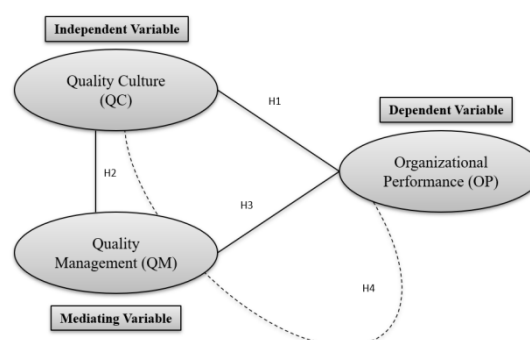
H1. Quality culture has an impact on the organizational performance of manufacturing firms in Norte de Santander.

H2. Quality culture has an impact on the quality management of manufacturing firms in Norte de Santander.

H3. Quality management has an impact on the organizational performance of manufacturing firms in Norte de Santander.

H4. Quality culture affects organizational performance through quality management.

Conceptual Model



quality culture (QC) that transcends normative frameworks such as ISO, particularly within the context of emerging markets. By integrating insights from Institutional Theory and General Systems Theory, the research seeks to analyze how QC, understood as a systemic institutional logic, influences organizational performance (OP) both directly and indirectly through quality management (QM). The study aims to demonstrate that QC is not merely a background cultural variable, but a structuring force that shapes managerial practices, strategic coherence, and internal legitimacy in dynamic and resource-constrained environments.

3. Method

This study adopted a descriptive and explanatory approach to analyze the interrelationships among quality culture (QC), quality management (QM), and organizational performance (OP). The design enabled a multidimensional characterization of these constructs through both their observable attributes and systemic interconnections. Data collection combined primary sources, survey responses from managers and employees of 16 manufacturing firms in Norte de Santander, Colombia, with secondary data obtained from public databases, corporate websites, and official reports from national regulatory entities. To ensure a broad temporal and contextual coverage, financial and market information from the previous five years was integrated within a crosssectional research frame.

The target population comprised 2,500 employees across the selected firms. A probabilistic sampling strategy yielded a representative sample of 204 valid responses, based on a finite population formula with appropriate confidence parameters. Primary data were gathered using Likerttype scales (five points) designed to capture perceptions on QC, QM, and OP. Secondary data included financial indicators such as return on assets (ROA), return on equity (ROE), profit margin, and market share, providing a complementary perspective on organizational outcomes.

The measurement instrument underwent a rigorous validation process. Content validity was evaluated by five international experts who reviewed item clarity, alignment, and theoretical consistency, resulting in an agreement index of 0.96. Reliability was confirmed through Cronbach's alpha ($\alpha = 0.94$), supporting the internal consistency of the constructs. Additional diagnostic tests, such as the KaiserMeyerOlkin (KMO) measure and Bartlett's test of sphericity, confirmed the adequacy of the data for multivariate analysis (Hair et al. 2021)

The analytical process followed a multiphase strategy. Initially, exploratory data analysis (EDA) was conducted using descriptive statistics to identify patterns and summarize distributions. Exploratory factor analysis (EFA) was applied to extract latent dimensions within the dataset. To account for the ordinal nature of the survey responses, polychoric correlation matrices were used, enhancing the accuracy of relational assessments.

Subsequently, structural equation modeling (SEM) was used to validate the

theoretical model. Confirmatory factor analysis (CFA) verified the alignment between observed indicators and latent variables. Path analysis quantified both direct and indirect effects between QC, QM, and OP, with QM as the mediating construct. Statistical inference was supported by both parametric techniques (e.g., maximum likelihood estimation) and nonparametric procedures (e.g., bootstrapping), ensuring robustness.

Model fit was assessed using comparative indices such as the Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA), which confirmed the suitability and coherence of the proposed structural model.

This comprehensive methodological design not only strengthens the empirical grounding of the findings but also provides a framework for future studies exploring how embedded cultural logics such as quality culture shape organizational dynamics and performance outcomes across varying contexts.

4. Resultados

Findings and Model Validation

The findings of this study highlight both the direct influence of quality culture (QC) on organizational performance (OP) and the critical mediating role of quality management (QM). This dual interaction confirms that QC operates as more than a normative standard—it functions as a structuring logic that drives strategic alignment and adaptability. These results support a configurational understanding of QC, emphasizing its symbolic, participatory, and operational dimensions in shaping sustainable performance, particularly in emerging market contexts where ISObased frameworks may be insufficient.

Company and Participant Profile

Based on 2023 financial data, firms were categorized by asset level and revenue size according to Colombian regulatory standards. The analysis revealed that 37.5% of firms exhibited strong performance in both dimensions, indicating solid financial standing. However, discrepancies emerged in several cases where firms were classified as large by assets but medium by revenue, suggesting underutilized capacity or structural inefficiencies. These dual classifications underscore the importance of adopting multidimensional criteria to assess organizational strengthan especially critical consideration in

markets where economic volatility and resource constraints are common.

