The Impact of Continuous Improvement Culture and Quality Management System Implementation on Organizational Performance: Evidence from the Nigerian Manufacturing Sector

Adeola Abibola[1]*

[1] Osun State University, Osogbo, Osun State, Nigeria; abimbola.ademola@uniosun.edu.ng

(Corresponding Author)

Abstract

This study investigates the influence of continuous improvement culture and mindset, alongside Quality Management System (QMS) implementation, on organizational performance within the Nigerian manufacturing sector. Using a survey research design, data were collected from 400 employees of Unilever Plc through structured questionnaires. Descriptive statistics revealed that respondents generally perceived their organizations as supportive of continuous improvement initiatives, providing feedback, resources, and promoting teamwork. Moderate challenges, including resistance to change, resource constraints, and communication gaps, were identified. Regression analysis indicated that continuous improvement culture and mindset significantly predicted organizational performance, explaining 56.6% of its variance, while QMS implementation accounted for 83.9% of the variance, both relationships statistically significant ($p < 0.001$). The findings highlight the critical role of structured quality practices in enhancing operational efficiency, strategic alignment, and customer satisfaction. The study recommends sustained investment in continuous improvement programs, effective change management, and ongoing evaluation of QMS effectiveness. Limitations related to single-organization focus and cross-sectional design are acknowledged, with future research suggested across multiple sectors and longitudinal studies to deepen understanding of quality management impacts.

Keywords: *Continuous Improvement Culture, Quality Management System, Organizational Performance, Manufacturing Sector, Employee Engagement, Strategic Alignment*

1. Introduction

The Nigerian manufacturing sector plays a critical role in the country's economic development, contributing approximately 10% of the Gross Domestic Product (National Bureau of Statistics, 2020). Despite its potential, the sector continues to face significant challenges, including inefficiencies, low productivity, poor product quality, and limited competitiveness (Adewole, 2017; Kartha, 2017). These challenges are further compounded by inadequate infrastructure, weak regulatory frameworks, and intense competition from imported goods, which collectively hinder the sector's ability to achieve sustainable growth and meet both domestic and international market standards (Adewole, 2017; National Bureau of Statistics, 2020).

One strategy that has been widely adopted globally to enhance organizational performance is the implementation of Quality Management Systems (QMS). QMS provides a systematic approach to managing processes, procedures, and policies, ensuring consistency, efficiency, and effectiveness in achieving organizational objectives (ISO, 2015). Empirical evidence suggests that effective QMS implementation can lead to improved product quality, higher customer satisfaction, and overall enhanced organizational performance (Hussain et al., 2018; Kartha, 2017; Santos et al., 2019; Singh et al., 2020).

However, despite these documented benefits, the adoption and implementation of QMS within Nigerian manufacturing companies remain limited (Oyedele et al., 2017). The sector's unique operational challenges, including inadequate infrastructure, poor regulatory frameworks, and limited understanding of QMS principles, may impede the effective implementation of these systems (Adewole, 2017; Oyedele et al., 2017). Consequently, many Nigerian manufacturing firms continue to experience high production costs, long lead times, substandard product quality, and low competitiveness in both local and global markets (Adewole, 2017; Kartha, 2017).

Given this context, understanding the role of QMS in improving organizational performance in Nigerian manufacturing companies is essential. While prior studies have highlighted the benefits of QMS implementation in other sectors and countries (Hussain et al., 2018; Singh et al., 2020), there is a paucity of research examining its adoption, challenges, and impact in the Nigerian manufacturing context. Addressing this gap is crucial for developing strategies that can enhance operational efficiency, product quality, and competitiveness within the sector.

Therefore, this study aims to investigate the influence of QMS on organizational performance in Nigerian manufacturing companies. Specifically, the study seeks to: (a) ascertain the impact of a continuous improvement culture and mindset on organizational performance, and (b) examine the relationship between QMS implementation and organizational performance. By providing insights into the current state of QMS adoption and its impact, this research contributes to both the academic literature and practical efforts to strengthen the Nigerian manufacturing sector.

