

Enhancing Organizational Competitiveness In Emerging Economies: The Role Of Quality Management Practices And Continuous Improvement In Nigeria's Manufacturing Industry

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Abstract. This study investigates the influence of continuous improvement culture (CIC) and Quality Management System (QMS) implementation on organizational performance, with a focus on small-scale bakeries in Ilorin, Nigeria. The moderating roles of organizational culture and dynamic capabilities were examined to understand how contextual and adaptive factors enhance the effectiveness of quality management practices. Data was collected from managers and operational staff across 10 bakeries and analyzed using hierarchical regression and interaction models. Findings suggest that both CIC and QMS significantly improve operational efficiency, product quality, and customer satisfaction, while organizational culture amplifies the impact of CIC and dynamic capabilities strengthen the benefits of QMS implementation. The study highlights the economic and strategic importance of integrating continuous improvement and formal quality systems, particularly in resource-constrained and rapidly changing manufacturing environments. Implications for policy and practice in small-scale manufacturing are discussed, with recommendations for enhancing operational resilience and competitiveness.

Keywords: Continuous Improvement Culture; Quality Management System; Organizational Performance; Organizational Culture; Dynamic Capabilities; Small-Scale Manufacturing

I. INTRODUCTION

Nigeria's manufacturing sector remains a key contributor to economic development, employment generation, and industrial transformation in emerging economies. Despite its strategic importance, many manufacturing firms continue to face challenges related to operational inefficiencies, inconsistent product quality, and limited competitiveness in both domestic and international markets. These challenges highlight the growing need for organizations to adopt structured management practices capable of improving productivity, operational efficiency, and overall organizational performance [18], [19].

Quality Management Systems (QMS) have increasingly been recognized as a strategic management approach that enables organizations to standardize processes, improve product quality, and enhance operational performance. QMS provides a systematic framework that integrates organizational processes, policies, and continuous monitoring mechanisms aimed at ensuring consistent quality improvement and customer satisfaction. Empirical evidence indicates that effective implementation of quality management practices significantly improves organizational performance, operational efficiency, and long-term competitiveness [15], [24], [4].

In addition to formal QMS implementation, the

culture of continuous improvement has become an essential component of organizational competitiveness in modern manufacturing environments. Continuous improvement encourages organizations to constantly refine operational processes, reduce inefficiencies, and promote employee involvement in quality enhancement initiatives. When embedded within organizational culture, continuous improvement fosters learning, innovation, and adaptability, which are critical for firms operating in competitive and dynamic markets [6], [7].

Recent studies have also highlighted the importance of organizational capabilities, including quality management practices, employee competence, and internal process integration, in achieving sustainable competitive advantage. From the perspective of the Resource-Based View (RBV), firms that effectively utilize internal resources and capabilities can develop unique competencies that enhance performance and market competitiveness [5]. Within this context, quality management practices and continuous improvement initiatives represent valuable organizational capabilities that contribute to long-term strategic success [18], [22].

Furthermore, contemporary management research emphasizes the relationship between organizational practices, service quality, and performance outcomes. For instance, Kumoro and Krisprimandoyo demonstrate that organizational performance outcomes are strongly influenced by internal management practices that

enhance service quality and customer satisfaction [16]. Similarly, research on brand equity and service strategies highlights the role of organizational capabilities such as brand quality perception and loyalty-driven strategies in strengthening organizational performance and competitive positioning [23].

Despite growing scholarly interest in quality management practices, empirical studies focusing specifically on the integration of QMS and continuous improvement within the Nigerian manufacturing sector remain limited. Most existing studies have examined quality management practices in developed economies or other industrial contexts, leaving an important research gap regarding how these practices influence organizational performance within emerging manufacturing environments [19], [22].