Financial Performance

Between 2018 and 2022, companies demonstrated varied profitability. Some surpassed national benchmarks for profit margins and return on assets (ROA), while others reflected operational inefficiencies. Inconsistencies in return on equity (ROE) indicated uneven shareholder value creation. A concentrated market share among a few firms revealed limited sectoral competitiveness. Although manufacturing's contribution to GDP rose during this period, it remained modest relative to more industrialized economies. These findings emphasize the need for public policy strategies aimed at fostering technological development and industrial diversification (Rahman et al., 2020), especially to move beyond dependency on procedural standards like ISO.

Non-Financial Performance

Organizational performance was also assessed through non-financial indicators, including innovation and development, adaptability, customer satisfaction, and employee retention. These dimensions provide a comprehensive view of organizational health and are particularly relevant in markets where formal standards often fail to reflect local institutional realities (Atif & Bilal, 2015; Rahman et al., 2020). Demographic and employment data enriched the contextual interpretation of these indicators.

Most respondents were aged 26–35 (40.2%), followed by 36–45 (22.5%) and 18–25 (22.1%). Gender distribution included 60.3% male, 36.8% female, and 2.9% non-binary participants. Educational attainment showed that 40.7% held a professional degree, 31.4% a technological qualification, and 19.6% a postgraduate degree. Regarding tenure, 53.4% had 1–5 years of service, while 21.1% reported 6–10 years. The majority (64.2%) had fixed-term contracts, while 24% had indefinite contracts.

Correlation analysis yielded key insights. Age negatively correlated with education level (0.422), suggesting older employees had fewer formal qualifications. However, age positively correlated with tenure (0.290) and job stability (0.414), reflecting greater employment security for older workers. Notably, education negatively correlated with contract type (0.350), indicating that more educated employees were more likely to hold temporary or flexible contracts consistent with

labor mobility trends in emerging economies (Tian et al., 2023).

Hypothesis Testing

Structural equation modeling (SEM) confirmed the validity of all hypotheses. First, Hypothesis H1 was supported, showing a direct, statistically significant effect of quality culture on organizational performance ($\beta = 0.427$, $p < 0.001$). This supports the view of QC as an institutional logic that enhances innovation, resilience, and effectiveness when aligned with strategic goals (Zilber, 2020; Lounsbury & Boxenbaum, 2013).

Hypothesis H2 was also validated: QC significantly influences QM ($\beta = 0.618$, $p < 0.001$), indicating that internalized values and beliefs about quality manifest in structured systems of monitoring, control, and improvement. Hypothesis H3 was supported, confirming that QM significantly impacts OP ($\beta = 0.356$, $p < 0.01$), linking systematic quality practices with outcomes such as customer satisfaction and employee retention.

Finally, Hypothesis H4 was confirmed through mediation analysis. QC exerts an indirect effect on OP via QM (indirect effect = 0.220, $p < 0.01$), demonstrating QM's critical role as a bridge that translates cultural configurations into operational performance. Together, these findings reinforce the idea that QC is not simply a background condition but a dynamic system of meanings, practices, and feedback loops that shape how firms in emerging markets compete and adapt.

Exploratory Data Analysis (EDA)

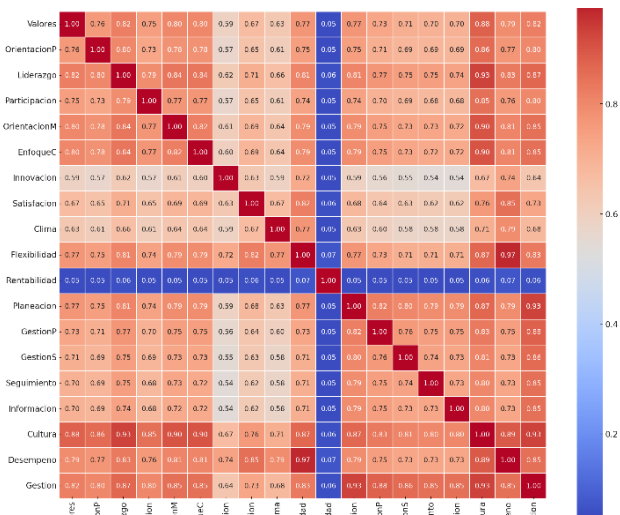
EDA revealed positive perceptions across QC, QM, and OP constructs, with strong reliability and validity. Cronbach's alpha exceeded 0.800 for all constructs, with "Work Environment and Employee Retention" (0.963) and "Participation and Cooperation" (0.964) indicating high internal consistency. Most constructs exhibited KMO values above 0.800, confirming factorability. Bartlett's test yielded statistically significant results across all constructs, validating internal structure.

The results offer robust evidence for the model's measurement validity and confirm that cultural configurations—in both symbolic and procedural forms—can be reliably assessed and linked to organizational outcomes. This further supports the relevance of a configurational model of quality culture, especially in contexts where ISO's standardized tools are insufficient for capturing the richness of organizational life.