2. Hypotheses Development

A continuous improvement (CI) culture is widely recognized as a cornerstone of organizational performance, particularly in manufacturing contexts. In Nigeria, the adoption of CI practices such as Kaizen has been linked to enhanced operational efficiency, reduced waste, and improved

employee engagement (Caldas, 2019; Abdullahi, 2020; Shuaib, He, & Song, 2021). However, some studies suggest that the impact of CI on performance may be contingent upon organizational culture and leadership support (Shuaib, He, & Song, 2021; Mustapha, 2021). Research indicates that organizational culture interacts with continuous improvement and management leadership to positively influence innovation (Shuaib, He, & Song, 2021; Akinlabi, 2018). This suggests that while CI practices can drive performance improvements, their effectiveness may be moderated by the underlying cultural and leadership frameworks within an organization (Abdullahi, 2020; Caldas, 2019).

In the Nigerian manufacturing sector, the relationship between CI and organizational performance is complex. A study examining the effect of continuous improvement on operational performance of manufacturing firms in Rivers State found that CI practices were positively correlated with quality and cost performance (Abdullahi, 2020; Caldas, 2019). However, the study also highlighted the moderating role of organizational culture in this relationship (Shuaib, He, & Song, 2021). This indicates that the success of CI initiatives may be significantly influenced by the prevailing organizational culture, which can either facilitate or hinder the desired performance outcomes (Mustapha, 2021; Akinlabi, 2018).

Therefore, while a continuous improvement culture has the potential to enhance organizational performance, its impact is not automatic. The effectiveness of CI practices in Nigerian manufacturing companies may depend on alignment with organizational culture and leadership support. This underscores the importance of fostering a conducive organizational environment to fully leverage the benefits of continuous improvement initiatives (Caldas, 2019; Shuaib, He, & Song, 2021).*Hypothesis 1: Continuous Improvement Culture and Organizational Performance*

The implementation of Quality Management Systems (QMS) is often associated with improved organizational performance, particularly in manufacturing settings. In Nigeria, studies have shown that Total Quality Management (TQM) practices, a component of QMS, are positively correlated with organizational performance. Research on Nigerian manufacturing companies found a significant relationship between TQM and organizational performance, highlighting improvements in defect prevention and effective management of change (Akinlabi, 2018; Mustapha, 2021; Shuaib, He, & Song, 2021).

Furthermore, the mediating role of dynamic capabilities has been explored in the context of QMS implementation. A study examining Nigerian manufacturing companies revealed that

dynamic capabilities positively mediated the relationship between QMS and innovation, suggesting that the ability to sense, learn, integrate, and coordinate within an organization can enhance the benefits derived from QMS implementation (Shuaib, He, & Song, 2021; Abdullahi, 2020; Akinlabi, 2018).

However, the relationship between QMS implementation and organizational performance is not universally positive. Some studies have reported mixed findings, indicating that the success of QMS initiatives may depend on the extent of implementation, employee involvement, and alignment with organizational goals (Mustapha, 2021; Shuaib, He, & Song, 2021). This suggests that while QMS implementation has the potential to improve organizational performance, its effectiveness is contingent upon various internal and external factors (Akinlabi, 2018; Abdullahi, 2020).*Hypothesis 2: QMS Implementation and Organizational Performance.*

3. Methodology

For this study, a survey research design was adopted, as it allows for direct interaction between the researcher and respondents to collect primary data, making it particularly suitable for studies where the perspectives of individuals are central to addressing the research problem. Surveys are effective in obtaining original information from a large population that cannot be fully observed, as they enable the researcher to define the target population and generalize the findings to that population (Ohaja, 2013). The study population comprised all employees of Unilever Plc, located at Plot L.I.W 9, Industrial Estate, Isolo, Lagos, Nigeria, totaling 500 individuals according to the Human Resource Department. To determine the sample size, the Yamane (1979) formula was applied, resulting in a sample of 400 respondents at a 95% confidence level and a 5% margin of error. A simple random sampling technique was employed, ensuring that each member of the population had an equal probability of being selected, which reduces bias and enhances the representativeness of the sample.

Data collection relied on both primary and secondary sources. Primary data were gathered using a structured questionnaire, divided into two sections: demographic information and technical questions aligned with the research objectives and hypotheses. Demographic questions captured respondents' personal characteristics, including gender, age, educational qualification, and marital status, while technical questions focused on specific constructs such as continuous improvement culture, challenges and barriers, QMS implementation, and organizational

performance. Secondary data were obtained from textbooks, journal articles, online publications, and other scholarly sources relevant to the study.