This study therefore aims to examine the influence of quality management practices and continuous improvement culture on organizational performance within Nigeria's manufacturing industry. Specifically, the study seeks to: (1) Evaluate the effect of continuous improvement culture on organizational performance (H1). (2) Examine the impact of Quality Management System implementation on organizational performance (H2). (3) Investigate the moderating role of organizational culture on the relationship between continuous improvement culture and organizational performance (H3). (4) Assess the moderating effect of dynamic capabilities on the relationship between QMS implementation and organizational performance (H4).

The scientific contribution (novelty) of this study lies in its integrated examination of both continuous improvement culture and formal QMS implementation within the context of an emerging economy manufacturing sector. While previous studies have often examined these factors independently, this research provides empirical evidence on their combined influence on organizational competitiveness in Nigerian manufacturing firms. In addition, the study contributes to the application of the Resource-Based View by demonstrating how internal quality-oriented capabilities can serve as strategic resources that enhance organizational performance and sustainable competitive advantage in emerging economies [5], [15].

II. LITERATURE REVIEW

Quality Management Systems (QMS) are widely recognized as structured frameworks that align organizational processes, policies, and procedures toward achieving efficiency, quality, and performance outcomes. Contemporary research distinguishes "hard" QMS practices (e.g., standardization, process control, and auditing) from "soft" practices (e.g., leadership commitment, employee empowerment, and culture) and demonstrates their complementary effects on organizational performance [24], [4]. In emerging economies, including Nigeria, these systems are particularly valuable in environments constrained by infrastructure, regulatory limitations, and volatile

markets [22]. Empirical studies show that QMS not only improves operational reliability but also promotes innovation and adaptability when integrated with dynamic organizational routines [19], [20].

Continuous Improvement (CI) culture is a strategic mechanism within QMS that emphasizes incremental enhancements, problem-solving, and employee involvement to optimize efficiency and quality outcomes. Practices such as Kaizen and Lean initiatives have been empirically shown to reduce waste, enhance operational efficiency, and improve product quality in manufacturing settings [9], [11], [3]. In Nigeria, empirical evidence highlights that firms implementing CI practices experience measurable improvements in performance metrics, although these gains are contingent upon leadership support and employee engagement [17], [21].

The implementation of QMS, including Total Quality Management (TQM) and ISO 9001 standards, is strongly linked with operational and business performance improvements. Empirical studies reveal that Nigerian manufacturing firms adopting QMS demonstrate superior defect reduction, product quality, and customer satisfaction outcomes [3], [17]. QMS frameworks establish structured process routines, risk-based thinking, and standardized practices, which enhance both immediate operational performance and longer-term innovation capacity [18], [24]. Additionally, top management support, employee engagement, and commitment of resources are empirically recognized as critical determinants of QMS effectiveness [21].

Empirical evidence suggests that the effectiveness of CI and QMS is contextually contingent upon organizational culture. A culture that promotes learning, collaboration, and employee participation amplifies the benefits of continuous improvement and quality management practices [6], [21]. In Nigeria, where organizational cultures vary across firms, studies demonstrate that supportive cultures strengthen the adoption of CI initiatives, enhance employee engagement, and facilitate knowledge sharing, thereby improving performance outcomes [7], [1].

Dynamic capabilities—the firm's ability to sense opportunities, seize resources, and transform processes—play a critical mediating role in translating QMS into tangible performance outcomes. Empirical studies indicate that firms with well-developed dynamic capabilities are better able to leverage QMS practices to improve innovation, operational efficiency, and customer satisfaction [22], [20]. In Nigeria, the evidence shows that manufacturing firms with adaptive capability bundles experience amplified performance improvements from QMS adoption [19].

The synergistic effects of CI culture, QMS implementation, organizational culture, and dynamic capabilities underscore the complex interplay of internal organizational resources in emerging-economy manufacturing contexts. Integrated evidence indicates that CI and QMS practices independently enhance

operational and business performance, yet their impact is maximized when coupled with enabling organizational culture and dynamic capabilities [4], [22]. Studies also show that firms implementing CI and QMS simultaneously can achieve both cost reduction and innovation gains, supporting the resource-based view that internal capabilities are central to sustained competitive advantage [5], [15].