To establish an appropriate measurement model, it is essential to analyze the relationships among elements within a construct and across different constructs using correlation coefficients such as Pearson, Spearman, or polychoric, depending on the nature of the data. In this study, due to the ordinal nature of the items measured on a five-point Likert scale, polychoric correlations were used. This coefficient—ideal for modeling underlying associations between ordinal variables—ranges from -1 (perfect negative correlation) to +1 (perfect positive correlation), with 0 indicating no correlation.

The figure presents the polychoric correlation matrix among the 19 latent variables grouped under the constructs of Quality Culture, Quality Management, and Organizational Performance. The analysis reveals a strong interdependence between Performance, Quality Culture, and Quality Management, with correlations ranging from 0.86 to 0.97. Most latent variables also exhibit strong internal associations, with coefficients generally above 0.70 and, in several cases, exceeding 0.90. This provides evidence of high internal consistency and supports the convergent validity of the constructs. An exception is Profitability, which, not being based on a Likert scale, shows very low correlations with the rest of the variables.

These results reinforce the theoretical and empirical coherence of the model, indicating that the selected indicators accurately represent the underlying dimensions and justify the structural configuration proposed in the study.



Structural Equation Modeling (SEM)

To empirically validate the configurational model proposed in Beyond ISO: A Configurational Model of Quality Culture for Emerging Markets,

confirmatory analysis was conducted using Structural Equation Modeling (SEM). This approach enabled an integrated examination of both direct and indirect relationships among observable and latent variables, facilitating the validation of a multidimensional, nonlinear theoretical framework. A secondorder model was applied to reflect the hierarchical structure of key constructs—Quality Culture (QC) and Quality Management (QM)—and to assess their joint impact on Organizational Performance (OP). This modeling strategy establishes a coherent linkage between abstract theoretical principles and empirical indicators (Hair et al., 2020), allowing for an institutional and systemic perspective on performance in emerging market contexts.

Two SEM models were estimated using the Diagonally Weighted Least Squares (DWLS) method, which is suitable for ordinal data. Parameter estimation was optimized using the NLMINB algorithm to enhance convergence and precision. Model development and validation were executed using the R packages LAVAAN and SEMINR, with model fit assessed through a combination of global, measurement, and structural indices.

To reinforce the robustness and generalizability of findings, Partial Least Squares Structural Equation Modeling (PLSSEM) was additionally implemented. This method is particularly well-suited for smaller sample sizes and complex latent constructs, which are common in organizational studies conducted in emerging economies. Complemented by bootstrapping techniques and the Interval Optimization Method (IVO), PLSSEM provided a distribution-free approach for estimating model parameters and improving fit. The dual use of SEM and PLSSEM, supported by rigorous computational strategies, enabled a comprehensive validation of the model's structure and measurement quality.

The final model exhibited excellent fit indices, indicating strong empirical support for the theoretical framework: RMSEA = 0.083, CFI = 0.999, TLI = 0.999, and SRMR = 0.048 (see Table). These metrics fall within acceptable or ideal thresholds, demonstrating that the configurational structure effectively captures the interactions among culture, management, and performance.

Global Assessment Measures

Indices	Model Value
ChiSquare (χ^2)	4646
Degrees of Freedom (DF)	1933
χ^2 /DF	2.403
Root Mean Square Error of	0.083

Approximation (RMSEA)	
Comparative Fit Index (CFI)	0.999
TuckerLewis Index (TLI)	0.999
Normed Fit Index (NFI)	0.999
Goodness of Fit Index (GFI)	0.999
Adjusted Goodness of Fit Index (AGFI)	0.999
Standardized Root Mean Square Residual (SRMR)	0.048

The measurement model was evaluated across several dimensions: indicator reliability, internal consistency, and convergent validity. All constructs met or exceeded standard thresholds, with factor loadings above 0.700 for SEM and 0.708 for PLSSSEM, ensuring that over 50% of indicator variance was captured by the latent constructs. Composite reliability (ρ_C) and Cronbach's alpha values ranged from 0.7 to 0.9, confirming strong internal consistency. Additionally, Average Variance Extracted (AVE) values exceeded 0.5, validating the convergent quality of the indicators and affirming the robustness of both first and secondorder constructs.

The structural model evaluation began with multicollinearity diagnostics. Variance Inflation Factor (VIF) scores mostly fell within acceptable limits, although a few constructs—such as “Leadership and Management Commitment” (VIF = 6.40) and “Quality Management and Culture” (VIF = 6.554)exceeded recommended thresholds, suggesting potential multicollinearity in specific dimensions. Nevertheless, these values did not compromise the model's overall validity.

