QUALITY MANAGEMENT PRACTICES AND PRODUCT CONSISTENCY AT CROWN BEVERAGES LTD

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UGANDA CHRISTIAN UNIVERSITY

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DECLARATION

I, **Ocokan George Leonard,** declare that this Dissertation entitled ***"Quality Management Practices and Product Consistency at Crown Beverages Ltd"*** is my own original work and has never been presented at any academic Institution in fulfilment of the requirements for any academic award. All sources of information used in this report have been well cited and corresponding authors acknowledged. I therefore submit it to Uganda Christian University for the award of a Master's Degree in Business Administration.

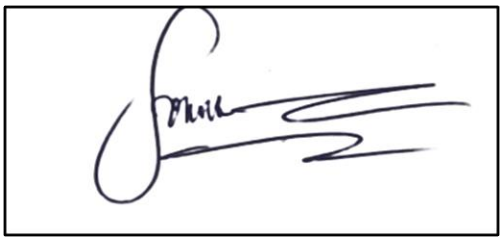
Signed: …….

Date……19-03-2026……

Ocokan George Leonard

APPROVAL

I approve that this research by Ocokan George Leonard, entitled **"Quality Management Practices and Product Consistency at Crown Beverages Ltd"** was conducted under my supervision and is now ready for submission.



Sign; ***Kasozi Geoffrey***.

Date: 22nd March 2026.

MR. KASOZI GEOFFREY

SUPERVISOR

DEDICATION

I dedicate this dissertation to my Wife and Children

ACKNOWLEDGEMENT

I thank God because it is by his sufficient grace that I have come this far. I extend my gratitude to my supervisor: Dr. Kasozi Geoffrey who didn't stop at being my supervisor but went ahead and became a friend and an inspiration to me. I sincerely thank God for having given me a chance to meet him as my supervisor.

I wish to thank all my respondents from Crown Beverages Ltd in their different capacities, for the support and cooperation extended to me. However, nothing would have been achieved without the understanding and encouragement of my entire family especially my sponsor RT Hon Anita Annet Among, the speaker of the parliament of Uganda who stood by me throughout this study and encouraged me to continually search for excellence; my lovely spouse and siblings whose time I borrowed to concentrate on this work. Also, for those persons not revealed here but in one way or another supported me in the completion of this study, I greatly appreciate their contribution.

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ABSTRACT

This study examined the relationship between quality management practices and product consistency at Crown Beverages Ltd. The objectives were to assess the extent to which quality planning, quality control, and quality assurance influence the uniformity and reliability of products in the organization. A descriptive and inferential research design was employed, with data collected from 199 respondents across top management, senior managers, and operational staff. Structured questionnaires were used to gather information on perceptions and practices regarding quality management, and the data were analyzed using descriptive statistics, Pearson's correlation, and multiple regression analysis. The findings revealed that respondents generally agreed that quality management practices were implemented, with quality planning, quality control, and quality assurance being moderately to strongly practiced. Quality control and quality assurance were identified as the strongest contributors to maintaining consistent product quality, while employee involvement and resource allocation in quality planning were noted as areas requiring improvement. Correlation analysis indicated strong positive and significant relationships between all quality management components and product consistency ($p < 0.01$). Multiple regression results showed that quality control ($\beta = 0.476$, $p < 0.001$) and quality assurance ($\beta = 0.328$, $p < 0.001$) significantly predicted product consistency, whereas quality planning had a minimal and non-significant effect ($\beta = 0.005$, $p = 0.951$). Collectively, the model explained 59.5% of the variation in product consistency, highlighting the critical role of operational monitoring, adherence to standards, and systematic quality assurance practices in ensuring uniform product quality at Crown Beverages Ltd. The study concludes that enhancing quality control and assurance mechanisms is essential for sustaining high product standards, reducing defects, and maintaining customer satisfaction. It is recommended that Crown Beverages Ltd. strengthen employee training, allocate adequate resources for quality planning, and continuously monitor quality assurance processes to further improve product consistency and operational efficiency.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This study examined the relationship between quality management practices (independent variable) and product consistency (dependent variable) in the beverage manufacturing industry, focusing on Crown Beverages Ltd. In a highly competitive market, maintaining consistent product quality in terms of taste, appearance, packaging, and overall standards is essential for customer satisfaction, brand loyalty, and organizational sustainability. The study emphasized that quality management practices—specifically quality planning, quality control, and quality assurance—play a critical role in monitoring and improving production processes to minimize variations and ensure products meet established standards. As a major soft drink producer in Uganda manufacturing beverages such as Pepsi, Mirinda, and Mountain Dew, Crown Beverages Limited must consistently deliver products that meet both customer expectations and regulatory requirements. Therefore, the study sought to evaluate how quality management practices influence product consistency and to generate insights that could help Ugandan manufacturing firms strengthen operational efficiency and enhance customer satisfaction.

1.1 Background of the study

This section presents historical, theoretical, conceptual, and contextual perspectives of the study

1.1.1 Historical Perspective

Quality management has evolved significantly over the decades, beginning with basic inspection methods during the industrial revolution to the adoption of comprehensive quality management systems in the late 20th and early 21st centuries. The early 1900s saw pioneers like Frederick W. Taylor emphasize standardization and scientific management, which laid the groundwork for quality control principles. Later, scholars such as W. Edwards Deming and Joseph Juran introduced concepts of Total Quality Management (TQM), statistical process control, and continuous improvement (Juran & Godfrey, 1999; Deming, 1986). These advancements shifted quality assurance from mere end-product inspection to a process-oriented approach integrated into the production cycle.

In Uganda, the adoption of quality management frameworks gained momentum in the early 2000s, driven by increasing globalization, regulatory standards, and customer expectations. Manufacturing firms like Crown Beverages Ltd began to implement systems such as ISO 9001 to improve operational efficiency, comply with international standards, and ensure consistent product quality (UNBS, 2015).

1.1.2 Contextual Perspective

Crown Beverages Ltd, the franchise bottler of PepsiCo products in Uganda, operates in a highly competitive beverage industry where brand loyalty and market share heavily depend on consistent product quality. With increasing consumer awareness and regulatory scrutiny by bodies such as the Uganda National Bureau of Standards (UNBS), ensuring product uniformity is not just a competitive advantage but a compliance necessity (UBOS, 2022).

Despite technological advancements and quality certifications, maintaining consistent product quality remains a challenge due to fluctuations in raw material quality, machine maintenance issues, and human error. This calls for robust quality management practices such as Total Quality Management (TQM), Six Sigma, Statistical Process Control (SPC), and Continuous Improvement (Kaizen). At Crown Beverages Ltd, the implementation of these practices is critical to ensure that consumers receive products that meet predefined standards in taste, packaging, and shelf-life, thereby enhancing customer satisfaction and brand trust (Kasozi, 2020).

1.1.3 Conceptual Perspective

Conceptually, quality management practices refer to structured systems and methodologies aimed at enhancing the quality of products and processes through continuous improvement, customer focus, and employee involvement (Oakland, 2014). Key practices include Quality Planning, Quality Control, Quality Assurance, and Quality Improvement, which are interlinked to monitor and manage production processes.

Product consistency, on the other hand, denotes the ability of a manufacturing firm to produce goods with minimal variations across batches, ensuring uniform quality over time (Evans & Lindsay, 2017). This consistency is crucial in sectors like beverage manufacturing, where consumer expectations are tied to specific taste profiles, packaging formats, and shelf stability.

Several studies have demonstrated that a strong alignment between quality management practices and operational processes leads to improved product consistency and reduced defect rates (Sallis, 2014; Kumar et al., 2009). Thus,

understanding how quality management practices affect product consistency at Crown Beverages Ltd will contribute to both academic knowledge and practical solutions for quality improvement in Uganda's manufacturing sector.

1.2 Problem statement

In the highly competitive beverage industry, ensuring consistent product quality is crucial for meeting customer expectations, preserving brand loyalty, and adhering to regulatory standards. For firms like Crown Beverages Ltd., maintaining uniformity in aspects such as taste, packaging, carbonation, and product safety across beverages like Pepsi, Mirinda, and 7UP is vital to upholding their brand image and market success. Nevertheless, even with the implementation of various quality management practices (QMP), many manufacturing companies in Uganda still struggle to maintain consistent product standards throughout successive production batches (Namusoke, 2021).

At Crown Beverages Ltd., several formal quality systems have been instituted including Total Quality Management (TQM), ISO 9001 certification, and routine quality audits to manage and control production processes. These practices are designed to reduce variability, monitor critical quality parameters, and promote continuous improvement. However, reports of inconsistencies such as fluctuating taste, uneven carbonation, packaging misalignment, and labelling errors continue to surface from both consumers and quality control records. These product deviations suggest that while QMPs are present, their effectiveness in fully guaranteeing product consistency remains questionable. This persistent variation not only erodes consumer confidence but also

puts the company at risk of regulatory non-compliance and loss of market competitiveness (Uganda National Bureau of Standards [UNBS], 2022).

Several underlying factors contribute to this gap between quality management efforts and actual product consistency. These include irregular calibration of equipment, human errors in production, variability in the quality of raw materials especially those sourced from international suppliers—and delays or breakdowns in quality monitoring mechanisms. Moreover, the complex nature of beverage production demands rigorous and responsive quality systems, which may be lacking in some operational areas due to resource constraints or inconsistent policy enforcement (Mugerwa, 2020).

While previous studies have examined the broader influence of quality management on firm performance focusing largely on profitability, customer satisfaction, or productivity there is a lack of targeted research specifically investigating the direct relationship between QMP and product consistency in the beverage sector (Kivumbi, 2021). As consumer expectations continue to evolve, and as competition intensifies both locally and regionally, it becomes increasingly vital for beverage manufacturers to guarantee not just quality, but consistent quality.

Therefore, this study seeks to address this critical gap by exploring the extent to which quality management practices influence product consistency at Crown Beverages Ltd. Specifically, the research will analyze how these practices are applied across production stages, identify key areas where lapses or inconsistencies occur, and recommend strategies to strengthen quality systems for more reliable and consistent product output.

1.3 Purpose of the study

To examine the effect of quality management practices in ensuring product consistency at Crown Beverages Ltd.

1.4 Specific objectives

The study sought to achieve the following objectives;

1. To examine the effect of quality planning on product consistency at Crown Beverages Ltd.
2. To assess the influence of quality control on maintaining uniform product standards at Crown Beverages Ltd.
3. To examine effect of quality assurance on product consistency at Crown Beverages Ltd.

1.5 Research questions

The study answered the following research questions;

1. How does quality planning affect product consistency at Crown Beverages Ltd.?
2. To what extent do quality control ensure uniformity in product output at Crown Beverages Ltd?
3. In what ways do quality assurance influence the consistency of soft drink products at Crown Beverages Ltd?