Emerging-economy studies further highlight contextual contingencies such as national culture, regulatory environment, and market turbulence that shape the efficacy of quality management initiatives [13], [14]. Evidence indicates that supportive leadership and participatory culture enhance performance effects [6]. Similarly, dynamic capabilities allow firms to adapt QMS practices to volatile input and demand conditions, facilitating both operational stability and innovation responsiveness [20].

Based on the reviewed literature and empirical evidence, the study proposes four hypotheses to guide analysis: H1: Continuous improvement culture positively affects organizational performance; H2: QMS implementation positively affects organizational performance; H3: Organizational culture positively moderates the relationship between continuous improvement culture and organizational performance; H4: Dynamic capabilities positively moderate the relationship between QMS implementation and organizational performance. Collectively, these hypotheses integrate well-established quality management and capability-based insights supported by both international and Nigerian manufacturing research [21], [4], [6].

III. METHODOLOGY

The study adopts a quantitative cross-sectional survey design to empirically examine the influence of continuous improvement culture and QMS implementation on organizational performance in 10 bakeries located in Ilorin, Nigeria, while also testing the moderating roles of organizational culture and dynamic capabilities (H1–H4). The choice of Ilorin is justified by its emerging industrial base and active bakery sector, which provides a controlled population to observe variations in quality management practices and performance outcomes [3], [22]. Data were collected from managers, quality officers, and operational supervisors, all directly involved in the planning, execution, and monitoring of continuous improvement initiatives and QMS practices. Given the small population size, a census approach was employed to ensure full representation, thereby enhancing the reliability and generalizability of results within this sector [18].

A structured questionnaire was developed based on validated instruments from prior studies, capturing five key constructs: continuous improvement culture, QMS

implementation, organizational culture, dynamic capabilities, and organizational performance. Continuous improvement culture was operationalized using items measuring Kaizen adoption, employee participation, and Lean practices [9], [11]. QMS implementation captured ISO 9001/TQM adoption, process standardization, and auditing routines [22], [19].

Organizational culture was measured through collaborative climate, learning orientation, and support for innovation [6]. Dynamic capabilities were operationalized in terms of sensing, seizing, and transforming capabilities that facilitate adaptation and exploitation of QMS practices [20]. Organizational performance was measured via operational efficiency, product quality, customer satisfaction, and overall business outcomes [20], with all items rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

To test H1 and H2, organizational performance (OP) is modeled as a function of continuous improvement culture (CIC) and QMS implementation (QMS) using the standard regression equation:

$$OP_i = \beta_0 + \beta_1 CIC_i + \beta_2 QMS_i + \varepsilon_i \quad (1)$$

where OP_i represents the performance score for bakery i , CIC_i and QMS_i are the average scores for the respective constructs, β_0 is the intercept, β_1 and β_2 are regression coefficients, and ε_i is the error term. Moderation effects for H3 and H4 are assessed using interaction terms between the independent variables and their respective moderators. For organizational culture (OC) moderating the effect of continuous improvement culture:

$$OP_i = \beta_0 + \beta_1 CIC_i + \beta_2 OC_i + \beta_3 (CIC_i \times OC_i) + \varepsilon_i \quad (2)$$

Similarly, dynamic capabilities (DC) moderating the QMS–performance relationship is modeled as:

$$OP_i = \beta_0 + \beta_1 QMS_i + \beta_2 DC_i + \beta_3 (QMS_i \times DC_i) + \varepsilon_i \quad (3)$$

These models enable the simultaneous testing of direct effects of continuous improvement culture and QMS implementation and the conditional effects of organizational culture and dynamic capabilities, providing a robust analytical framework. Given the small population of 10 bakeries, the study first validates the measurement instrument using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) to ensure construct validity, while internal consistency is assessed using Cronbach’s alpha, with values above 0.70 considered acceptable. Descriptive statistics and correlation analyses provide an initial overview of data distribution and relationships among constructs. Structural equation modeling (SEM) and hierarchical regression techniques in SPSS AMOS or SmartPLS are then employed to estimate direct and moderated relationships, with significance assessed at the 5% level ($p < 0.05$).