Subsequent analysis of path coefficients included both direct and indirect effects among core variables: QC, QM, and OP. Relationships were tested using inferential statistics with exact pvalues, ensuring methodological rigor in line with current statistical reporting standards. The final results provide strong empirical grounding for the model's configurational logic, illustrating how culturalsymbolic mechanisms and managerial systems coconstruct performance outcomes in manufacturing firms beyond ISOstandardized approaches

According to the configurational model proposed in *Beyond ISO: A Configurational Model of Quality Culture for Emerging Markets*, the empirical results derived from structural equation modeling validate the strength, direction, and statistical significance of the hypothesized relationships among the core constructs. Quality Management (QM) exhibits a moderate yet statistically significant relationship with Organizational Performance (OP) ($\beta = 0.340$; $t =$

3.044; $p = .002$), indicating its essential but complementary role within the systemic logic of quality.

Quality Culture (QC), in contrast, demonstrates a more robust effect across the model. Specifically, it exerts a strong direct influence on Organizational Performance ($\beta = 0.556$; $t = 4.851$; $p < .001$) and an even stronger impact on Quality Management ($\beta = 0.921$; $t = 67.397$; $p < .001$). These results confirm the central thesis of this study: quality is not merely a technical function, but a deeply institutionalized cultural logic that shapes operational and strategic dimensions within firms operating in emerging markets.

Significance testing, based on bootstrapped standard errors and 95% confidence intervals, confirmed the robustness of all structural coefficients. Coefficients were deemed significant when zero was not included in the interval. This validation was conducted using 1,000 bootstrap iterations with a random seed of 123 to ensure the stability and replicability of estimates. The findings reveal that QC has a statistically significant and positive direct effect on OP at the 99% confidence level. Additionally, QC significantly predicts QM, which in turn enhances OPvalidating the mediating mechanism within the systemic model.

Notably, the indirect effect of QC on OP through QM was calculated at 0.313, obtained by multiplying the path coefficients (0.921 for QC $\rightarrow$ QM and 0.340 for QM $\rightarrow$ OP). This effect was also statistically significant, providing compelling empirical support for the dualpath influence of quality culture. It substantiates the argument that when QC is embedded as an institutional logic, it not only directs meaningmaking and strategic coherence but also enables effective managerial practices that translate into longterm performance gains.

The structural model reflects an integrated framework where symbolic, managerial, and performancerelated elements converge. This empirical configuration reinforces the article's core premise: beyond normative ISObased frameworks, Quality Culture operates as a dynamic, systemic force that legitimizes, structures, and amplifies organizational capabilities in volatile and resourceconstrained contexts.

Evaluation Model for the Integration of Quality Culture (MICQ)

This section introduces the Model for the Integration of Quality Culture (MICQ) as an original conceptual and diagnostic framework that transcends static classification. Developed from the empirical validation of structural relationships between quality culture, quality management, and organizational performance, the MICQ enables a dynamic interpretation of how cultural values are institutionalized and translated into performance outcomes.

Rooted in institutional logic theory, the

External Perspective (Stakeholder Participation)	Integral Quality Culture		Partial Quality Culture
	Internal Focus	External Compensation	Weak Quality Culture
Active Participation	Ideal Model: The organization systematically applies quality practices across all areas and levels. Stakeholders are highly involved, providing ideas, feedback, and strategic resources for continuous improvement. This strengthens organizational sustainability and innovation.	External Compensation: Quality is not fully integrated internally, but stakeholders play an active role in improvement. They contribute information, collaborate in processes, and promote external standards that help enhance the quality culture.	Weak Quality Culture: There is no systemic integration of quality within the organization, and stakeholders do not actively participate. This results in significant gaps in organizational sustainability and competitiveness.
Passive Participation	Internal Focus: The organization maintains strong internal quality standards, but stakeholder interaction is minimal. This may limit the ability to adapt to environmental changes and restrict the projection of the quality culture beyond the organization.		

model conceptualizes quality culture as a structuring force a set of shared beliefs, routines, and symbolic commitments that guide organizational behavior and shape strategic decisionmaking. Empirical findings confirmed that Quality Culture significantly influences Quality Management ($\beta = 0.921$, $R^2 = 0.847$), which in turn contributes positively to Organizational Performance ($\beta = 0.318$, $R^2 = 0.773$). These relationships highlight the importance of internal coherence and cultural maturity in achieving sustainable performance and adaptability.

What distinguishes the MICQ from existing models is its predictive potential. Beyond typological classification, it offers a strategic compass, suggesting possible evolutionary trajectories organizations may follow as they develop or reconfigure their quality culture. This is operationalized through two intersecting dimensions:

Internal Integration: The extent to which an organization embodies an Integral or Partial Quality Culture.

External Stakeholder Participation: The degree of Active or Passive involvement of customers, suppliers, regulators, and strategic partners.

These axes produce four dynamic organizational archetypes (see Table: Abstract Classification of Quality Culture), each of which represents both a current state and a directional path toward higher cultural maturity and competitive capacity:

Ideal Model (Integral + Active): Organizations in this quadrant exhibit highquality coherence and collaborative stakeholder networks. They are

positioned for innovation, legitimacy, and continuous improvementand can serve as benchmarks or aspirational targets for others.