1.6 Hypothesis

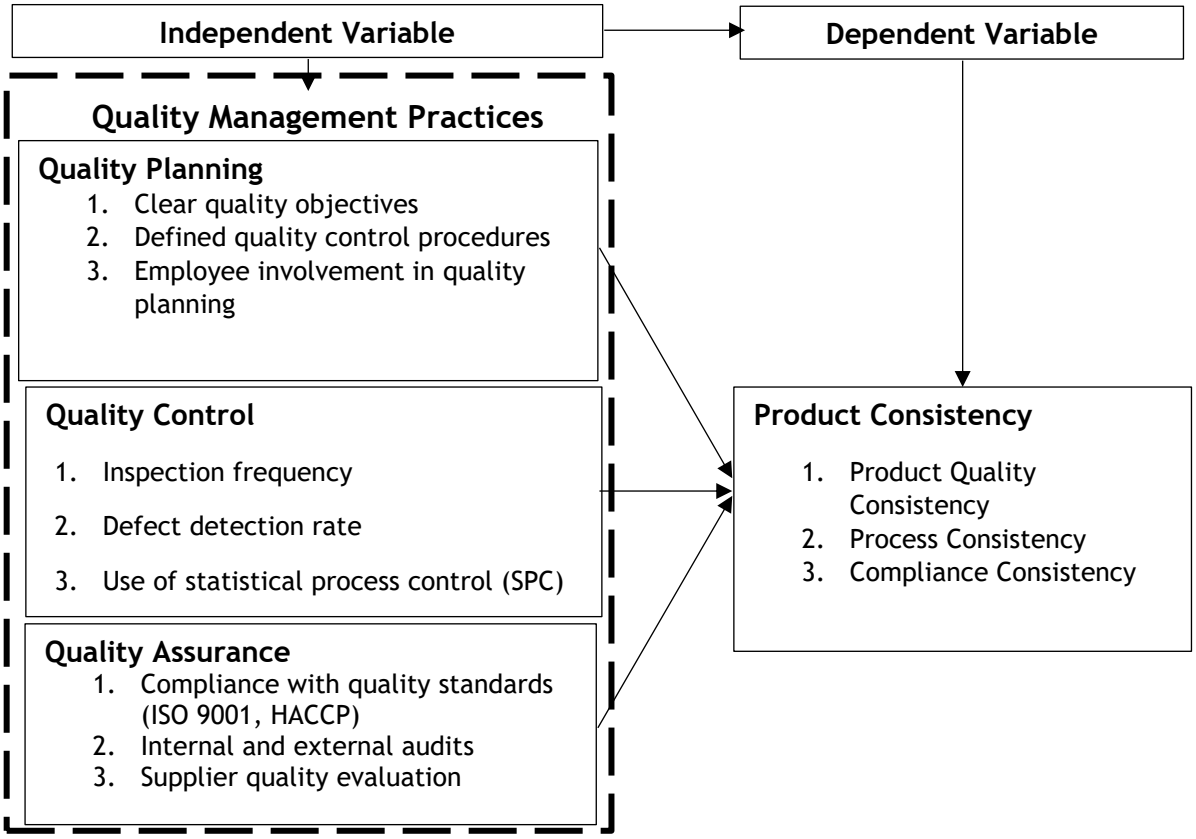
The study tested the following hypothesis;

H1: Quality planning has a significant effect on product consistency at Crown Beverages Limited.

H2: Quality control and assurance practices have a significant influence on maintaining uniform product standards at Crown Beverages Limited.

H3: Quality assurance have a significant effect on enhancing product consistency at Crown Beverages Limited.

1.7 Conceptual framework



Source: adapted from Holm (2010) and revised by the researcher

Figure 1: Figure 1.1: Conceptual framework

The conceptual framework of this study illustrates the relationship between Quality Management Practices (QMPs) and product consistency at Crown Beverages Ltd. Quality

Management Practices, considered the independent variables, include quality planning, quality control and assurance, and continuous improvement initiatives. The dependent variable, product consistency, reflects the uniformity of products in terms of taste, appearance, packaging, and adherence to established standards. This framework provides a structured lens to explore how these quality practices collectively influence consistent product outcomes in the Ugandan beverage industry.

Quality planning involves organizing production activities, setting quality objectives, and anticipating potential risks to design processes that meet desired standards. Quality control and assurance focus on monitoring production, conducting inspections, and enforcing compliance with quality standards through tools such as Statistical Process Control (SPC), audits, and corrective actions. Continuous improvement emphasizes ongoing enhancements, feedback incorporation, and process optimization to reduce inefficiencies and adapt production to changing operational and market demands. Together, these practices ensure that product quality is maintained and progressively improved over time.

The framework posits that the integration of these three components of QMPs directly drives product consistency, creating an environment where products are standardized, monitored, and continuously enhanced. Additionally, employee participation, management support, and operational resources may act as moderating factors influencing the strength of these relationships. Conceptually, QMPs serve as the foundation for achieving consistent product quality, and their effective implementation is critical for operational efficiency and customer satisfaction.

1.8 Scope of the study

1.8.1 Content scope

The study will specifically cover quality management practices such as Total Quality Management (TQM), Statistical Process Control (SPC), ISO 9001 quality standards, quality audits, and continuous improvement initiatives. It will assess how these practices are designed, implemented, monitored, and evaluated within the production environment to maintain uniformity in product characteristics such as taste, appearance, packaging, and shelf life.

The research will involve both managerial and technical staff within departments such as Quality Assurance, Production, Supply Chain, and Engineering. These key personnel will provide insights into the planning, execution, and challenges of maintaining consistent quality across product lines such as Pepsi, Mirinda, and Mountain Dew.

1.8.2 Time scope

The time scope will focus on the period between 2020 and 2024**,** during which the company has made several quality system upgrades and faced challenges due to market expansion, supply chain disruptions, and increasing customer expectations.

The study does not extend to customer perception, distribution networks, or financial performance beyond how they relate to quality management and product consistency. Additionally, while the findings may provide insights applicable to other beverage firms in Uganda, the scope is strictly confined to Crown Beverages Ltd. as a case study for in-depth analysis.

1.8.3 Geographical scope

This study focuses on examining the role of quality management practices in ensuring product consistency at Crown Beverages Ltd., a leading soft drink manufacturer in Uganda. The research is confined to the company's operational processes at its main production facility in Nakawa, Kampala, where the bulk of its bottling and packaging activities occur.

1.9 Justification of the study

Product consistency is a fundamental pillar of brand success in the beverage industry, where consumers expect uniform taste, appearance, and packaging across all batches of a product. For Crown Beverages Ltd., one of Uganda's most prominent soft drink manufacturers, ensuring this level of consistency is vital to maintaining customer loyalty, upholding brand reputation, and sustaining competitiveness in an increasingly saturated market. However, despite the company's adoption of various quality management practices, occasional inconsistencies in product quality have been reported, highlighting a need to critically assess the effectiveness of these practices (UNBS, 2022).

This study is justified on several grounds. First, it addresses a practical organizational need. As Crown Beverages continues to expand its market share and diversify its product line, the pressure to deliver consistent quality across large production volumes becomes more intense. An in-depth understanding of how quality management systems are applied and their role in sustaining product uniformity can help the company improve its internal processes and mitigate quality-related risks.

Second, the study contributes to the academic and professional knowledge base by filling a research gap. While several studies in Uganda have explored the general effects of quality management on firm performance (Namusoke, 2021; Kivumbi, 2021), few have specifically focused on the link between quality management practices and product consistency especially within the beverage manufacturing sector. This focused exploration provides new insights that can inform both scholars and practitioners in quality assurance, operations management, and manufacturing.

Third, the study is relevant to policy makers and regulatory bodies such as the Uganda National Bureau of Standards (UNBS). By highlighting the challenges and successes of implementing quality systems in the beverage industry, the research can guide policy recommendations for quality control standards and compliance enforcement across similar manufacturing sectors.

Finally, the study has broader implications for other manufacturing firms in Uganda and East Africa that are seeking to enhance their quality assurance frameworks. Lessons learned from Crown Beverages Ltd. can serve as benchmarks for companies striving to achieve operational excellence and customer satisfaction through consistent product quality.

1.10 Significance of the study

This study holds significant importance for Crown Beverages Ltd. as it allows the company to critically assess the effectiveness of its current quality management practices in ensuring product consistency. By identifying gaps and strengths in their systems, Crown Beverages Ltd. can implement targeted improvements that enhance

product uniformity, reduce production errors, and improve customer satisfaction. These improvements can also lead to cost efficiency, waste reduction, and stronger brand loyalty in a competitive beverage market.

Beyond the case company, the study is valuable to Uganda's broader beverage and manufacturing sector. It offers practical insights that other firms can adopt to strengthen their own quality management systems. As product consistency becomes a growing concern for both consumers and regulators, the study provides guidance on how companies can align with industry standards through practices like Total Quality Management (TQM), ISO certification, and continuous process monitoring.

Academically, the research addresses a critical gap in local literature by focusing on the relationship between quality management and product consistency—an area that has received limited attention in Uganda. It contributes to the body of knowledge in quality assurance and operations management, providing a useful reference for scholars, students, and curriculum developers. Additionally, the study is relevant to regulatory bodies like the Uganda National Bureau of Standards (UNBS), helping inform policy development and quality control guidelines for the manufacturing sector.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviews relevant literature on the role of Quality Management Practices (QMPs) and product consistency at Nile Breweries Uganda Ltd. The discussion is structured around key dimensions of MPs namely, top management commitment, employee involvement, and quality assurance and their influence on maintaining consistent product quality in manufacturing firms. The chapter concludes by highlighting gaps in the literature and positioning the current study.

2.2 Theoretical review

This study was guided by W. Edwards Deming's Quality Theory, which provides a systems-oriented perspective for understanding the relationship between quality management practices and product consistency. The theory emphasizes that continuous improvement of organizational processes leads to better product outcomes and consistent quality standards, thereby providing a relevant foundation for examining how quality planning, quality control, and quality assurance influence product consistency at Crown Beverages Ltd.

Deming's Quality Theory, developed by Dr. W. Edwards Deming, is grounded in the belief that the key to achieving and sustaining quality lies in improving the underlying processes that produce a product. Deming argued that most quality issues arise not from individual worker errors but from poorly designed systems and processes (Deming, 1986). His approach promotes a shift from reactive inspection to proactive process

improvement, making it highly relevant to modern manufacturing environments like Crown Beverages Ltd.

Central to Deming's theory is the Plan-Do-Check-Act (PDCA) cycle, a continuous improvement model that enables organizations to systematically plan for quality, implement changes, monitor results, and make necessary adjustments. This cycle encourages a culture of learning and adaptability, which is essential in dynamic sectors such as the beverage industry, where even minor inconsistencies in taste, packaging, or carbonation can negatively impact customer perceptions.

Deming also emphasized variation reduction, stating that consistency in product quality can only be achieved when processes are stable and under control. This idea directly supports the concept of product consistency, which in this study refers to the uniformity of product characteristics such as taste, appearance, and packaging across different production cycles.

At Crown Beverages Ltd., quality management practices namely quality planning, quality control, quality assurance, and continuous improvement can be effectively interpreted through Deming's Quality Theory. Quality planning corresponds with Deming's emphasis on leadership-driven objectives and strategic integration, while quality control and assurance focus on monitoring processes and maintaining output standards to minimize variation. Additionally, continuous improvement embodies Deming's PDCA cycle, promoting ongoing process refinement and a culture of systematic problem-solving.

Despite having formal quality systems like ISO certifications and quality audits in place, Crown Beverages Ltd. continues to face occasional product inconsistencies, indicating that there may be gaps in how these practices are implemented or monitored. Deming's theory provides a useful framework for diagnosing these gaps not by blaming individuals, but by assessing and improving the entire system that supports production.