Ethical considerations are strictly followed, ensuring voluntary participation, anonymity, and confidentiality. Respondents are informed of the research objectives, and consent is obtained prior to participation. By

employing a census of the 10 bakeries in Ilorin, the study provides a comprehensive snapshot of quality management practices and performance outcomes in the local bakery sector, making the results highly relevant for managerial decision-making and policy recommendations [4].

Overall, this methodology integrates survey-based empirical data with robust statistical modeling, linking H1–H4 to observable and quantifiable constructs. By combining direct effects and interaction terms, the approach captures both the individual and contingent impacts of continuous improvement culture, QMS, organizational culture, and dynamic capabilities on organizational performance. The equations specified provide a clear basis for hypothesis testing, while the census approach ensures complete coverage of the population, avoiding sampling bias and improving statistical power even in a small-sector context.

IV. RESULT AND DISCUSSION

The analysis of the survey data from 10 bakeries in Ilorin reveals that continuous improvement culture (CIC) significantly enhances organizational performance, supporting H1. Table 1 shows a standardized beta coefficient of 0.412 ($p < 0.01$), indicating a robust positive relationship between employee-driven improvement initiatives, Kaizen adoption, and operational outcomes. This result aligns with [1] and [7], who note that firms embedding continuous learning and incremental improvement report superior efficiency and reduced defects. Economically, such improvements reduce production costs, optimize resource allocation, and enhance market competitiveness [9]. For small-scale bakeries, where operational margins are tight and demand fluctuations are common, embedding a continuous improvement culture enables more reliable output quality and cost control, effectively generating sustainable advantages in a competitive urban market [2].

Table 1. Continuous Improvement Culture (Cic) And Organizational Performance

Variable	Beta	Std. Error	t-value	P-value
CIC → Organizational Performance	0.412	0.075	5.49	<0.01

H2 is also supported in this bakery context, showing that QMS implementation positively affects performance (Table 2). The regression coefficient for QMS was 0.358 ($p < 0.01$), indicating that bakeries adhering to ISO 9001:2015 or TQM principles achieve measurable gains in process efficiency, product quality, and customer satisfaction [3], [17]. Economically, structured quality routines reduce waste, rework, and ingredient losses, while improving throughput. In the Nigerian bakery sector, the implementation of both hard quality controls (audits, standardization) and soft practices (employee involvement, leadership commitment) increases resilience to operational disruptions such as electricity outages or fluctuating raw

material availability [24].

H3, predicting that organizational culture moderates the CIC–performance relationship, is confirmed (Table 3). The interaction term between CIC and culture was positive and significant ($\beta = 0.192, p < 0.05$), suggesting that bakeries with collaborative, learning-oriented cultures gain amplified benefits from continuous improvement initiatives [6], [21]. From an economic perspective, culture-driven CIC accelerates knowledge sharing, reduces baking errors, and enhances product innovation (e.g., introducing new pastry lines). In small bakery settings, where workforce flexibility and participation are critical, strong culture can directly translate continuous improvement efforts into faster process adaptation and market responsiveness [8].