External Compensation (Partial + Active): External pressures and collaborations drive internal improvements. These organizations may evolve toward the Ideal Model by institutionalizing external practices.

Internal Focus (Integral + Passive): While internally strong, these firms risk stagnation due to limited external responsiveness. With strategic stakeholder engagement, they may transition toward active ecosystems.

Abstract Classification of Quality Culture Based on Internal and External Perspectives.

Weak Quality Culture (Partial + Passive): Marked by cultural fragility and low stakeholder alignment, this archetype reflects strategic vulnerability but also highlights areas for intervention and growth.

In this sense, the MICQ offers more than a static diagnosis; it enables scenario modeling, allowing decisionmakers to anticipate organizational trajectories, design targeted interventions, and align cultural transformation with longterm goals.

The practical applications of the MICQ include:

Cultural audits, assessing alignment and readiness for transformation.

Strategic planning, identifying leverage points for stakeholder engagement or internal cohesion.

Trajectory mapping, outlining progressive pathways from low to high maturity configurations.

Organizational development, supporting decisions on training, leadership, and process redesign based on cultural positioning.

In line with the article's thesis, the MICQ reconceptualizes quality not as compliance, but as a configurational asset—a system of meaning and coordination capable of evolving across organizational timeframes. This dynamic and integrative approach positions the MICQ as a novel contribution to quality theory in emerging markets.

5. Discussion

The findings of this study provide robust empirical validation of the hypothesized relationships among Quality Culture (QC), Quality Management (QM), and Organizational Performance (OP), revealing a deeper and more nuanced logic than traditional quality assurance frameworks allow. In particular, the structural model confirms that QC exerts a strong and statistically significant direct effect on OP ($\beta = 0.556$; $t = 4.851$), positioning it as a foundational driver of performance beyond what is achievable through managerial systems or certification-based compliance alone (Kartini et al., 2023; Love et al., 2023).

This insight speaks directly to the central premise of this article: moving beyond ISO. While ISO 9001 and similar standards have standardized quality systems across industries, their focus remains largely procedural anchored in documentation, auditability, and prescriptive conformity (Verschuere et al., 2023). In contrast, the present study reveals that performance in emerging markets is better explained through the configurational interaction between deeply embedded quality values and stakeholder

ecosystems, rather than by the adoption of rigid quality systems alone.

From a theoretical perspective, the model challenges the underlying assumptions of ISO-based quality logic, offering instead a configurational approach grounded in institutional theory. Here, QC is not merely a supporting element but the cultural infrastructure that shapes strategic orientation, innovation capacity, and resilience (Aquilani et al., 2017; Iqbal et al., 2023). This paradigm shift reflects an emerging view of quality as an evolving institutional logic embedded in leadership behaviors, symbolic practices, and organizational routines (Muhammed et al., 2020; Omran et al., 2021) especially relevant for the volatile and resource-constrained conditions of emerging markets.

To operationalize this theoretical shift, the study introduces the Model for the Integration of Quality Culture (MICQ). Unlike conventional models focused on process control, MICQ adopts a dual-perspective typology that captures the level of internal cultural integration and external stakeholder participation. In doing so, it aligns with the article's goal of proposing a configurational model: one that does not assume linear or universal progress, but instead recognizes that organizations may adopt multiple, interacting paths to quality maturity.

This framework enables both classification and strategic trajectory forecasting, marking its originality. Organizations situated in the "Weak Quality Culture" quadrant, for instance, can trace a path of cultural transformation toward the "Ideal Model" by strengthening internal alignment and cultivating active partnerships. In this way, MICQ functions as a predictive map, not merely a snapshot, supporting evidence-based planning and adaptive quality governance especially valuable in contexts with high institutional volatility, such as Latin America and other emerging regions (Mikalef & Krogstie, 2020).

Moreover, the emphasis on stakeholder participation introduces an open systems logic to quality management, aligning the MICQ with General Systems Theory (von Bertalanffy, 1968) and with holistic excellence frameworks such as EFQM (2020). However, MICQ advances this tradition by focusing specifically on the institutional maturity of quality culture as the central axis of configuration, integrating cultural,

strategic, and relational dimensions often overlooked in legacy models.

Practically, the MICQ provides a diagnostic and decisionmaking tool to guide interventions at the cultural level. It shifts the discourse from compliancebased management toward a cultureled paradigm, where quality is understood as a living system of meaning, participation, and learning (Fundin et al., 2021; Koprivica et al., 2019). This reorientation is particularly relevant for emerging markets, where certification alone is often insufficient to guarantee adaptability, legitimacy, or performance.

In sum, this study reconceptualizes quality as a dynamic, configurational, and contextualized cultural infrastructure. By going beyond ISO, it offers a model that is not only empirically validated but also theoretically generative and practically actionable. The MICQ stands as a novel contribution to organizational studiesequipping firms, especially in emerging markets, with a flexible and predictive lens for embedding and evolving quality as a strategic asset.