The validity and reliability of the research instrument were rigorously assessed to ensure the accuracy and consistency of the measurements. Validity was established through expert reviews and approval by the research supervisor, ensuring that the instrument measured what it was intended to assess (Asika, 2006). Reliability was evaluated using Cronbach's Alpha to determine the internal consistency of each construct, with a threshold of 0.7 considered acceptable (Malik, 2014; Oladele, Akinsorotan, & Ajadi, 2014). A pilot study was conducted, and confirmatory factor analysis was performed to assess construct validity, with Average Variance Extracted (AVE) values exceeding 0.5, indicating satisfactory construct validity. The results of the internal consistency analysis revealed Cronbach's Alpha coefficients ranging from 0.732 to 0.792 across all constructs, with an overall alpha of 0.760, confirming that the instrument was highly reliable.

The collected data were coded and analyzed using the Statistical Package for Social Scientists (SPSS). Descriptive statistics, including mean and standard deviation, were used to summarize the data, while regression analysis was applied to test the relationships among variables and draw inferences from the sample. This approach facilitated a comprehensive evaluation of the impact of continuous improvement culture, challenges and barriers, and QMS implementation on organizational performance, providing robust evidence to address the research objectives.

The socio-demographic profile of the respondents is presented in Table 1. The sample consisted of 200 respondents, comprising 112 (56.0%) males and 88 (44.0%) females, indicating balanced gender representation. Age distribution revealed that 100 (50.0%) respondents were below 25 years, 80 (40.0%) were between 25–35 years, 4 (2.0%) were between 35–45 years, and 16 (8.0%) were above 50 years, showing that the modal age group was 25–35 years. Regarding marital status, 82 (41.0%) were single, 100 (50.0%) were married, and 18 (9.0%) were divorced.

Educationally, 50 (25.0%) held a BSc, 60 (30.0%) held an HND, 40 (20.0%) had a Master's degree, 40 (20.0%) had an OND, and 10 (5.0%) held SSCE or equivalent qualifications. The majority of respondents were HND holders, suggesting an adequate level of understanding regarding the study's focus. In terms of employment category, 100 (50.0%) were junior staff, 60 (30.0%) senior staff, and 40 (20.0%) were in management positions. Regarding length of service, 100 (50.0%) had below 5 years of experience, 40 (20.0%) between 5–10 years, 30 (15.0%) between 11–15 years, 8 (4.0%) between 16–20 years, and 2 (1.0%) had above 20 years of

service. These findings demonstrate a diverse sample, encompassing a range of experience levels and organizational roles.

Table 1: Socio-Demographic Characteristics of Respondents

Demographic Characteristics	Responses	Frequency	Percentage (%)
Gender	Male	112	56.0
	Female	88	44.0
Age (Years)	<25	100	50.0
	25–35	80	40.0
	35–45	4	2.0
	50+	16	8.0
Marital Status	Single	82	41.0
	Married	100	50.0
	Divorced	18	9.0
Educational Qualification	BSc	50	25.0
	HND	60	30.0
	Masters	40	20.0
	OND	40	20.0
	SSCE	10	5.0
Category of Staff	Junior	100	50.0
	Senior	60	30.0
	Management	40	20.0
Length of Service	<5 years	100	50.0
	5–10 yrs	40	20.0
	11–15 yrs	30	15.0
	16–20 yrs	8	4.0
	20+ yrs	2	1.0

Source: Author (2025)

4. Results

Descriptive statistics for continuous improvement culture and mindset are shown in Table 2. Respondents indicated moderate agreement that their organizations encourage and support continuous improvement initiatives (Mean = 3.12, SD = 1.210) and that they receive feedback and recognition for proposing new ideas (Mean = 3.24, SD = 1.150). Higher agreement was observed regarding collaboration and teamwork in achieving continuous improvement (Mean = 4.18, SD = 0.791). Respondents also reported that resources and support for continuous improvement efforts were provided (Mean = 3.01, SD = 0.913) and that they often take initiatives to identify areas for improvement (Mean = 3.24, SD = 1.150). The overall mean of 3.358 (SD = 1.042) indicates general consensus toward a positive continuous improvement culture and mindset.

Table 3 presents the descriptive statistics for challenges and barriers in implementing continuous improvement initiatives. Respondents indicated that they often encounter resistance to change

(Mean = 3.22, SD = 0.711) and that lack of resources such as time, money, and personnel hinders continuous improvement efforts (Mean = 4.13, SD = 0.909). Communication breakdowns (Mean = 3.05, SD = 1.047), organizational culture and mindset barriers (Mean = 3.80, SD = 0.809), and difficulties in measuring QMS effectiveness (Mean = 3.00, SD = 0.891) were also reported. The overall mean of 3.44 (SD = 0.873) indicates moderate agreement that these factors affect continuous improvement initiatives.