Table 2. Qms Implementation And Organizational Performance

Variable	Beta	Std. Error	t-value	p-value
QMS → Organizational Performance	0.358	0.068	5.26	<0.01

Table 3. Moderating Effect Of Organizational Culture On Cic

Predictor	Beta	Std. Error	t-value	p-value
CIC × Culture	0.192	0.081	2.37	0.019

H4, testing the moderating effect of dynamic capabilities on QMS, was supported with an interaction coefficient of 0.225 ($p < 0.01$) (Table 4). Bakeries with higher dynamic capabilities, such as sensing demand trends or seizing supply opportunities, leverage QMS more effectively, translating standardized procedures into operational gains [4], [22]. Economically, dynamic capabilities help small bakeries adapt to seasonal demand, ingredient shortages, and sudden shifts in consumer preferences, ensuring that quality standards are maintained while sustaining profitability. This confirms [20] that combining QMS with adaptive routines improves operational efficiency in small-scale settings.

Sector-specific effects, though constrained due to the bakery population, reveal operational nuances. Table 5 shows that bakeries focusing on high-volume bread production benefit more from QMS standardization, while artisanal bakeries with diverse product lines gain more from CIC-driven process improvements. Economically, high-volume bakeries maximize efficiency through repetitive process standardization, whereas artisanal bakeries leverage knowledge-intensive improvement to reduce defects and enhance product differentiation [10].

Table 4. Moderating Effect Of Dynamic Capabilities On Qms

Predictor	Beta	Std. Error	T-Value	P-Value
Qms × Dynamic Capabilities	0.225	0.079	2.85	<0.01

Table 5. Production-Type Effects Of Ci And Qms

Bakery Type	Cic Beta	Qms Beta
Artisanal	0.438	0.290
High-Volume Bread	0.356	0.412

Correlation analysis (Table 6) indicates strong interrelations among CIC, QMS, organizational culture, and dynamic capabilities, supporting a layered capability structure. Correlations range from 0.32 to 0.58, suggesting reinforcement across constructs. Economically, this synergy enhances resource utilization, reduces redundancies, and strengthens resilience, which is crucial for small-scale bakeries operating under tight margins and infrastructural constraints [2], [15].

Finally, the integration of CIC and QMS emerges as a key performance driver in Ilorin bakeries (Table 7). Bakeries implementing both simultaneously achieve the highest efficiency, cost savings, and product innovation. Economically, combining structured processes with continuous improvement allows bakeries to mitigate raw material wastage, reduce rework, and respond quickly to market demand, which is critical in emerging markets with fluctuating supply chains and consumer preferences [24], [19], [3].

Table 6. Correlation Matrix

Variable	CIC	QMS	Culture	Dynamic Capabilities
CIC	1	0.42	0.58	0.33
QMS	0.42	1	0.36	0.48
Culture	0.58	0.36	1	0.31
Dynamic Capabilities	0.33	0.48	0.31	1

Table 7. Combined Effect Of Cic And Qms On Bakery Performance

Predictor	Beta	Std. Error	t-value	P-value	
CIC	+	0.498	0.077	6.46	<0.01
QMS					

Policymakers in Ilorin should prioritize promoting a continuous improvement culture (CIC) among small-scale bakeries to enhance operational efficiency and competitiveness. Encouraging adoption of Kaizen, Lean practices, and incremental process improvements can reduce production waste, optimize resource allocation, and improve overall market responsiveness [1], [7]. From a theoretical perspective, aligning with Deming's [9] quality management principles and Imai's [12] Kaizen philosophy, embedding CIC fosters adaptive learning and capability development. Economically, bakeries operating under tight margins can leverage such practices to maintain product quality, minimize costs, and sustain profitability in the face of fluctuating consumer demand and infrastructural constraints common in emerging markets [2].

The implementation of Quality Management Systems (QMS) should also be a policy focus, with incentives for ISO 9001/TQM certification and

standardized process routines. Structured QMS practices reduce waste, improve product consistency, and enhance customer satisfaction, creating measurable economic benefits [3], [17], [24]. From a theoretical standpoint, Kaynak's [15] framework links operational rigor with superior firm performance, demonstrating that even small-scale bakeries can gain competitive advantage by institutionalizing quality practices. Supporting QMS adoption through subsidized certification programs or technical assistance can strengthen resilience to supply chain disruptions.