Finally, it is recommended to deepen the differentiation between the Integrative Model of Quality Culture (MICQ) and traditional approaches such as ISO 9001, Total Quality Management (TQM), and Quality 4.0, emphasizing the model's predictive value. While conventional frameworks have significantly contributed to quality assurance and continuous improvement, the MICQ stands out by integrating cultural, structural, and strategic dimensions through an institutional logic lens. This approach moves beyond compliance and technical guidelines, offering a configurational understanding of how quality culture and quality management interact to shape organizational performance. Its demonstrated explanatory and predictive power makes the MICQ a valuable tool for strategic decision-making, particularly in dynamic and emerging contexts where adaptability and systemic coherence are crucial for long-term sustainability.

Conclusions

This study provides robust empirical and theoretical evidence that Quality Culture (QC) is not merely an auxiliary element of quality management but constitutes a foundational

institutional logic that configures and propels organizational performance. The validated structural model confirms that QC exerts both direct and indirect effects on Organizational Performance (OP), with Quality Management (QM) acting as a critical mediating mechanism. These findings support a systemic and interdependent view of cultural and managerial components in manufacturing firms, particularly within emerging market contexts.

One of the key contributions of this research lies in its redefinition of the quality paradigm. Moving beyond traditional complianceoriented frameworks such as ISO 9001, which focus on procedural standardization—this study positions quality culture as a dynamic and integrative construct grounded in shared values, symbolic leadership, and participatory practices. The empirical evidence demonstrates that organizations with an embedded and coherent quality culture are better equipped to innovate, adapt, and legitimize their actions within complex institutional environments.

In response to the need for a more strategic and contextsensitive model, this research introduces the Model for the Integration of Quality Culture (MICQ). MICQ not only offers a diagnostic classification based on cultural integration and stakeholder participation but also enables the prediction of strategic trajectories. By identifying how internal cultural maturity and external stakeholder engagement intersect, MICQ guides decisionmakers in designing tailored interventions that align quality initiatives with organizational strategy and environmental complexity. This makes the model especially relevant for organizations transitioning toward Quality 4.0 paradigms, where agility, innovation, and stakeholder co-creation are critical success factors.

Methodologically, the study contributes to the advancement of structural equation modeling by integrating SEM and PLSSEM approaches, supported by robust fit indices and diagnostic procedures. This methodological rigor enhances the validity and generalizability of the proposed model, although certain limitations should be acknowledged. The sample was restricted to manufacturing firms in Norte de Santander, Colombia, which may limit applicability to other sectors or regions. Future research should replicate and adapt the model across diverse industries, institutional settings, and cultural environments to test its broader relevance.

Ultimately, this study reframes quality culture as a dynamic, assessable, and actionable institutional logic infrastructure of meaning and coordination that underlies sustainable organizational performance. It encourages scholars and practitioners to move beyond ISO and embrace a configurational approach that accounts for the symbolic and systemic dimensions of quality. In doing so, it opens new theoretical and practical pathways for achieving competitive advantage through cultural coherence and stakeholder alignment.

Future Research Directions

Future studies should focus on longitudinal analyses of how quality culture evolves over time, particularly in response to digital transformation, institutional transitions, and Quality 4.0 adoption. Additional research could explore the integration of artificial intelligence and big data analytics in quality-related decision-making processes, and their implications for sustainability and strategic alignment. Comparative research across diverse sociocultural and institutional contexts would also help identify patterns and divergences in quality culture development, offering new insights into global and local dynamics of organizational excellence.