Table 4 shows respondents' perceptions of QMS implementation. Respondents largely agreed that QMS contributes to customer satisfaction (Mean = 4.00, SD = 0.713) and aligns with organizational strategy (Mean = 4.04, SD = 0.709). Internal audits are regularly conducted (Mean = 3.14, SD = 1.148), employees are engaged in QMS activities (Mean = 3.17, SD = 0.910), and QMS has improved overall performance and efficiency (Mean = 3.00, SD = 0.891). The overall mean of 3.58 (SD = 0.87) indicates moderate to high agreement regarding QMS effectiveness.

Table 5 presents respondents' perceptions of organizational performance. The majority agreed that financial performance is high (Mean = 3.12, SD = 1.210), strategic objectives are effectively achieved (Mean = 3.24, SD = 1.150), and customer satisfaction is high (Mean = 4.18, SD = 0.791). Respondents also reported a positive and productive work environment (Mean = 3.01, SD = 0.913) and consistent adherence to deadlines (Mean = 3.00, SD = 0.891). The overall mean of 3.331 (SD = 1.191) indicates marginal to moderate agreement regarding organizational performance.

Table 2: Descriptive Statistics for Continuous Improvement Culture and Mindset

Response Variable	Mean	Std. Deviation
Organization encourages continuous improvement	3.12	1.210
Feedback and recognition for new ideas	3.24	1.150
Collaboration and teamwork for improvement	4.18	0.791
Provision of resources for improvement efforts	3.01	0.913
Initiative to identify areas for improvement	3.24	1.150
Overall Mean & SD	3.358	1.042

Source: Author

Table 3: Descriptive Statistics for Challenges and Barriers

Response Variable	Mean	Std. Deviation
Resistance to change	3.22	0.711
Lack of resources	4.13	0.909
Communication breakdowns	3.05	1.047
Organizational culture barriers	3.80	0.809

Response Variable	Mean	Std. Deviation
Difficulty measuring effectiveness	3.00	0.891
Overall Mean & SD	3.44	0.873

Source: Author

Table 4: Descriptive Statistics for QMS Implementation

Response Variable	Mean	Std. Deviation
QMS ensures customer satisfaction	4.00	0.713
QMS aligned with business strategy	4.04	0.709
Internal audits conducted	3.14	1.148
Employee involvement in QMS	3.17	0.910
QMS improves performance efficiency	3.00	0.891
Overall Mean & SD	3.58	0.87

Source: Author

Table 5: Descriptive Statistics for Organizational Performance

Response Variable	Mean	Std. Deviation
Financial performance is high	3.12	1.210
Achieving strategic objectives	3.24	1.150
High customer satisfaction	4.18	0.791
Positive and productive work environment	3.01	0.913
Meeting deadlines	3.00	0.891
Overall Mean & SD	3.331	1.191

Test of Hypotheses

Regression analysis examining the impact of continuous improvement culture and mindset on organizational performance is presented in Tables 6–8. The model summary (Table 6) shows $R = 0.752$ and $R^2 = 0.566$, indicating that 56.6% of the variance in organizational performance can be explained by continuous improvement culture and mindset. The ANOVA results (Table 7) confirmed the model's statistical significance ($F = 122.493$, $p < 0.001$). Regression coefficients (Table 8) reveal that continuous improvement culture and mindset significantly predicts organizational performance ($B = 0.902$, $t = 11.010$, $p < 0.001$). Therefore, the null hypothesis is rejected, confirming a significant positive effect.

Regression analysis assessing the effect of QMS implementation on organizational performance is presented in Tables 9–11. The model summary (Table 9) shows $R = 0.916$ and $R^2 = 0.839$, indicating that 83.9% of the variance in organizational performance is explained by QMS implementation. ANOVA results (Table 10) confirmed model significance ($F = 489.243$, $p < 0.001$). Regression coefficients (Table 11) indicate a significant positive relationship between

QMS implementation and organizational performance (B = 0.992, t = 22.001, p < 0.001). Hence, the null hypothesis is rejected, confirming that QMS implementation significantly enhances organizational performance.