Thus, Deming's Quality Theory is an appropriate theoretical foundation for this research, as it explains how structured, organization-wide quality management practices can lead to stable and consistent product outcomes. By applying this theory, the study aims to understand the effectiveness of QMP at Crown Beverages Ltd. and propose evidence-based strategies to improve product consistency.

2.3 Concept of Quality Management Practices

Quality Management Practices (QMPs) encompass a set of structured activities, policies, and strategies implemented by organizations to maintain and enhance the quality of their products and services. These practices are designed to ensure that output consistently meets customer expectations and complies with industry standards. At their core, QMPs seek to embed quality into every function of the organization, from procurement and production to distribution and customer service. This approach promotes reliability, reduces defects, and enhances competitiveness in both local and global markets.

The foundation of QMPs lies in Total Quality Management (TQM), a comprehensive management philosophy that integrates all organizational functions toward achieving long-term success through customer satisfaction. TQM is built on key principles such as

continuous improvement, employee empowerment, customer focus, and process optimization (Oakland, 2014). It requires the involvement of everyone in the organization—from top management to frontline employees—in improving processes, products, and services to meet both internal and external quality requirements.

A core aspect of QMPs is top management commitment, which provides direction and allocates resources for quality initiatives. Without visible and sustained support from leadership, quality programs often fail to take root. Similarly, employee involvement is critical, as those directly engaged in production and service delivery are best positioned to identify inefficiencies and recommend improvements. Quality Management Practices also emphasize quality assurance systems, which include standard operating procedures (SOPs), audits, and performance metrics designed to detect and prevent deviations from desired quality levels.

Overall, Quality Management Practices serve as a strategic tool for organizations seeking to enhance their operational efficiency and product consistency. By aligning all organizational efforts around quality, companies can reduce waste, improve customer satisfaction, and strengthen brand loyalty. In manufacturing firms like Crown Beverages Ltd, the consistent application of QMPs is essential to maintaining product uniformity, meeting regulatory requirements, and sustaining a competitive advantage in the beverage industry.

2.4 Top Management Commitment and Product Consistency

Top management commitment is a critical pillar in the implementation and sustainability of quality management practices. It refers to the extent to which senior

executives prioritize quality in organizational strategies, allocate resources toward quality-related initiatives, and visibly support quality goals through their actions. Deming (1986) emphasized that management must provide leadership, remove barriers to performance, and create an environment conducive to continual improvement. In quality-driven organizations, senior leaders not only formulate quality policies but also set clear expectations and monitor performance outcomes to ensure consistency.

When leadership is committed, quality becomes embedded in the organization's culture. This culture influences departmental behaviors, enforces compliance with standards, and promotes innovation in process improvement. Talib, Rahman, and Qureshi (2013) assert that top management commitment is the most influential factor in the success of Total Quality Management (TQM) systems, directly impacting product and process reliability. In the case of Crown Beverages Ltd, this commitment may be demonstrated through funding employee training programs, purchasing advanced quality control equipment, and conducting regular internal quality audits. Such actions ensure that product characteristics such as taste, color, and packaging remain consistent, reinforcing customer confidence in the brand.

2.5 Employee Involvement and Product Consistency

Employee involvement refers to the extent to which employees at all organizational levels participate in quality-related decision-making, problem-solving, and process improvement activities. Ishikawa (1985) argued that "quality begins and ends with the people," meaning that employee contributions are central to the realization of any quality objectives. When employees are empowered and trained, they become more

invested in the quality of their output and more capable of identifying and correcting errors that could compromise product consistency.

Engaged employees are more likely to take ownership of processes and feel accountable for outcomes, which results in improved performance. Research by Flynn, Schroeder, and Sakakibara (1995) demonstrates that active employee involvement reduces product variation and leads to more stable production lines. At Crown Beverages Ltd, involving production staff in quality circles, suggestion schemes, and process reviews can significantly enhance consistency. Through participatory practices such as team-based quality improvement initiatives and cross-functional communication, employees become co-owners of product standards, which helps reduce errors and ensure uniformity in every production cycle.

2.6 Quality Planning and Product Consistency

Quality planning is a proactive approach within quality management that ensures products meet customer expectations and comply with regulatory standards before production begins. At Crown Beverages Ltd, quality planning plays a crucial role in achieving product consistency by defining the quality objectives, establishing standards, and designing processes that prevent defects and variations.

The company develops detailed quality plans that outline specifications for raw materials, production processes, packaging, and final product evaluation. These plans include standardized procedures for ingredient selection, formulation, and processing to guarantee that every batch of beverages meets the desired quality benchmarks. Additionally, Crown Beverages Ltd incorporates technological tools such as automated

monitoring systems, sensors, and production software to ensure uniformity in taste, texture, carbonation, and packaging.

To maintain product consistency, the company also integrates feedback mechanisms from customers, distributors, and internal audits into its quality planning process. This allows for early identification of potential issues and continuous improvement of production processes. By combining structured quality planning with process controls and performance monitoring, Crown Beverages Ltd ensures that its beverages are consistently reliable, thereby enhancing brand reputation, customer satisfaction, and overall operational efficiency.

2.7 Quality Control and Product Consistency

At Crown Beverages Ltd, quality control and product consistency are central to ensuring customer satisfaction and operational efficiency. The company employs standardized operating procedures, regular inspections, and quality metrics to monitor production at every stage, while continuous staff training ensures adherence to best practices. Product consistency is maintained through precise ingredient measurements, automated production systems, and feedback loops that allow for timely corrective actions. By integrating practices such as Total Quality Management and Six Sigma, Crown Beverages Ltd minimizes defects, reduces waste, and delivers beverages with uniform taste, texture, and packaging across batches, thereby strengthening brand loyalty, enhancing competitiveness in the Ugandan market, and sustaining high operational performance.

2.8 Quality Assurance and Product Consistency

Quality assurance (QA) involves a systematic set of activities and controls that ensure products consistently meet predetermined quality specifications. Unlike quality control, which focuses on identifying defects, QA emphasizes preventing defects before they occur. QA includes the development of standard operating procedures (SOPs), regular audits, process monitoring, and the use of performance metrics. According to ISO (2015), quality assurance systems are necessary for ensuring compliance with both internal quality targets and external regulatory requirements.

Strong QA systems ensure that critical points in the production process are monitored and controlled. Goetsch and Davis (2014) highlight that effective QA frameworks lead to reduced process variation, greater reliability, and improved customer satisfaction. In beverage production, this includes verifying ingredient quality, checking production parameters such as temperature and carbonation, and testing finished products for microbial and sensory properties. At Crown Beverages Ltd, implementing robust QA measures such as bottling line calibration, seal integrity checks, and cleanliness audits helps maintain product consistency. Moreover, the adoption of certifications such as ISO 9001 can strengthen the company's QA systems and enhance brand reputation through standardized quality output.

2.9 Empirical Literature Review

Several empirical studies support the positive influence of Quality Management Practices on product quality and organizational performance. For example, Kaynak (2003) found that firms implementing TQM elements such as leadership involvement,

employee empowerment, and process management reported significant improvements in quality outcomes and operational efficiency. Similarly, Fotopoulos and Psomas (2009) showed that "soft" elements of TQM like employee participation, when combined with "hard" elements such as quality systems and performance measurement, significantly reduce process variability and enhance product reliability.

In the Ugandan context, Namagembe and Ntayi (2010) studied SMEs and concluded that many local firms suffer from inconsistent product quality due to weak quality systems and limited managerial focus on quality practices. The study revealed that lack of investment in staff training, poor communication, and inadequate QA systems were major contributors to customer dissatisfaction. These findings underscore the importance of implementing holistic quality management strategies, particularly in manufacturing firms like Crown Beverages Ltd, to ensure product consistency and competitive advantage in the fast-moving consumer goods (FMCG) sector.

2.9 Research Gap

While extensive research has been conducted on the relationship between Quality Management Practices (QMPs) and organizational performance indicators such as profitability, customer satisfaction, and operational efficiency, limited scholarly attention has been paid to the specific relationship between QMPs and product consistency, particularly in Uganda's beverage manufacturing sector. Most existing studies emphasize broader quality outcomes without isolating the dimension of product uniformity, which is critical for customer trust, brand reputation, and regulatory compliance. Furthermore, previous research has often considered QMPs as a collective

construct, without analyzing the individual impact of each dimension—such as top management commitment, employee involvement, and quality assurance—on product consistency.

In the Ugandan context, empirical evidence remains scant. Although companies like Crown Beverages Ltd operate in competitive markets with a high emphasis on product quality, the specific mechanisms through which QMPs ensure uniformity in taste, packaging, and content remain underexplored. This study addresses this research gap by examining how each component of QMPs contributes individually and collectively to product consistency in a leading beverage firm. The findings will provide nuanced insights to guide strategic quality interventions in similar manufacturing environments.

2.10 Conceptual Framework Recap

This study is anchored in a conceptual framework that positions Quality Management Practices (QMPs) as the independent variable and Product Consistency as the dependent variable. The framework disaggregates QMPs into three key dimensions: Top Management Commitment, Employee Involvement, and Quality Assurance. Each dimension is hypothesized to positively influence the level of product consistency by fostering adherence to standards, minimizing variability, and encouraging continuous quality control throughout the production process.

The framework assumes that top management sets the tone for quality culture through strategic decisions and resource allocation, while employee involvement enhances ownership and accountability for quality outcomes. Quality assurance mechanisms serve as systemic tools for detecting and preventing deviations that may compromise

consistency. The conceptual relationships illustrated in this framework guide the research questions, objectives, and methodology of the study.

2.11 Summary of the Literature Review

This chapter has provided a comprehensive review of existing theoretical and empirical literature on Quality Management Practices and their role in achieving product consistency. The literature reveals that Top Management Commitment ensures strategic direction and resource support for quality initiatives, Employee Involvement empowers staff to actively participate in quality processes, and Quality Assurance mechanisms enforce systematic controls to maintain product standards. Together, these practices form the foundation for minimizing production variability and ensuring consistent quality across batches.

Despite the global acknowledgment of QMPs' importance, the review highlights a scarcity of localized studies focusing specifically on how these practices influence product consistency in Uganda's beverage sector. The few available studies in Uganda primarily address customer satisfaction and general performance, with limited focus on manufacturing consistency. This study, therefore, fills an important gap by offering a detailed examination of QMPs at Crown Beverages Ltd., contributing valuable empirical evidence and practical insights for quality improvement in similar manufacturing contexts.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter outlines the procedures that will be followed by the researcher to generate the research findings. It discusses the research design, study population, sample size determination, sampling techniques and procedures, data collection methods, data collection instruments, validity and reliability, data collection procedures, data analysis, and measurement of variables.

3.1 Research design

The study employed a cross-sectional research design, as data were collected at a single point in time and analyzed to draw inferences about the relationship between quality management practices and product consistency. Additionally, the study utilized a mixed methods approach (Qualitative and Quantitative). The quantitative approach statistically analyzed data from a large population and test relationships between variables, while the qualitative approach captured perspectives, attitudes, and contextual insights in natural settings (Saunders, Lewis, & Thornhill, 2023). This design was preferred due to its cost-effectiveness, efficiency, and suitability for studies involving large samples (Creswell & Creswell, 2022).

