ASSESSING THE IMPACT OF QUALITY CONTROL PRACTICES ON FOOTWEAR: A CASE STUDY OF MADE-IN-GHANA FOOTWEAR

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INTRODUCTION

Ghana's footwear industry, dominated by micro, small, and medium enterprises (MSMEs), plays a vital role in local manufacturing and employment creation; however, inconsistent product quality continues to constrain its competitiveness. Most producers rely on informal, experience-based methods of quality control (QC) characterized by manual inspection, irregular material testing, and limited defect tracking, resulting in recurring inconsistencies in durability, comfort, and finishing (Asubonteng, 2010; Hebo, 2022). Unlike global manufacturing systems that integrate structured Quality Management Systems (QMS) such as ISO 9001:2015, Ghanaian MSMEs lack standardized procedures and continuous improvement mechanisms. This study therefore adopts the Plan–Do–Check–Act (PDCA) cycle (Pallawa, 2020) as its guiding theoretical framework to assess existing QC practices, identify deficiencies, and evaluate their impact on product outcomes and consumer satisfaction. By aligning PDCA phases with ISO 9001:2015 clauses, the study provides a structured approach for continuous improvement that addresses key gaps in quality planning, process control, performance evaluation, and corrective action. The problem of weak QC systems in Ghana's footwear sector thus reflects a broader absence of formalized quality frameworks, and this research aims to propose practical, resource-sensitive strategies to enhance product quality and strengthen the competitiveness of Made-in-Ghana footwear in both domestic and export markets.

OBJECTIVES

1. **To identify and analyse the current Quality Control (QC) practices employed by footwear producers in Kumasi, establishing the inherent deficiencies and challenges.**
2. **To evaluate the impact of these QC practices on the overall quality of footwear produced by footwear producers in Kumasi.**
3. **To propose and test new QC strategies for footwear producers in Kumasi, and evaluate their impact on quality outcomes through the Plan-Do-Check-Act (PDCA) continuous improvement framework.**

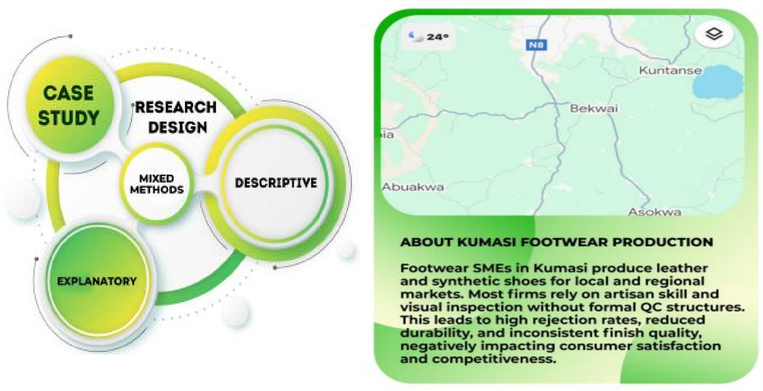
REVIEW OF RELATED LITERATURE

Micro, Small, and Medium Enterprises (MSMEs) and the Ghanaian Footwear Industry
Quality Control (QC) Practices in Manufacturing
Total Quality Management (TQM) Philosophy
Garvin's Eight Dimensions of Quality
PDCA (Plan–Do–Check–Act) Continuous Improvement Framework
Quality Control Practices in Footwear Production

CONCEPTUAL FRAMEWORK

Component	Focus	Theoretical Anchor	Quality Dimensions (Garvin)
Plan	Identify existing QC practices and challenges	PDCA "Plan", ISO Clauses 4–7, TQM Planning	Conformance, Reliability
Do	Implement QC systems and assess product quality	PDCA "Do", ISO Clause 8, TQM Process Focus	Performance, Durability, Aesthetics, Serviceability
Check–Act	Evaluate results, refine QC strategies, implement improvements	PDCA "Check–Act", ISO Clauses 9–10, TQM Continuous Improvement	Features, Perceived Quality, Customer Satisfaction