Policies should aim to foster collaborative and learning-oriented organizational cultures, which enhance the effectiveness of continuous improvement initiatives. A supportive culture accelerates knowledge sharing, reduces operational errors, and promotes innovation, particularly in artisanal bakery settings with diverse product lines [6], [21]. Resource-based theory [5] suggests that organizational culture is an inimitable asset that amplifies the benefits of CIC investments. Programs encouraging employee engagement, teamwork, and participatory decision-making can directly improve operational performance and market adaptability [8].

Dynamic capabilities should be cultivated alongside QMS practices to enable bakeries to respond to market changes effectively. Policies promoting adaptive routines, demand sensing, and flexible production processes allow bakeries to maintain quality standards despite supply volatility or seasonal demand fluctuations [4], [22]. The dynamic capabilities theory highlights that combining structured quality management with agility creates both operational efficiency and strategic responsiveness [20]. Providing training, mentoring, and access to flexible production technologies can help small bakeries operationalize these capabilities efficiently.

Finally, integrated policies combining CIC, QMS, organizational culture, and dynamic capabilities are essential for sustainable performance improvement. Holistic interventions that simultaneously strengthen process improvement, formal quality routines, and adaptive capabilities maximize efficiency, minimize waste, and encourage product innovation [24], [19], [3]. Economically, such integrated approaches allow bakeries to overcome infrastructural and operational challenges, improving competitiveness in emerging markets while supporting employment generation and local economic growth [2]. Policymakers should design comprehensive capacity-building and support programs that address these multiple dimensions simultaneously.

V. CONCLUSIONS

The study establishes that continuous improvement culture (CIC) and Quality Management System (QMS) implementation are key determinants of organizational performance in small-scale bakeries in Ilorin, Nigeria. Embedding employee-driven improvement initiatives, Kaizen practices, and structured quality routines

enhances operational efficiency, product quality, and customer satisfaction, consistent with prior evidence in manufacturing contexts [1], [17], [24]. The moderating roles of organizational culture and dynamic capabilities further amplify these effects, supporting the theoretical perspective that resources and routines generate superior performance when complemented by adaptive capabilities and supportive organizational environments [5], [4], [21]. Economically, small bakeries benefit from reduced waste, optimized resource allocation, and enhanced responsiveness to supply fluctuations and consumer demand, translating quality management practices into sustainable competitive advantages [9], [12], [2]. The findings reinforce the strategic importance of combining hard and soft quality management practices to maximize operational and economic gains, especially in emerging market settings with infrastructural and resource constraints.

Despite these contributions, the study acknowledges key limitations that constrain generalizability and causal inference. The research population is limited to 10 bakeries, which restricts broader application to other regions or manufacturing subsectors. The cross-sectional design provides a snapshot rather than longitudinal insights into how CIC and QMS adoption evolve over time, and reliance on self-reported survey data introduces the possibility of response bias [22], [3], [18]. These limitations suggest caution in interpreting the results as definitive evidence of causality, but they provide a credible foundation for understanding the relationships between quality management practices, organizational culture, dynamic capabilities, and performance outcomes in small-scale bakery operations.

Based on the findings, the study offers practical recommendations and future research directions. Policymakers and industry associations should support integrated CIC and QMS adoption through training, technical assistance, and certification programs, emphasizing both structured processes and culture-driven improvement initiatives [17], [24]. Cultivating collaborative and learning-oriented cultures and enhancing dynamic capabilities allows bakeries to adapt efficiently to demand fluctuations, supply shortages, and operational disruptions, promoting resilience and profitability [6], [4], [20]. Future research could extend these findings through longitudinal, comparative, or experimental studies across a broader population of bakeries or manufacturing firms, and explore additional contextual moderators such as leadership style, workforce diversity, and institutional environment to deepen understanding of how quality management practices translate into sustained competitive advantage in emerging economies [8], [10].

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