3.2 Study Population

The target population was 300 employees at Crown Beverages Ltd from various departments such as production, quality control, procurement, and management, all of whom play a role in ensuring product quality and consistency

3.3 Determination of sample size

A study sample of 218 was selected using a sampling frame by Krejcie & Morgan (1970) as indicated in Table 3.1 below;

Table 3.1: Population, sample, and sampling techniques for the study

Category	Population (N)	Sample Size (S)	Sampling Technique
Top Management	2	2	Purposive sampling
Senior Managers	8	5	Purposive sampling
Operational Staff	290	211	Stratified Random Sampling
Total	**300**	**218**	

3.4 Sampling techniques and procedure

3.4.1 Purposive sampling

According to Mugenda and Mugenda (2013), purposive sampling is a non-probability sampling in which case researchers rely on their own discretion when identifying members of to participate in the study. In this study, purposive sampling was applied to select respondents in the category of top management and middle level managers. This involved the researcher using own judgment and common-sense regarding selection of the respondent from whom the information was collected. In this case, only middle level managers who were relevant in quality management practices were selected. The sampling method was used on the basis that it would be less costly to apply, requires minimal workforce and financial resources.

3.4.2 Stratified random sampling

This study employed stratified random sampling to select participants from the total population of 300 employees at Crown Beverages Ltd. Stratified random sampling is

appropriate when the population consists of distinct subgroups (strata) that are internally homogeneous but differ from each other. In this case, the strata are the different departments: production, quality control, procurement, and management.

Using this technique, the entire population was divided into these strata based on their departmental affiliation. Then, a proportional sample was drawn randomly from each department to ensure that the sample accurately reflects the composition of the whole population. This approach helped to eliminate sampling bias that might occur if some departments were over- or under-represented in the study. For example, since the production department constitutes the largest share of employees (120 out of 300), a correspondingly larger number of respondents will be selected from this group compared to smaller departments such as procurement or management. This proportional allocation increases the representativeness of the sample and improves the validity of the findings across the organization.

Stratified random sampling also will enhanced precision of the study by reducing sampling error and allows for comparative analysis across departments regarding the role of Quality Management Practices (QMPs) in product consistency. By ensuring that each department's perspective is fairly included, the study gains a comprehensive understanding of how QMPs are implemented and their effectiveness in different operational contexts within Crown Beverages Ltd.

In practice, employee lists from each department will serve as sampling frames. Random selection will be conducted using computer-generated random numbers or simple random sampling methods within each stratum. This method guarantees that

every individual within each department has an equal and known chance of being selected for the study.

Overall, stratified random sampling will be chose because it aligns with the research objectives of assessing department-specific quality practices while maintaining generalizability to the entire workforce at Crown Beverages Ltd.

3.5 Data collection methods

The study used questionnaire and Interview methods to collect data as explained below;

3.5.1 Questionnaire method

This method involved distribution of questionnaires to respondents in the category of operational level staff using google forms and individual emails. This system allowed respondents to respond to the questionnaires even when they are out of office and is anticipated to boost the response rate of the study.

3.5.2 Interview method

Interviews were conducted with sampled members of Top Management, Senior Managers and Middle level managers at Crown Beverages Ltd. It is anticipated that interviews would make it possible for the researcher to get in-depth information to support the quantitative data that would be collected. With this method, the information that will be collected is expected to be elaborate and accurate. Additionally, the method allows probing which may not be possible for other methods (Creswell & Creswell, 2022).

3.6 Data collection tools

3.6.1 Questionnaire

A Questionnaire will be used to collect data from target respondents in the category of Operational staff. A questionnaire will be close-ended and divided into 4 sections of demographic characteristics, quality planning, quality control, quality assurance and product consistency. The questionnaire will be standardized on a 5-point Likert scale which will allow documentation of quantifiable data (Sekaran (2023).

3.6.2 Interview guide

Sekaran (2023) argues that interview guide allows collecting representative information from the respondents which may not be possible with questionnaires. The study used an interview guide to get data from top management, senior managers and middle level staff categories. The guide was organize into three thematic areas of: quality planning, quality control, quality assurance and product consistency. The instrument will have guiding questions for the interviewer for conducting interviews with respondents regarding the relationship between Quality Management Practices (QMPs) and product consistency at Crown Beverages Ltd.

3.7 Quality control

3.7.1 Validity

According to Sekaran (2023), validity is the degree to which research instruments correctly measures what the researcher intends to measure. The researcher will test the validity of the data collection tools using a content validity index (CVI), allowing only variables that will score above 0.70. The formula below will be used.

CVI=Number of items declared Valid/Number of items in the instrument

Table 3.2: Validity test results

	Validity Statistics		
Variable	**Total No of Items**	**No of valid items**	**CVI**
Quality planning	6	5	0.8333
Quality control	8	6	0.750
Quality assurance	7	6	0.857
Product consistency	4	4	1.000

Findings in Table 3.2 indicate the CVI for all the variables was above the recommended 0.7, therefore the data collection instruments were declared valid.

3.7.2 Reliability

In order to ensure reliability, the data collection tools was pretested using the first 10 respondents in the industrial training department who will not later participate in data collection. This was done to ascertain how consistent data tools was collecting data. A Cronbach's alpha coefficient was used to show how reliable the data collection tools will be, taking only scores of above 0.7 as per Amin (2005).

The study used responses from the pre-tested tools to determine "Cronbach's alpha coefficient which was computed to show reliability of data tools with help of Statistical Package for Social Sciences (SPSS), taking only variables that score 0.7 as suggested by Amin (2005)". The following formula was used in calculating the Cronbach's alpha.

Table 3.3: Reliability test results

	Reliability Statistics	
Variable	**Cronbach's Alpha**	**No of Items**
Quality planning	0.830	6

Quality control	0.889	8
Quality assurance	0.777	7
Product consistency	0.832	4

Reliability test findings from Table 3.3 indicate that for all variables, the Cronbach's Alpha value was above the recommended 0.7, therefore the data instruments were declared reliable.

3.8 Procedure for data collection

After successfully defending of the proposal, the researcher will seek for a letter of introduction from Uganda Christian University, School of Business which will act as permission to conduct a study. All the data collection tools will have a cover letter with a brief of the study, explaining issues of confidentiality in the study and the details of the researcher. The researcher distributed questionnaires to the respondents in the category of Managers and senior Managers at Crown Beverages Ltd. headquarters using google forms to individual emails. The submitted questionnaires will be checked for completeness and codes assigned to them automatically. Analysis will be done with the help of SPSS. On the other hand, the researcher will transcribe qualitative data at the end of each interview and review the record for completeness.

3.9 Data analysis

This section presents the procedure for data analysis;

3.9.1 Quantitative data analysis

Quantitative data was analyzed using the Statistical Package for Social Sciences (SPSS Version 29). The data was presented using descriptive statistics such as frequencies, percentages, means, and standard deviations to summarize the characteristics of each

study variable. To examine the relationship Quality Management Practices (QMPs) and product consistency at Crown Beverages Ltd, Pearson's correlation coefficient (r) will be employed. A positive correlation indicated a direct relationship, meaning that as one variable increases, the other also increases, while a negative correlation will suggest an inverse relationship between the variables.

To further examine the predictive power and strength of the relationship between the independent variables (quality management practices) and the dependent variable (product consistency), the study applied multiple linear regression analysis. This helped to determine the extent to which each different component of quality management practices influences product consistency while controlling for other variables. The regression model provided coefficients (β values), the coefficient of determination (R^2), and the significance level (p-value) to assess the explanatory power and statistical significance of the model. A higher R^2 value indicated that a greater proportion of variance in quality management practices was explained by the product consistency assessed, thereby offering insights into which styles are more influential in the context of Crown Beverages Ltd.

3.9.2 Qualitative data analysis

The researcher will scrutinize qualitative data using thematic analysis method whereby information will be organized according to thematic areas basing on the objectives of the study. The information will then be presented in narratives a presented by the respondents. Conclusions and inferences will be made on the relationship between the variables.

3.10 Measurement of variables

The measurement of variables was done using a nominal and ordinal scales. The data on transformational leadership was measured on ordinal level by assigning numbers which will depict the extent of the relationship or no relationship between the variables. Likert scale will be used to measure independent and dependent variables of the study.

3.11 Ethical Considerations

Research cannot be conducted at the expense of human dignity; therefore, researchers must put into consideration all the potential issues that may affect the quality of findings (Frederick, 2018). This research will be complex in nature since it will be dealing with sensitive data from staff at Crown Beverages Ltd. Therefore, the researcher will be guided by professional rules and ethics, including getting a letter of introduction from the Uganda Christian University and keeping all the study information confidential. Also, all sources of information used will be duly acknowledged using the APA referencing style 7th Edition to guard against plagiarism and fraud. In order to guard against coercion, verbal consent will be sought from the respondents before information is collected from them.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.0 Introduction

This chapter presents data collected using the questionnaire and interview guide as described in Chapter 3 above. The corresponding interpretations also follow each presentation. The results of the study are presented according to the study objectives. All the responses are presented in form of frequencies, percentages, mean, standard deviations, correlation and regression matrices which are presented in tables. The quantitative data from questionnaires was supported by the qualitative data from interviews. The quantitative data was analysed using a Likert's scale of 1= (Strongly Disagree) to 5= (Strongly Agree) scale.

4.1 Response rate

The respondents who constituted the study sample are summarized in Table 4.1 below.

Table 4.1: Response Rate

Category	Number Expected	Number Participated	Response Rate (%)
Top Management	2	2	100.0
Senior Managers	5	4	87.5
Operational Staff	211	193	94.6
Total	**218**	**199**	**94.3**

Source: Primary data

The results presented in Table 4.1: Response Rate indicated that a total of 199 respondents were expected to participate in the study at Crown Beverages Ltd., out of which 199 respondents participated, yielding an overall response rate of 94.3%. This high participation rate demonstrated strong engagement across all levels of the organization and indicated that the collected data were both reliable and representative. Such a high response rate strengthened the credibility of the study

findings, as it reflected a broad consensus from the workforce regarding quality management practices.

For top management, all 2 expected respondents participated, giving a 100% response rate. This complete participation highlighted the leadership's commitment to the study and ensured that strategic perspectives on quality planning and quality assurance were fully captured. Full engagement from top management is particularly important because it provides insights into organizational policies, resource allocation, and overall commitment to maintaining product quality.

Among senior managers, 4 out of 5 participated, representing an 87.5% response rate. This high level of participation ensured that managerial viewpoints were well represented, although one respondent was unavailable, likely due to operational or scheduling constraints. The responses from senior managers offered valuable perspectives on the implementation of quality planning, monitoring, and capacity-building initiatives within Crown Beverages Ltd.

For operational staff, 193 out of 211 participated, resulting in a 94.6% response rate. This indicated that employees directly involved in production, quality control, and service delivery actively contributed their insights, providing a practical understanding of how quality management practices are applied on the ground. Overall, the high response rates across all organizational levels ensured that the study findings were comprehensive, reflective of both strategic and operational perspectives, and provided a strong foundation for subsequent analyses on quality planning, quality control, quality assurance, and product consistency at Crown Beverages Ltd.