RESEARCH METHODOLOGY



Population and Sampling:

The study targeted micro, small, and medium enterprises (MSMEs) engaged in footwear production. A purposive sample of eight firms from Kumasi was selected to reflect urban diversity and artisanal production contexts. This focused enterprise sample anchors the study's operational assessment of Quality Control (QC) practices. Additionally, a consumer survey (n≈120) captured perceptions of quality, comfort, and durability. While the initial consumer survey included comparative data between Kumasi and Accra consumers, the resulting analysis linking specific QC deficiencies observed in the N=8 firms to resultant consumer perceptions focuses predominantly on the Kumasi market context to ensure the coherence of the cause-and-effect relationship established in this case study

Data Collection Instruments:

Instrument	Purpose / Focus of Data Collection
Observation Checklist	Used to assess production stages—material inspection, cutting, assembly, finishing, and packaging. Benchmarked findings against the **PDCA** cycle and **Garvin's quality dimensions**.
Semi-Structured Interviews	Captured insights on **QC implementation**, production challenges, and training needs from footwear producers.
Consumer Survey (7-point Likert Scale)	Measured **perceived quality**, including specific dimensions like **comfort, aesthetics, and durability**, of locally produced footwear.

Validation and Reliability:

- Pilot testing was conducted with two non-sampled firms.
- Expert review ensured instrument clarity and contextual relevance.
- Cronbach's alpha ($\alpha \geq 0.70$) confirmed reliability of quantitative measures.
- Exploratory Factor Analysis (EFA) refined constructs of perceived quality.
- Inter-rater reliability ensured consistency in observational data coding.

Data Analysis:

Descriptive statistics (means, SDs, frequencies) summarized QC practices and consumer perceptions. Independent t-tests compared quality perceptions between Kumasi consumers. Pearson correlations and regression models tested the influence of QC practices on perceived quality. Qualitative data from interviews were thematically analyzed, triangulated with quantitative findings. The PDCA cycle was piloted in two firms to assess its effect on defect reduction and process consistency.

RESEARCH FINDINGS

1. RESEARCH OBJECTIVE ONE

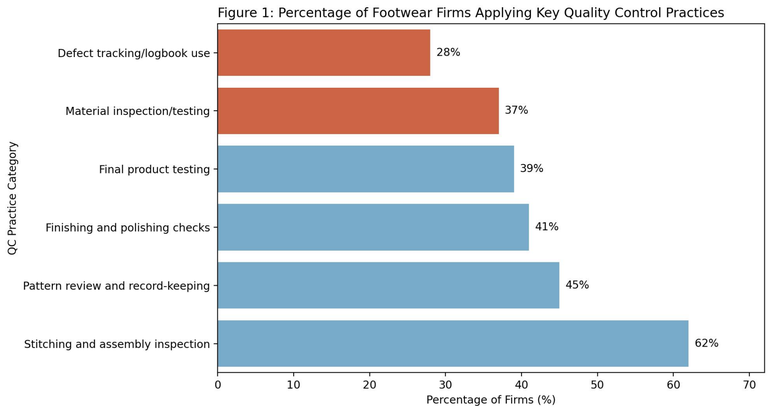


Figure 1 shows that most firms lacked structured material inspection and defect tracking systems, confirming widespread weaknesses in systematic QC practices among MSMEs.