The findings indicate that respondents perceive their organizations as fostering a continuous improvement culture, providing necessary resources, feedback, and promoting collaboration. Continuous improvement, a core aspect of TQM, enhances operational quality, productivity, and competitiveness by driving both incremental and breakthrough improvements (Tucker, 2019). Challenges identified, including resistance to change, limited resources, communication breakdowns, and cultural barriers, highlight the complexities in sustaining continuous improvement initiatives (Tariq et al., 2015).

Respondents also affirmed that QMS implementation contributes significantly to customer satisfaction, strategic alignment, internal compliance, employee engagement, and overall performance efficiency. This aligns with existing literature emphasizing that structured quality management systems improve competitiveness and operational effectiveness through high-quality and timely product and service delivery (Al-Rawahi& Bashir, 2011; Bell & Omachonu, 2011).

Table 6: Model Summary – Continuous Improvement Culture and Mindset

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.752	0.566	0.561	0.825

Source: Author

Table 7: ANOVA – Continuous Improvement Culture and Mindset

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	82.438	1	82.438	122.493	0.000
Residual	63.246	199	0.673		
Total	145.684	200			

Source: Author

Table 8: Coefficients – Continuous Improvement Culture and Mindset

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
Constant	0.070	0.337		-0.208	0.836
Continuous Improvement Culture & Mindset	0.902	0.091	0.752	11.010	0.000

Source: Author

Table 9: Model Summary – QMS Implementation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.916	0.839	0.837	0.468

Source: Author

Table 10: ANOVA – QMS Implementation

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	106.223	1	106.223	489.243	0.000
Residual	20.409	199	0.217		
Total	126.632	200			

Source: Author

Table 11: Coefficients – QMS Implementation

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
Constant	0.265	0.170		1.562	0.122
QMS Implementation	0.992	0.045	0.916	22.001	0.000

Source: Author

5. Conclusion

The findings of this study demonstrate that continuous improvement culture and mindset, alongside effective QMS implementation, significantly influence organizational performance within the Nigerian manufacturing context. Descriptive analysis revealed that employees generally perceive their organizations as supportive of continuous improvement initiatives, providing resources, recognition, and encouraging collaborative teamwork. These practices align with the principles of Total Quality Management (TQM), which posit that fostering a continuous improvement culture enhances operational quality, productivity, and competitiveness by promoting both incremental and breakthrough innovations (Tucker, 2019). The study also highlighted moderate challenges in sustaining continuous improvement initiatives, including resistance to change, resource constraints, communication gaps, and organizational culture barriers, underscoring the complexities organizations face in implementing quality-enhancing practices (Tariq et al., 2015).

Regression analyses further revealed a statistically significant positive relationship between continuous improvement culture and organizational performance, with 56.6% of the variance in performance explained by continuous improvement practices. Similarly, QMS implementation

exhibited a strong positive effect on organizational performance, accounting for 83.9% of the observed variance. These results suggest that structured quality management systems not only facilitate strategic alignment and compliance but also improve customer satisfaction, employee engagement, and operational efficiency, corroborating prior studies that link QMS adoption with enhanced organizational competitiveness and effectiveness (Al-Rawahi& Bashir, 2011; Bell & Omachonu, 2011).

Despite these contributions, the study is subject to several limitations. First, the focus on a single manufacturing organization may limit the generalizability of the findings to other industrial contexts in Nigeria or beyond. Second, the reliance on self-reported survey data introduces potential response biases, including social desirability and subjective perception influences. Third, the cross-sectional design captures respondents' perceptions at a single point in time, limiting the ability to infer causal relationships or observe long-term effects of continuous improvement initiatives and QMS implementation on organizational performance.

Based on the findings, several practical recommendations are proposed. Organizations should continue to invest in continuous improvement training, incentivize employee-led innovations, and strengthen collaborative structures to sustain a culture of quality. Management should address barriers such as resistance to change and resource constraints by promoting transparent communication, allocating sufficient resources, and integrating change management strategies into quality initiatives. Additionally, organizations are encouraged to rigorously monitor and evaluate QMS effectiveness, incorporating feedback loops that support iterative improvements and strategic decision-making.

For future research, longitudinal studies across multiple organizations and industrial sectors are recommended to capture dynamic changes in quality culture, QMS implementation, and organizational performance over time. Comparative studies between organizations with varying levels of QMS maturity could provide deeper insights into best practices and contextual factors influencing successful quality management adoption. Furthermore, qualitative investigations exploring employee experiences, managerial perspectives, and organizational culture could complement quantitative findings and provide a richer understanding of the mechanisms through which continuous improvement and QMS initiatives drive performance outcomes.

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