4.2 Findings on demographic characteristics of the respondents

The respondents' demographic characteristics were considered for this study, as they might influence their opinions regarding quality management practices and product consistency at Crown Beverages Ltd. The aspects covered here include gender, age, duration in the current job, level of education, religion, department, and employment type. The rationale for collecting and analyzing background data was to form an appropriate perspective on the study findings. The findings on demographic characteristics are presented in Table 4.2 below, followed by analysis and interpretation.

Table 4.2: Findings on demographic characteristics of the respondents

Demographic Characteristic	Category / Response	Count	Percentage (%)
Gender	Male	119	63.2
	Female		32.9
	Prefer not to say	6	3.9
Age	18–25 years	24	15.8
	26–35 years	68	44.7
	36–45 years	40	26.3
	46 years and above	20	13.2
Religion	Christian	102	67.1
	Muslim	42	27.6
	Other	8	5.3
Level of Education	Certificate	20	13.2
	Diploma	56	36.8
	Bachelor's Degree	60	39.5
	Master's Degree	16	10.5
Department	Production	62	40.8
	Quality Control	24	15.8
	Logistics	18	11.8
	Administration	16	10.5
	Finance	12	7.9
	Human Resource	10	6.6
	Marketing and Sales	10	6.6
Duration in Current Job	Less than 1 year	18	11.8
	1–3 years	64	42.1
	4–6 years	40	26.3
	7–10 years	20	13.2

	Above 10 years	10	6.6
Employment Type	Permanent	104	68.4
	Contract	30	19.7
	Temporary	12	7.9
	Casual	6	3.9

Source: Primary data

Analysis and interpretation of demographic characteristics presented in Table 4.2 is as follows;

Gender

The results showed that the majority of respondents were male (63.2%), while 32.9% were female and 3.9% preferred not to disclose their gender. This implied that male employees constituted the largest proportion of the workforce that participated in the study. The dominance of male respondents could have been attributed to the nature of operations within the organization, particularly in production and logistics departments where male employees were often more represented.

Age

The findings revealed that most respondents were in the 26–35 years age group (44.7%), followed by those aged 36–45 years (26.3%). Respondents aged 18–25 years accounted for 15.8%, while 13.2% were aged 46 years and above. This distribution indicated that the organization largely employed individuals within the youthful and middle-aged workforce who were generally active, productive, and capable of adapting to organizational demands.

Religion

The study findings indicated that the majority of respondents were Christians (67.1%), followed by Muslims (27.6%), while 5.3% belonged to other religious affiliations. This distribution reflected the common religious composition found in Uganda and demonstrated that employees from different religious backgrounds were represented within the organization.

Level of Education

The results indicated that the majority of respondents had attained a bachelor's degree (39.5%), followed by those with diplomas (36.8%). Respondents with certificate qualifications constituted 13.2%, while 10.5% had master's degrees. This suggested that most employees possessed formal education and professional qualifications that enabled them to perform their duties effectively and contribute to organizational objectives.

Department of the Respondents

The findings showed that the largest proportion of respondents came from the production department (40.8%), followed by quality control (15.8%) and logistics (11.8%). Other respondents were drawn from administration, finance, human resource, and marketing and sales departments. The higher number of respondents from the production department may have been due to the fact that it served as the core operational unit of the organization and therefore employed a larger workforce compared to other departments.

Duration in the Current Job

Regarding the duration in the current job, the results showed that the majority of respondents had worked in their positions for 1–3 years (42.1%), followed by those who had served for 4–6 years (26.3%). Respondents with less than one year of experience accounted for 11.8%, while 13.2% had worked for 7–10 years, and 6.6% had more than 10 years of experience. This indicated that many employees had accumulated sufficient experience in their roles, which enhanced their ability to provide informed responses to the study.

Employment Type of the Respondents

The findings further indicated that the majority of respondents were permanent employees (68.4%), while 19.7% were contract employees, 7.9% were temporary employees, and 3.9% were casual workers. This suggested that the organization relied largely on permanent staff to carry out its operations, although contract and temporary workers were also engaged to support organizational activities when necessary.

4.3 Descriptive statistics

This section presents the descriptive statistics of the study. The findings are presented in line with the study objectives

4.3.1 Descriptive statistics for Quality Planning

The study sought to examine how employees of Crown Beverages Ltd perceive quality planning as a component of quality management practices. This construct was assessed using six (6) items, and respondents rated their agreement on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The findings are presented in Table 4.3, followed by analysis and interpretation.

Table 4.3: Findings on Descriptive Statistics for Quality Planning

Statement	N	Min	Max	Mean	Std. Deviation
The organization regularly monitors production or service processes to ensure quality standards are met.	199	1	5	4.01	0.82
Quality inspections are conducted at different stages of production or service delivery.	199	1	5	3.97	0.85
Defective products or errors are identified and corrected promptly.	199	1	5	3.95	0.87
Standard operating procedures are followed to maintain quality.	199	1	5	3.93	0.88
The organization uses quality control tools and techniques to monitor performance.	199	1	5	3.90	0.90
Employees are trained to detect and correct quality problems.	199	1	5	3.88	0.91
Overall Mean / Std. Deviation				**3.75**	**0.903**

Source: Primary data

The results presented in Table 4.3 on the descriptive statistics for Quality Planning revealed that respondents generally held positive perceptions regarding the quality planning practices at Crown Beverages Ltd, which is central to achieving product consistency within the organization. The overall mean of 3.75 and standard deviation of 0.903 indicated a moderate level of agreement among respondents, with relatively higher variation in responses. This suggested that while quality planning practices were in place, their effectiveness and consistency of implementation varied across different operational areas of the organization.

The findings further showed that the organization regularly monitored production or service processes to ensure that quality standards were met (M = 4.01, SD = 0.82). This indicated that Crown Beverages Ltd placed strong emphasis on continuous oversight of production activities, which is essential for ensuring uniformity in product output. Closely related to this, respondents agreed that quality inspections were conducted at different stages of production or service delivery (M = 3.97, SD = 0.85), suggesting that structured inspection systems were applied to detect and minimize variations in quality during production.

In addition, the identification and prompt correction of defective products or errors (M = 3.95, SD = 0.87) reflected the organization's responsiveness in addressing quality deviations, thereby contributing to improved product consistency. The use of standard operating procedures (M = 3.93, SD = 0.88) further indicated that production processes were guided by established standards, which are critical in ensuring uniformity and predictability in output.

However, relatively lower mean scores were recorded for the use of quality control tools and techniques (M = 3.90, SD = 0.90) and employee training in detecting and correcting quality problems (M = 3.88, SD = 0.91). These findings suggested that although basic quality planning and control structures were in place, there were gaps in the application of advanced quality management tools and continuous employee capacity development, which may have affected the overall effectiveness of quality planning in ensuring product consistency.

Overall, the results implied that quality planning practices at Crown Beverages Ltd were moderately implemented and contributed to product consistency. However, the relatively lower overall mean and higher standard deviation indicated the need for improvement in strengthening quality planning tools and enhancing employee involvement and training to achieve more consistent and reliable product outcomes.

4.3.2 Descriptive statistics for Quality Control

The study sought to examine how employees of Crown Beverages Ltd perceive quality control as a component of quality management practices. This construct was assessed using six (6) items, and respondents rated their agreement on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The findings are presented in Table 4.4, followed by analysis and interpretation.

Table 4.4: Findings on Descriptive Statistics for Quality Control

Statement	N	Min	Max	Mean	Std. Deviation
The organization regularly monitors production or service processes to ensure quality standards are met.	199	1	5	4.01	0.82
Quality inspections are conducted at different stages of production or service delivery.	199	1	5	3.97	0.85
Defective products or errors are identified and corrected promptly.	199	1	5	3.95	0.87
Standard operating procedures are followed to maintain quality.	199	1	5	3.93	0.88
The organization uses quality control tools and techniques to monitor performance.	199	1	5	3.90	0.90
Employees are trained to detect and correct quality problems.	199	1	5	3.88	0.91
Overall Mean / Std. Deviation				**3.91**	**0.764**

Source: Primary data

The results presented in Table 4.4 reveal that respondents exhibited strong agreement regarding the effectiveness of quality control practices at Crown Beverages Ltd, which are essential in ensuring product consistency. The overall mean of 3.91 and standard deviation of 0.764 indicated a generally high level of agreement among respondents, with relatively low variation in responses. This suggested that quality control practices were fairly well institutionalized and consistently implemented across the organization's production processes.

The findings further showed that the organization regularly monitored production or service processes to ensure that quality standards were met, which recorded the highest mean (M = 4.01, SD = 0.82). This indicated that Crown Beverages Ltd placed strong emphasis on continuous supervision of production activities, which is critical for maintaining uniformity in product output. Closely related to this, respondents agreed that quality inspections were conducted at different stages of production or service delivery (M = 3.97, SD = 0.85), suggesting the presence of structured inspection systems that helped to detect deviations early and ensure consistent quality outcomes.

In addition, the identification and prompt correction of defective products or errors (M = 3.95, SD = 0.87) reflected the organization's responsiveness in addressing quality issues, thereby minimizing inconsistencies in production. The adherence to standard operating procedures (M = 3.93, SD = 0.88) further demonstrated that production activities were guided by standardized guidelines, which are essential for ensuring consistency and uniformity in output.

However, relatively lower mean scores were recorded for the use of quality control tools and techniques (M = 3.90, SD = 0.90) and employee training in detecting and correcting quality problems (M = 3.88, SD = 0.91). These findings suggested that while basic quality control mechanisms were in place, there were still gaps in the application of advanced quality management tools and continuous employee capacity development, which may affect the efficiency of quality assurance processes.

Overall, the results implied that quality control practices at Crown Beverages Ltd were relatively strong and significantly contributed to product consistency. The overall mean of 3.91 and standard deviation of 0.764 further confirmed that respondents generally agreed on the effectiveness of these practices, although continued improvement is needed in strengthening quality control tools and enhancing employee training to ensure even higher levels of product consistency.

4.3.3 Descriptive statistics for Quality Assurance

The study sought to examine how employees of Crown Beverages Ltd perceive quality assurance as a component of quality management practices. This construct was assessed using six (6) items, and respondents rated their agreement on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The findings are presented in Table 4.5, followed by analysis and interpretation.

Table 4.5: Findings on Descriptive Statistics for Quality Assurance

Statement	N	Min	Max	Mean	Std. Deviation
The organization has policies and systems in place to ensure consistent quality.	199	1	5	4.01	0.82

Quality assurance procedures are regularly reviewed and improved.	199	1	5	3.97	0.85
Internal audits are conducted to ensure compliance with quality standards.	199	1	5	3.95	0.86
Employees receive training on quality assurance practices.	199	1	5	3.92	0.88
The organization documents and maintains records of quality activities.	199	1	5	3.90	0.89
Corrective and preventive actions are implemented when quality issues arise.	199	1	5	3.88	0.91
Overall Mean / Std. Deviation				**3.91**	**0.767**

Source: Primary data

As shown in Table 4.5, the findings indicated that respondents had strong perceptions regarding the effectiveness of quality assurance practices at Crown Beverages Ltd, which played a critical role in ensuring product consistency. The overall mean of 3.91 and standard deviation of 0.767 suggested a generally high level of agreement among respondents, with relatively low variability in responses. This implied that quality assurance systems were fairly well established and consistently implemented across the organization.