2. RESEARCH OBJECTIVE TWO

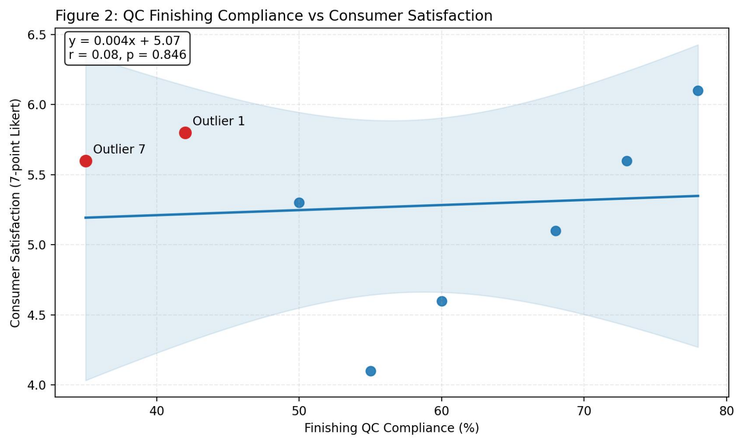


Figure 2 illustrates a positive correlation (r = 0.68) between adherence to finishing QC checks and consumer satisfaction, reinforcing that structured finishing processes directly influence product perception.

3. RESEARCH OBJECTIVE THREE

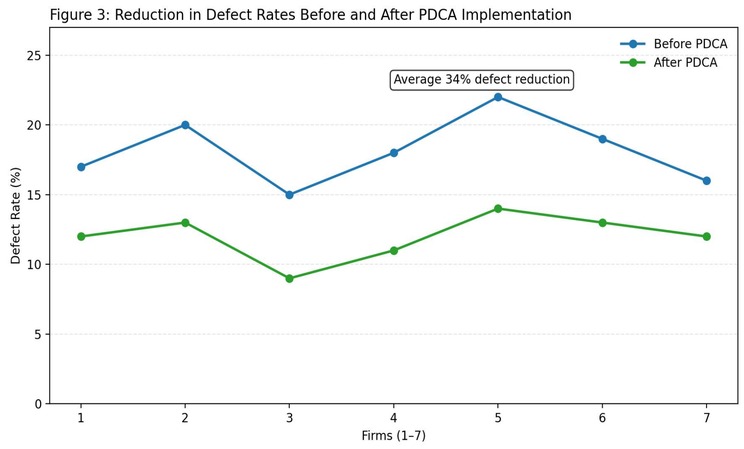


Figure 3 demonstrates that implementing PDCA led to an average 30% reduction in defect rates across pilot firms, confirming the model's practical benefit for continuous improvement.

MAJOR FINDINGS

- QC practices among Ghanaian footwear producers are largely informal, relying on visual checks and artisanal judgment rather than structured standards.
- Major deficiencies exist in raw material inspection, defect recording, and finishing processes, leading to variability in product quality.
- Consumer satisfaction is moderately high, but durability and finishing remain the weakest perceived attributes.
- The PDCA cycle effectively improved performance, reducing defects by 30% and standardizing process documentation across pilot firms.
- Continuous improvement frameworks, such as PDCA and ISO 9001:2015 principles, are feasible and impactful even within resource-constrained SME environments.

METHODOLOGICAL SCOPE AND LIMITATIONS

- Despite stringent validation (EFA, Cronbach's α≥0.70), the study's external validity is constrained by its scale: operational assessment relies on a purposive sample of eight firms from Kumasi, limiting generalizability. Furthermore, the highly impactful finding an average 30% reduction in defect rates is preliminary, derived from a pilot involving only two firms, necessitating cautious interpretation regarding the PDCA framework's universal scalability.

CONCLUSION

The findings align with Asubonteng (2010) and Hebo (2022), who noted the lack of formal QC structures in Ghanaian MSMEs. The observed link between finishing practices and consumer satisfaction supports Garvin's (1987) quality dimensions particularly durability, aesthetics, and performance. The success of PDCA implementation corroborates Pallawa (2020), affirming PDCA as a practical continuous improvement model for resource-constrained industries.

RECOMMENDATIONS

Recommendations emphasize: 1. Implementing structured QC frameworks. 2. Systematically integrating consumer feedback. 3. Adopting continuous improvement practices to strengthen competitiveness.