References

- Ackoff, R. (1989). *Redesigning the future: A systems approach to societal problems*. Wiley.
- Akpa, V., Asikhia, O., & Nneji, E. N. (2021). Organizational culture and organizational performance: A review of literature. *International Journal of Advanced Engineering and Management*, 3(1), 361–372. <https://doi.org/10.35629/5252-0301361372>
- Alzoubi, H., In'airat, M., & Gouhe, A. (2022). Investigating the impact of total quality management practices and Six Sigma processes to enhance the quality and reduce the cost of quality: The case of Dubai. *International Journal of Business Excellence*, 27(1), 94. <https://doi.org/10.1504/IJBE.2022.119658>
- Aquilani, B., Silvestri, C., Ruggieri, A., & Gatti, C. (2017). A systematic literature review on total quality management critical success factors and the identification of new avenues of research. *The TQM Journal*, 29(1), 184–213. <https://doi.org/10.1108/TQM-05-2016-0043>
- Atif, M., & Adil, B. (2015). Impact of knowledge sharing on organization performance: The mediating role of innovation capability [Tesis de maestría, University of Melbourne]. *ResearchGate*. <https://doi.org/10.13140/RG.2.1.2301.6564>
- Barbosa, L., de Oliveira, O., Machado, M., & Morais, A. (2022). Lessons learned from quality management system ISO 9001:2015 certification: Practices and barrier identification from Brazilian industrial companies. *Benchmarking: An International Journal*, 29(8), 2593–2614. <https://doi.org/10.1108/BIJ-06-2020-0302>
- Baron, R., & Kenny, D. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182. <https://doi.org/10.1037/0022-3514.51.6.1173>
- Bendermacher, G., Oude Egbrink, M., Wolfhagen, H. A. P., Leppink, J., & Dolmans, D. H. J. M. (2019). Reinforcing pillars for quality culture development: A path analytic model. *Studies in Higher Education*, 44(4). <https://doi.org/10.1080/03075079.2017.1389872>
- Benzaquen, J., & Charles, V. (2022). A stratified bootstrapping approach to assessing the success of TQM implementation in Peruvian companies. *Total Quality Management & Business Excellence*, 33(1–2), 178–201. <https://doi.org/10.1080/14783363.2020.177798>
- Bertalanffy, L. von. (1968). *General system theory: Foundations, development, applications*. George Braziller.
- Bousdekis, A., Lepenioti, K., Apostolou, D., & Mentzas, G. (2023). Data analytics in Quality 4.0: Literature review and future research directions. *International Journal of Computer Integrated Manufacturing*, 36(5), 678–701. <https://doi.org/10.1080/0951192X.2022.2128219>
- Carnevale, J., & Hatak, I. (2020). Employee adjustment and well-being in the era of COVID-19: Implications for human resource management. *Journal of Business Research*, 116, 183–187. <https://doi.org/10.1016/j.jbusres.2020.05.037>

- Chiarini, A. (2020). Industry 4.0, quality management and TQM world: A systematic literature review and a proposed agenda for further research. *The TQM Journal*, 32(4), 603–616. <https://doi.org/10.1108/TQM-04-2020-0082>
- Daoud Ben Arab, S. (2022). Quality management practices and innovation: The moderating effect of ISO 9001 certification. *Journal of the Knowledge Economy*, 13(3), 2177–2202. <https://doi.org/10.1007/s13132-021-00805-x>
- Deming, W. (1982). *Quality, productivity, and competitive position*. Massachusetts Institute of Technology, Center for Advanced Engineering Study.
- Dimitrantzou, C., Psomas, E., Bouranta, N., & Kafetzopoulos, D. (2022). The role of organizational culture in total quality management adoption and cost of quality. *Total Quality Management & Business Excellence*, 33(15–16), 1718–1736. <https://doi.org/10.1080/14783363.2021.1997143>
- 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. *Social Sciences*, 8(4). <https://doi.org/10.3390/socsci8040124>
- Friedland, R., & Alford, R. (1991). Bringing society back in: Symbols, practices, and institutional contradictions. In W. W. Powell & P. J. DiMaggio (Eds.), *The new institutionalism in organizational analysis* (pp. 232–263). University of Chicago Press.
- Fundin, A., Lilja, J., Lagrosen, Y., & Bergquist, B. (2020). Quality 2030: Quality management for the future. *Total Quality Management & Business Excellence*, 29(9–10), 1–17. <https://doi.org/10.1080/14783363.2020.1863778>
- Gharajedaghi, J. (2011). *Systems thinking: Managing chaos and complexity: A platform for designing business architecture* (3rd ed.). Elsevier.
- Greenwood, R., Raynard, M., Kodeih, F., Micelotta, E. R., & Lounsbury, M. (2011). Institutional complexity and organizational responses. *Academy of Management Annals*, 5(1), 317–371. <https://doi.org/10.5465/19416520.2011.590299>
- Gunasekaran, A., Subramanian, N., & Ngai, W. (2019). Quality management in the 21st century enterprises: Research pathway towards Industry 4.0. *International Journal of Production Economics*, 207, 125–129. <https://doi.org/10.1016/j.ijpe.2018.09.005>
- Hair, J., Hult, T., Ringle, C., Sarstedt, M., Castillo, J., Cepeda, G., & Roldán, J. (2021). *Manual de Partial Least Squares Structural Equation Modeling (PLS-SEM)*. OmniaScience.
- Innola, N., Chorny, R., Chorna, N., & Malik, M. (2023). Ensuring of financial stability of the enterprise by financial management tools. In *Proceedings of International Conference on Industrial Engineering and Operations Management* (pp. 783–792). https://doi.org/10.1007/978-3-031-08084-5_56
- Iqbal, S., Taib, C., & Razalli, M. (2023). The nexus between leadership styles and organizational performance: The mediating role of quality culture. *Quality Assurance in Education*, 31(4). <https://doi.org/10.1108/QAE-03-2023-0038>
- Javaid, M., Haleem, A., Singh, R., & Suman, R. (2021). Significance of Quality 4.0 towards comprehensive enhancement in manufacturing sector. *Sensors International*, 2, 100109. <https://doi.org/10.1016/j.sintl.2021.100109>
- Kartini, K., Samdin, S., Ramli, R., Sinarwati, S., & Zaludin, Z. (2023). The effect of quality culture on service quality; infrastructure quality as a mediation variable. *International Journal of Applied Economics, Finance and Accounting*, 17(2). <https://doi.org/10.33094/ijaefa.v17i2.1121>
- Koprivica, S. M., Maric, A., Ristic, O., & Arsovski, S. (2019). Social oriented quality: From Quality 4.0 towards Quality 5.0. *Proceedings of Engineering Sciences*, 1(2), 397–400. <https://doi.org/10.24874/PES01.02.038>
- Lounsbury, M., & Boxenbaum, E. (2013). Institutional logics in action. In M. Lounsbury & E. Boxenbaum (Eds.), *Institutional logics in action, Part A (Research in the Sociology of Organizations, Vol. 39 Part A, pp. 3–22)*. Emerald Group Publishing Limited. [https://doi.org/10.1108/S0733-558X\(2013\)0039AB004](https://doi.org/10.1108/S0733-558X(2013)0039AB004)