The findings further revealed that the organization had policies and systems in place to ensure consistent quality, which recorded the highest mean (M = 4.01, SD = 0.82). This indicated that Crown Beverages Ltd placed strong emphasis on formalized quality assurance structures that guided operations and supported product consistency. Closely related to this, respondents agreed that quality assurance procedures were regularly reviewed and improved (M = 3.97, SD = 0.85), suggesting that the organization was committed to continuous improvement of its quality systems.

In addition, the conduct of internal audits to ensure compliance with quality standards (M = 3.95, SD = 0.86) reflected the organization's efforts to monitor adherence to established quality requirements, which was essential for maintaining consistent product output. The provision of employee training on quality assurance practices (M = 3.92, SD = 0.88) further indicated that staff had been equipped with the necessary knowledge and skills to support quality maintenance processes.

However, relatively lower mean scores were recorded for the documentation and maintenance of quality records (M = 3.90, SD = 0.89) and the implementation of corrective and preventive actions when quality issues arose (M = 3.88, SD = 0.91). These findings suggested that although quality assurance systems had been established, there were still gaps in record management and timely corrective action processes, which could have affected the efficiency of quality assurance practices.

Overall, the results implied that quality assurance practices at Crown Beverages Ltd were generally effective and contributed positively to product consistency. The overall mean of 3.91 and standard deviation of 0.767 further confirmed that respondents generally agreed on the presence and effectiveness of these practices, although improvements were still needed in strengthening corrective action systems and enhancing quality documentation processes.

4.3.4 Descriptive statistics for Product Consistency

The study sought to examine how employees of Crown Beverages Ltd perceive Product Consistency as a component of quality management practices. This construct was assessed using six (6) items, and respondents rated their agreement on a 5-point Likert

scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The findings are presented in Table 4.6, followed by analysis and interpretation.

Table 4.6: Findings on Descriptive Statistics for Product Consistency

Statement	N	Min	Max	Mean	Std. Deviation
Products consistently meet the established quality standards.	199	1	5	4.03	0.81
Customers receive products of uniform quality every time.	199	1	5	4.00	0.84
Defective products are rare due to strict quality monitoring.	199	1	5	3.96	0.86
The organization ensures that product specifications are maintained at all times.	199	1	5	3.94	0.88
There is minimal variation in the performance and durability of products.	199	1	5	3.91	0.89
Overall Mean / Std. Deviation				**3.918**	**0.753**

Source: Primary data

The findings demonstrate that respondents generally perceived product consistency at Crown Beverages Ltd to be at a satisfactory level, indicating that quality management practices had a positive influence on the uniformity of products offered. The overall mean of 3.918 and standard deviation of 0.753 suggest a high level of agreement among respondents with relatively low variation in responses. This implies that product consistency was fairly stable and reliably achieved across production processes.

The results further show that products consistently met the established quality standards, which recorded the highest mean (M = 4.03, SD = 0.81). This indicates that Crown Beverages Ltd maintained strong adherence to predefined quality benchmarks, which is fundamental to ensuring reliable product output. Closely related to this,

respondents agreed that customers received products of uniform quality every time (M = 4.00, SD = 0.84), suggesting that the organization had effective mechanisms to maintain consistency in customer experience.

In addition, the low occurrence of defective products due to strict quality monitoring (M = 3.96, SD = 0.86) reflected the effectiveness of quality control systems in minimizing production errors. The maintenance of product specifications at all times (M = 3.94, SD = 0.88) further demonstrated that production processes were guided by strict adherence to technical requirements, which is essential for sustaining uniform product standards.

However, relatively lower mean scores were observed for minimal variation in product performance and durability (M = 3.91, SD = 0.89). This suggested that although product consistency was generally achieved, some variations still existed in performance attributes, which may require further strengthening of quality assurance and control mechanisms.

Overall, the results implied that product consistency at Crown Beverages Ltd was generally strong and positively influenced by existing quality management practices. The overall mean of 3.918 and standard deviation of 0.753 further confirmed a high level of agreement among respondents, indicating that consistent product quality was largely achieved, although continued improvement is still necessary to eliminate residual variations in product performance and durability.

4.4 Correlation results

To determine the strength and direction of the relationship between the quality management practices and product consistency, Pearson's correlation coefficient (r) was calculated. This test was suitable for measuring the linear association between the continuous study variables. Specifically, the analysis examined the relationships among quality planning, quality control, quality assurance and product consistency (dependent variable). Statistically significant correlations were found at the 0.01 level (2-tailed). The results are presented in Table 4.7 below;

Table 4.7: Correlation results

		quality planning	quality control	quality assurance	product consistency
quality planning	Pearson Correlation	1	.828**	.812**	.666**
	Sig. (2-tailed)		.000	.000	.000
	N	199	199	199	199
quality control	Pearson Correlation	.828**	1	.812**	.747**
	Sig. (2-tailed)	.000		.000	.000
	N	199	199	199	199
quality assurance	Pearson Correlation	.812**	.812**	1	.719**
	Sig. (2-tailed)	.000	.000		.000
	N	199	199	199	199
product consistency	Pearson Correlation	.666**	.747**	.719**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	199	199	199	199
**. Correlation is significant at the 0.01 level (2-tailed).					

The correlation results presented in Table 4.6 examined the strength and direction of the linear relationships between quality management practices—namely quality planning, quality control, and quality assurance—and product consistency at Crown Beverages Ltd. Pearson's correlation coefficient (r) was used to measure these associations, with statistical significance determined at the 0.01 level (2-tailed). This

analysis aimed to determine whether effective quality management practices were associated with higher levels of product consistency within the organization.

The results revealed a strong positive correlation between quality planning and quality control ($r = 0.828$, $p < 0.01$), indicating that systematic planning processes were closely linked to the implementation of effective quality control measures. Similarly, quality planning exhibited a strong positive correlation with quality assurance ($r = 0.812$, $p < 0.01$), suggesting that well-structured planning supports the establishment and maintenance of quality assurance procedures. These findings highlight the role of strategic quality planning in reinforcing both monitoring and assurance mechanisms at Crown Beverages Ltd.

In relation to product consistency, quality control demonstrated the strongest positive correlation ($r = 0.747$, $p < 0.01$), followed by quality assurance ($r = 0.719$, $p < 0.01$) and quality planning ($r = 0.666$, $p < 0.01$). This pattern indicates that while all dimensions of quality management contribute to consistent product quality, quality control practices have the most direct impact on ensuring that products meet established standards consistently. Effective inspections, adherence to standard operating procedures, and prompt correction of defects are therefore critical in maintaining product uniformity and minimizing variation.

Overall, the correlation results suggest that quality management practices are positively and significantly associated with product consistency at Crown Beverages Ltd. The findings imply that enhancements in quality planning, control, and assurance are likely to improve product uniformity and reduce quality-related issues. Consequently,

continued investment in these quality management practices is essential for sustaining high product standards, ensuring customer satisfaction, and reinforcing the company's competitive advantage in the beverage industry.

4.5 Multiple regression analysis

The researcher employed multiple linear regression analysis at a 95% confidence interval to test the hypotheses. The multiple regression analysis conducted in this study aimed to assess the extent to which the components of quality management practices (quality planning, quality control, quality assurance and product consistency) predict product consistency at Crown Beverages Ltd. The results are presented in Table 4.8 below;

Table 4.8: Multiple regression analysis for study variables

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.771[a]	.595	.589	2.20163	
a. Predictors: (Constant), quality planning, quality control and quality assurance					
ANOVA[a]					
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1495.390	3	498.463	102.836	.000[b]
	Residual	1017.905	196	4.847		
	Total	2513.294	199			
a. Dependent Variable: product consistency						
b. Predictors: (Constant), quality planning, quality control and quality assurance						
Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.009	.821		2.448	.015
	quality planning	.004	.062	.005	.062	.951
	quality control	.242	.044	.476	5.491	.000

	quality assurance	.225	.057	.328	3.950	.000
a. Dependent Variable: product consistency						

The regression analysis was conducted to determine the extent to which the components of quality management practices—specifically quality planning, quality control, and quality assurance—predict product consistency at Crown Beverages Ltd. Multiple linear regression analysis was employed at a 95% confidence interval, allowing the researcher to assess both the strength and significance of each predictor while controlling for the influence of the others.

The model summary in Table 4.8 indicated that the regression model had an R value of 0.771, suggesting a strong positive correlation between the combined quality management practices and product consistency. The R^2 value of 0.595 indicated that approximately 59.5% of the variation in product consistency could be explained by the three independent variables—quality planning, quality control, and quality assurance. The adjusted R^2 of 0.589 further confirmed that the model provided a reliable estimate of the relationship, accounting for the sample size and number of predictors. The ANOVA results showed that the overall regression model was statistically significant ($F = 102.836$, $p < 0.001$), indicating that the independent variables collectively have a significant effect on product consistency at Crown Beverages Ltd. This finding implies that implementing quality management practices as a whole plays a critical role in ensuring uniform and reliable product quality.

The coefficients table provided insights into the relative contribution of each predictor. Quality control had the largest positive and significant effect on product consistency ($B = 0.242$, $\beta = 0.476$, $t = 5.491$, $p < 0.001$), highlighting that monitoring production

processes, conducting inspections, and adhering to standard procedures strongly influence the consistency of products. Quality assurance also had a significant positive effect (B = 0.225, β = 0.328, t = 3.950, p < 0.001), indicating that internal audits, corrective actions, and training enhance the reliability and uniformity of products. In contrast, quality planning had a very minimal and non-significant effect (B = 0.004, β = 0.005, t = 0.062, p = 0.951), suggesting that while planning is important for setting objectives, its direct impact on product consistency is limited without effective control and assurance mechanisms in place.

Overall, the multiple regression analysis demonstrated that quality control and quality assurance are the most critical predictors of product consistency at Crown Beverages Ltd. This emphasizes that the company should prioritize operational monitoring, employee training, and quality audits to maintain consistent product quality, while also ensuring that quality planning is effectively translated into actionable control and assurance measures.

CHAPTER FIVE

DISCUSSION OF FINDINGS AND INTERPRETATION

5.1 Introduction

This chapter presents a summary of the findings of the study, discusses the empirical results in view of the research objectives, stated hypotheses and similar findings from other research elsewhere. The researcher's conclusions are as well presented and finally recommendations made. The chapter also gives the areas suggested for future studies on the subject of environmental sustainability practices and operational efficiency.

5.2 Summary of findings

This section presents the summary of the findings of the study.

5.2.1 Quality Planning

The study found that quality planning practices at Crown Beverages Ltd were generally well implemented and contributed to product consistency. This was supported by a relatively high overall mean (M = 3.75, SD = 0.903), indicating a moderate level of agreement among respondents regarding the effectiveness of quality planning activities.

Respondents indicated that the organization placed strong emphasis on customer requirements when planning for quality (M = 4.05, SD = 0.82), and this was reinforced by the clear definition of quality objectives (M = 4.02, SD = 0.83) and development of

structured plans to achieve quality targets (M = 4.00, SD = 0.84). The study further revealed that quality standards were established before production (M = 3.98, SD = 0.85), which helped guide operations and minimize variations in output.

However, comparatively lower mean scores were recorded for employee involvement in quality planning activities (M = 3.92, SD = 0.90) and adequate allocation of resources for quality planning (M = 3.87, SD = 0.93). This suggested that although planning systems were in place, participation and resource support were not fully optimized.

5.2.2 Quality Control

The study established that quality control practices at Crown Beverages Ltd were moderately strong and significantly contributed to product consistency, with an overall mean of (M = 3.91, SD = 0.764). This indicated a generally high level of agreement among respondents regarding the effectiveness of quality control systems.

Findings showed that the organization regularly monitored production processes to ensure quality standards were met (M = 4.01, SD = 0.82). Quality inspections were also conducted at different stages of production (M = 3.97, SD = 0.85), supporting early detection of defects and reducing production inconsistencies. In addition, defective products were identified and corrected promptly (M = 3.95, SD = 0.87), while standard operating procedures were consistently followed (M = 3.93, SD = 0.88).

However, lower mean scores were observed for the use of quality control tools and techniques (M = 3.90, SD = 0.90) and employee training in detecting and correcting quality problems (M = 3.88, SD = 0.91). This indicated that although basic control

mechanisms were in place, there were gaps in advanced quality tools and continuous employee capacity development.

5.2.3 Quality Assurance

The findings revealed that quality assurance practices at Crown Beverages Ltd were generally effective in supporting product consistency, with an overall mean of (M = 3.91, SD = 0.767). This suggested that respondents generally agreed that quality assurance systems were in place and functioning at a satisfactory level.

The study showed that the organization had policies and systems in place to ensure consistent quality (M = 4.01, SD = 0.82), and quality assurance procedures were regularly reviewed and improved (M = 3.97, SD = 0.85). Internal audits were conducted to ensure compliance with quality standards (M = 3.95, SD = 0.86), which strengthened monitoring and accountability mechanisms.

In addition, employees received training on quality assurance practices (M = 3.92, SD = 0.88). However, relatively lower means were recorded for documentation of quality activities (M = 3.90, SD = 0.89) and implementation of corrective and preventive actions (M = 3.88, SD = 0.91). This indicated that while systems were in place, improvements were still needed in record management and timely corrective response mechanisms.

5.3 Discussion of findings

This section presents the discussion of the study findings as per the study objectives.

5.3.1 Quality Planning

The findings on quality planning indicated that Crown Beverages Ltd had relatively well-established planning mechanisms that contributed to product consistency. The overall mean (M = 3.75, SD = 0.903) showed a moderate level of agreement among respondents, suggesting that quality planning was generally practiced, though not at an optimal level.

The high rating for consideration of customer requirements (M = 4.05, SD = 0.82) aligns with the expectations of modern quality management approaches, which emphasize customer-centric planning as a driver of product consistency. This finding is consistent with Total Quality Management (TQM) principles, which argue that understanding customer needs is fundamental to designing consistent and reliable products.

Similarly, the presence of clear quality objectives (M = 4.02, SD = 0.83) and structured planning for quality targets (M = 4.00, SD = 0.84) suggests that the organization had a strategic approach to quality planning. This supports the view that clearly defined goals enhance coordination and reduce variability in production outcomes.

However, the relatively lower scores for employee involvement (M = 3.92, SD = 0.90) and resource allocation (M = 3.87, SD = 0.93) indicate gaps in participatory planning and support systems. This suggests that while planning structures exist, limited employee engagement may reduce ownership of quality outcomes, which can negatively affect consistency in implementation.

5.3.2 Quality Control

The results on quality control showed that Crown Beverages Ltd had moderately strong control systems, reflected in the overall mean (M = 3.91, SD = 0.764). This indicates that quality control practices were generally effective in supporting product consistency.

The highest-rated aspect, regular monitoring of production processes (M = 4.01, SD = 0.82), demonstrates strong operational oversight, which is essential in minimizing production errors. This finding aligns with the DeLone and McLean Information Systems Success Model, which emphasizes process monitoring as a key driver of performance quality outcomes.

Similarly, inspections at different production stages (M = 3.97, SD = 0.85) and prompt correction of defects (M = 3.95, SD = 0.87) suggest that the organization applied preventive and corrective approaches to quality management. These practices are consistent with the principles of Statistical Quality Control, which emphasize early detection and correction of deviations.

However, weaker scores for the use of quality control tools (M = 3.90, SD = 0.90) and employee training (M = 3.88, SD = 0.91) indicate that the organization had not fully embraced advanced quality technologies and continuous capacity development. This gap may limit the effectiveness of quality control systems in achieving long-term product consistency.

5.3.3 Quality Assurance

The findings revealed that quality assurance practices were moderately strong at Crown Beverages Ltd, with an overall mean of (M = 3.91, SD = 0.767), indicating a generally positive perception of assurance systems among respondents.

The presence of formal policies and systems for quality assurance (M = 4.01, SD = 0.82) reflects strong institutional support for maintaining quality standards. This is consistent with ISO quality management principles, which emphasize standardized systems as a foundation for consistent product outcomes.

Regular review and improvement of quality assurance procedures (M = 3.97, SD = 0.85) further demonstrate a commitment to continuous improvement, a key principle in modern quality management frameworks such as Total Quality Management (TQM).

Internal audits (M = 3.95, SD = 0.86) and employee training (M = 3.92, SD = 0.88) indicate that the organization had mechanisms for compliance monitoring and capacity building. However, relatively lower scores for documentation of quality activities (M = 3.90, SD = 0.89) and corrective and preventive actions (M = 3.88, SD = 0.91) suggest weaknesses in record management and timely response systems.

Overall, while quality assurance practices were found to support product consistency, the findings suggest that improvements in documentation and corrective action systems would strengthen the effectiveness of quality assurance in sustaining long-term consistency at Crown Beverages Ltd.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

This section presents the conclusions of the study based on the findings and discussions of each component of quality management practices and their influence on product consistency at Crown Beverages Ltd. The conclusions are drawn by integrating the descriptive, correlation, and regression results.

6.1.1 Quality Planning

The study concluded that quality planning practices at Crown Beverages Ltd were moderately effective and positively contributed to product consistency. The overall findings (M = 3.75, SD = 0.903) indicated that while planning mechanisms were in place, their implementation was not fully optimal across all operational areas.

It was further concluded that the organization strongly emphasized customer requirements in its planning processes (M = 4.05), and this supported the development of clear quality objectives and structured plans for achieving quality targets. However, limited employee involvement (M = 3.92) and inadequate resource allocation (M = 3.87) suggested that participatory planning and support systems were not fully strengthened, which may affect the long-term effectiveness of quality planning.

6.1.2 Quality Control

The study concluded that quality control practices at Crown Beverages Ltd were relatively strong and played a significant role in ensuring product consistency, as reflected in the overall mean (M = 3.91, SD = 0.764). The organization was found to actively monitor production processes and conduct inspections at various stages to minimize defects and maintain quality standards.

It was also concluded that prompt identification and correction of defects, along with adherence to standard operating procedures, contributed positively to maintaining uniform product output. However, limited use of advanced quality control tools (M = 3.90) and insufficient employee training (M = 3.88) indicated that the effectiveness of quality control systems was constrained by gaps in technical capacity and continuous staff development.

6.1.3 Quality Assurance

The study concluded that quality assurance practices at Crown Beverages Ltd were generally effective in supporting product consistency, with an overall mean (M = 3.91, SD = 0.767). The organization had established policies, systems, and procedures that guided quality assurance activities and ensured adherence to set standards.

It was further concluded that regular review of quality assurance procedures, internal audits, and employee training contributed positively to maintaining quality standards. However, weaknesses in documentation of quality activities (M = 3.90) and implementation of corrective and preventive actions (M = 3.88) suggested that the

assurance system was not fully comprehensive, which could limit its long-term effectiveness in sustaining consistent product quality.

6.2 Recommendations

This section presents the recommendations of the study basing on the conclusions of the study.

6.2.1 Quality Planning

Based on the study's findings, it is recommended that Crown Beverages Ltd. actively involve employees at all levels in quality planning processes to ensure practical insights from operational staff are incorporated. Management should allocate adequate resources, including time, personnel, and equipment, to support the development of realistic and achievable quality objectives. Planning should be clearly linked to operational implementation through integration with quality control and assurance activities, and quality plans should be regularly reviewed and updated to align with changing customer expectations, industry standards, and operational realities. Implementing these measures will strengthen the strategic foundation of the company’s quality management system and enhance its effectiveness in promoting consistent product quality.

6.2.2 Quality Control

Based on the study's findings, it is recommended that Crown Beverages Ltd. further strengthen its quality control practices to enhance product consistency. The organization should continue to conduct regular inspections and monitoring of

production processes while expanding the use of advanced quality control tools and technologies to detect defects more efficiently. Employee training programs should be enhanced to improve skills in identifying and addressing quality issues promptly. Additionally, the company should establish clear documentation and reporting mechanisms for quality control activities, ensuring that deviations are recorded, analyzed, and corrected systematically. By implementing these measures, Crown Beverages Ltd. can maintain high operational standards, reduce defects, and ensure that products consistently meet established quality expectations, thereby reinforcing customer satisfaction and competitiveness.

6.2.3 Quality Assurance

Based on the study's findings, it is recommended that Crown Beverages Ltd. strengthen its quality assurance practices to further enhance product consistency. The organization should regularly review and update quality assurance procedures to ensure alignment with industry standards and evolving customer expectations. Employee training programs should be expanded to improve understanding and implementation of quality assurance practices, including preventive and corrective actions. The company should also enhance documentation and record-keeping systems to maintain comprehensive records of quality activities, audits, and improvements. Additionally, proactive measures such as preventive audits and early detection of potential quality issues should be emphasized to minimize the risk of defects. Implementing these measures will enable Crown Beverages Ltd. to sustain high-quality standards, reduce variations in product performance, and ensure reliable and consistent products, thereby supporting customer satisfaction and organizational competitiveness.

6.2.4 Product Consistency

Based on the study's findings, it is recommended that Crown Beverages Ltd. continue to prioritize strategies that enhance product consistency across all operations. The organization should strengthen the integration of quality planning, quality control, and quality assurance practices to ensure that each stage of production contributes to uniform and reliable product outputs. Regular monitoring and evaluation of production processes should be conducted to detect and correct deviations promptly, while employees should receive ongoing training to maintain high standards of performance. Additionally, the company should implement continuous improvement initiatives aimed at minimizing variations in product quality and enhancing durability, performance, and customer satisfaction. By adopting these measures, Crown Beverages Ltd. can sustain high levels of product consistency, reduce defects, and reinforce customer confidence and competitive advantage in the beverage industry.

6.3 Limitations of the Study

Despite the valuable insights generated, this study encountered several limitations that should be acknowledged. First, the study was limited to Crown Beverages Ltd., which may affect the generalizability of the findings to other beverage companies or industries in Uganda. The organizational context, culture, and resources of Crown Beverages Ltd. may differ from other firms, limiting the ability to apply the conclusions universally.

Second, the study relied on self-reported data collected through questionnaires, which may have introduced response bias, as respondents could provide socially desirable

answers rather than reflecting their true perceptions or practices. Although a high response rate (94.3%) was achieved, this limitation could still affect the accuracy of the reported practices and perceptions.