- Love, P., Matthews, J., Ika, L., & Teo, P. (2023). From Quality-I to Quality-II: Cultivating an error culture to support lean thinking and rework mitigation in infrastructure projects. *Production Planning & Control*, 34(9), 812–829. <https://doi.org/10.1080/09537287.2021.1964882>
- Machorro, F., Mercado, P., Cernas, D., & Romero, M. (2016). Influence of relational capital on the organizational performance of institutions of higher technological education. *Innovar: Revista de Ciencias Administrativas y Sociales*, 26(60), 35–50. <https://doi.org/10.15446/innovar.v26n6.0.55531>
- Meyer, J., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology*, 83(2), 340–363. <https://doi.org/10.1086/226550>
- Mikalef, P., & Krogstie, J. (2020). Examining the interplay between big data analytics and contextual factors in driving process innovation capabilities. *European Journal of Information Systems*, 29(3), 260–287. <https://doi.org/10.1080/0960085X.2020.1740618>
- Muhammed, S., & Zaim, H. (2020). Peer knowledge sharing and organizational performance: The role of leadership support and knowledge management success. *Journal of Knowledge Management*, 24(10), 2455–2489. <https://doi.org/10.1108/JKM-03-2020-0227>
- Omran, M., Khallaf, A., Gleason, K., & Tahat, Y. (2021). Non-financial performance measures disclosure, quality strategy, and organizational financial performance: A mediating model. *Total Quality Management & Business Excellence*, 32(5–6), 652–675. <https://doi.org/10.1080/14783363.2019.1625708>
- Panuwatwanich, K., & Nguyen, T. (2017). Influence of organisational culture on total quality management implementation and firm performance: Evidence from the Vietnamese construction industry. *Management and Production Engineering Review*, 8. <https://doi.org/10.1515/mper-2017-0001>
- Rahman, M., Surajit, B., Gupta, S., & Sivarajah, U. (2023). Technological preparedness of B2B firms and AI-enabled customer relationship management capability for enhancing social sustainability performance. *Journal of Business Research*, 156, 113525. <https://doi.org/10.1016/j.jbusres.2022.113525>
- Rangan, S. (Ed.). (2018). *Capitalism beyond mutuality? Perspectives integrating philosophy and social science*. Oxford University Press. <https://doi.org/10.1093/oso/9780198825067.001.0001>
- Reay, T., & Jones, C. (2016). Qualitatively capturing institutional logics. *Strategic Organization*, 14(4), 441–454. <https://doi.org/10.1177/1476127015589981>
- Senge, P. (1998). *The fifth discipline: The art and practice of the learning organization*. Doubleday/Currency.
- Skyttner, L. (2022). *General systems theory: Problems, perspectives, practice* (3rd ed.). World Scientific. <https://doi.org/10.1142/5871>
- Smets, M., & Jarzabkowski, P. (2021). Institutions in a world of extreme volatility. *Academy of Management Review*, 46(4), 794–813. https://www.researchgate.net/publication/315714748_Towards_a_Practice-Driven_Institutionalism
- Thornton, P., Ocasio, W., & Lounsbury, M. (2012). *The institutional logics perspective: A new approach to culture, structure and process*. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199601936.001.0001>
- Tian, M., Chen, Y., Tian, G., Huang, W., & Hu, C. (2023). The role of digital transformation practices in the operations improvement in manufacturing firms: A practice-based view. *International Journal of Production Economics*, 262, 108929. <https://doi.org/10.1016/j.ijpe.2023.108929>
- Verschueren, N., Van Dessel, J., Verslyppe, A., Schoensetters, Y., & Baelmans, M. (2023). A maturity matrix model to strengthen the quality cultures in higher education. *Education Sciences*, 13(2). <https://doi.org/10.3390/educsci13020123>
- Zilber, T. (2020). The social construction of meaning and sensemaking of institutional logics. *Academy of Management Annals*, 14(2), 462–495. <https://doi.org/10.1177/00018392231217712>