Third, the study focused only on **three components of quality management practices—quality planning, quality control, and quality assurance—**in relation to product consistency. Other potential factors, such as supplier quality, technological infrastructure, or organizational leadership styles, were not examined, which may also influence product consistency.

Finally, the study employed a cross-sectional design, capturing data at a single point in time. This limits the ability to draw conclusions about causal relationships or the long-term impact of quality management practices on product consistency.

Despite these limitations, the study provides useful insights into the role of quality management practices in maintaining product consistency at Crown Beverages Ltd., and the findings can serve as a foundation for further research in similar organizational contexts.

6.4 Suggested areas for further research

Building on the findings and limitations of this study, several areas are recommended for further research. First, future studies could expand the scope beyond Crown Beverages Ltd. to include multiple beverage companies or other manufacturing sectors in Uganda. This would enhance the generalizability of the findings and allow for

comparative analysis of quality management practices across different organizational contexts.

Second, further research could incorporate additional factors influencing product consistency, such as supplier quality, technological infrastructure, leadership styles, and employee motivation. Including these variables may provide a more comprehensive understanding of the determinants of consistent product quality.

Third, longitudinal studies are recommended to assess the long-term impact of quality management practices on product consistency. Tracking changes over time would provide insights into causal relationships and the sustainability of quality improvements.

Finally, qualitative approaches, such as interviews and case studies, could be employed to explore in greater depth the challenges and best practices in implementing quality management systems. Such studies would provide richer contextual insights, particularly regarding employee engagement, organizational culture, and operational strategies that support consistent product quality.

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APPENDICES

Appendix i: Questionnaire

Dear Sir/Madam,

My name is **GEORGE LEONARD OCOKAN**, pursuing a Master of Business Administration (MBA) degree at Uganda Christian University. I am conducting a study on **"Quality Management Practices and Product Consistency at Crown Beverages Ltd,"** in partial fulfilment of the requirements for the award of Master of Business Administration (MBA) degree of Uganda Christian University. Any information provided in this questionnaire will be kept confidential and will strictly be used for academic purposes. Your participation in this study is voluntary.

Instructions: Please indicate the extent to which you agree with the following statements by ticking the appropriate box.

Scale:

1 = Strongly Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Strongly Agree

Section A: Demographic Information (Tick where applicable)

1. Gender: ☐ Male ☐ Female ☐ Prefer not to say
2. Age: ☐ 18–25 ☐ 26–35 ☐ 36–45 ☐ 46 and above
3. Department: ☐ Production ☐ Quality Control ☐ Logistics ☐ Administration ☐ Other (specify): _____
4. Job Title: _____
5. Years of Service at Crown Beverages Ltd: ☐ Less than 1 ☐ 1–3 ☐ 4–6 ☐ 7 and above

Quality Management Practices (QMPs) IV

Section B: Quality Planning

(Focuses on how the organization sets quality goals and integrates quality into production planning)

Measurement Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

Statement	1	2	3	4	5
B1. The organization sets clear quality objectives for all products.	☐	☐	☐	☐	☐
B2. Quality planning is integrated into all stages of production.	☐	☐	☐	☐	☐
B3. Management regularly reviews and updates quality plans to improve performance.	☐	☐	☐	☐	☐
B4. Resources are adequately allocated to achieve planned quality targets.	☐	☐	☐	☐	☐
B5. Quality planning involves input from relevant staff at all levels.	☐	☐	☐	☐	☐

Section C: Quality Control

(Focuses on monitoring, measuring, and correcting product quality throughout production)

Measurement Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

Statement	1	2	3	4	5
C1. Products are inspected at each stage of production to ensure quality standards.	☐	☐	☐	☐	☐
C2. Quality control tools (e.g., testing, inspections) are effectively applied.	☐	☐	☐	☐	☐
C3. Defective products are promptly identified and corrected.	☐	☐	☐	☐	☐
C4. Quality control processes are consistent across all production batches.	☐	☐	☐	☐	☐
C5. Customer feedback is used to improve quality control measures.	☐	☐	☐	☐	☐

Section D: Quality Assurance

(Focuses on overall systems, policies, and compliance to ensure products meet standards consistently)

Measurement Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

Statement	1	2	3	4	5
D1. The organization has established quality assurance policies and standards.	☐	☐	☐	☐	☐
D2. Employees are trained to comply with quality assurance procedures.	☐	☐	☐	☐	☐
D3. Quality assurance audits are regularly conducted to ensure compliance.	☐	☐	☐	☐	☐
D4. Management enforces adherence to quality standards consistently.	☐	☐	☐	☐	☐
D5. Products consistently meet customer expectations and regulatory standards.	☐	☐	☐	☐	☐

Section E: Product Consistency (Dependent Variable)

(Focuses on how consistent the organization's products are in quality, taste, packaging, and customer satisfaction)

Measurement Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

Statement	1	2	3	4	5
E1. Finished products consistently meet established quality standards.	☐	☐	☐	☐	☐
E2. Products from different batches maintain the same quality and taste.	☐	☐	☐	☐	☐
E3. Customer complaints regarding product quality are minimal.	☐	☐	☐	☐	☐
E4. Packaging and labeling are consistent across all product batches.	☐	☐	☐	☐	☐
E5. The organization maintains consistency in product performance over time.	☐	☐	☐	☐	☐

The End

Appendix i: Interview Guide

Dear Sir/Madam,

My name is **GEORGE LEONARD OCOKAN**, pursuing a Master of Business Administration (MBA) degree at Uganda Christian University. I am conducting a study on **"Quality Management Practices and Product Consistency at Crown Beverages Ltd,"** in partial fulfillment of the requirements for the award of a Master of Business Administration (MBA) degree at Uganda Christian University. Any information provided in this interview will be kept confidential and will strictly be used for academic purposes. Your participation in this study is voluntary.

Target Respondents: Quality assurance managers, production supervisors, senior management, and department heads.

Objective: To obtain in-depth insights on how Quality Management Practices influence product consistency

Section A: Introduction & Background

1. Can you briefly describe your role at Crown Beverages Ltd?
2. How long have you been involved with quality management processes?

Section B: Quality Management Practices

3. How would you describe the level of commitment of top management toward quality assurance?
4. What role do employees play in maintaining and improving product quality?
5. Are there any continuous improvement programs in place? Can you give examples?

6. How do you manage and evaluate supplier performance in relation to product quality?

Section C: Product Consistency

7. What strategies are used to ensure product consistency in terms of taste, packaging, and shelf life?
8. Have there been any challenges in maintaining product consistency? If so, how were they handled?
9. How do you monitor and evaluate product consistency across production batches?

Section D: Overall Perspective

10. In your opinion, how effective have quality management practices been in ensuring product consistency at Crown Beverages Ltd?
11. What would you recommend to further improve quality and consistency?

The End

Appendix iii: Sampling Method

TABLE FOR DETERMINING SAMPLE SIZE FROM A GIVEN POPULATION

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

Note: "N" is population size
"S" is sample size.

Krejcie, Robert V., Morgan, Daryle W., "Determining Sample Size for Research Activities", Educational and Psychological Measurement, 1970.

Appendix iv: REC Letter

UGANDA CHRISTIAN UNIVERSITY
A Centre of Excellence in the Heart of Africa

Office of the Vice Chancellor
Research Ethics Committee UG-026

09th March, 2026

OCOKAN GEORGE LEONARD
Uganda Christian University
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UGANDA CHRISTIAN UNIVERSITY APPROVED UNTIL 09 MAR 2027 RESEARCH ETHICS COMMITTEE

UG-REC-026 APPROVAL NOTICE

To: Ocokan George Leonard; Principal Investigator

Re: UCU-REC Application titled: Quality Management Practices and Product Consistency at Crown Beverages Ltd.

Application Number: UCUREC-2025-2028

Version: 4.1

Type: [*] INITIAL REVIEW
[ ]Exemption Request
[ ] Protocol Amendment
[ ] Letter of Amendment (LOA)
[ ] Continuing Review
[ ] Material Transfer Agreement
[ ] Other, Specify:

I am pleased to inform you that the UG-REC-026; UCUREC under expedited review approved the above referenced application.
Approval of the research is for a period from 09th March, 2026 to 09th March, 2027.

This research is considered minimal risk category.

As Principal Investigator of the research, you are responsible for fulfilling the following requirements of approval:

1. All co-investigators must be kept informed of the status of the research.
2. Changes, amendments, and additions to the protocol or the consent form must be submitted to the REC for re-review and approval prior to the activation of the changes. The REC application number assigned to the research should be cited in any correspondence.
3. Reports of unanticipated problems involving risks to participants or other must be submitted to the REC. New information that becomes available which could change the risk: benefit ratio must be submitted promptly for REC review.

4. Only approved consent forms are to be used in the enrollment of participants. All consent forms signed by subjects and/or witnesses should be retained on file. The REC may conduct audits of all study records, and consent documentation may be part of such audits.
5. Regulations require review of an approved study not less than once per 12-month period. **Therefore, a continuing review application must be submitted to the REC eight weeks prior to the above expiration date of 09th March, 2027 in order to continue the study beyond the approved period.** Failure to submit a continuing review application in a timely fashion may result in suspension or termination of the study, at which point new participants may not be enrolled and currently enrolled participants must be taken off the study.
6. The REC application number assigned to the research should be cited in any correspondence with the REC of record.
7. Your research details have been shared with the Executive secretary of Uganda National Council for Science and Technology (UNCST) and you are **not** required to get clearance.

The following is the list of all documents approved in this application by **UG-REC _026:**

	Document Title	Language	Version	Version Date
1.	Protocol	English	1.0	2026-09-02
2.	Data collection tools	English	1.0	2026-09-02
3.	Informed Consent forms	English	1.0	2026-09-02
4.	Study work plan	English	1.0	2026-09-02
5.	Budget	English	1.0	2026-09-02

Signed and Stamped

Prof. Peter Waiswa.
UCUREC Chairperson,
pwaiswa@musph.ac.ug

UGANDA CHRISTIAN UNIVERSITY
APPROVED
UNTIL
09 MAR 2027
RESEARCH ETHICS COMMITTEE

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UCUREC is accredited by Uganda National Council for Science & Technology, FDA, and National Institutes for Health of the United States of America

UGANDA CHRISTIAN UNIVERSITY
A Centre of Excellence in the Heart of Africa

School of Business
Department of Postgraduate Studies

30th September 2025

To Whom It May Concern;

RE: MASTERS IN BUSINESS ADMINISTRATION (MBA)

Mr. Leonard George Ocokan , Reg S24M15/022 is a student at Uganda Christian University, pursuing a degree of Master's in Business Administration.

In partial fulfilment of the requirements for the award of the Master's degree, he is conducting a research on : **Quality Management Practises And Product Consistency At Crown Beverages Ltd**

This communication therefore serves to formally request you to allow him access any information in your custody/Organisation, which is relevant to his research.

Thank you for your cooperation on this matter

Yours Sincerely,

UGANDA CHRISTIAN UNIVERSITY
P. O. BOX 4, MUKONO
FACULTY OF BUSINESS AND ADMINISTRATION

Mr. Mugisha Henry
Head of Department, Postgraduate Studies