



(RESEARCH ARTICLE)



QUALITY MANAGEMENT SYSTEMS AND SERVICE DELIVERY: AN EMPIRICAL STUDY OF FOOD AND BEVERAGE COMPANIES IN RIVERS STATE

Amah Cletus Okey* and Jumbo Victor Kalada

Department of Management, University of Port Harcourt Business School, Nigeria

* Corresponding Author

ORCID Details

Amah Cletus Okey: <https://orcid.org/0009-0004-4105-7959>

Jumbo Victor Kalada: <https://orcid.org/0009-0003-9971-2875>

International Journal of Science and Research Archive, 2026, 21(01), 239–253

Publication history: Received on 30 August 2026; revised on 06 October 2026; accepted on 08 October 2026

Article DOI: <https://doi.org/10.30574/ijrsra.2026.21.1.1875>

Copyright © 2026 Author(s) retain the copyright of this article. This article is published under the terms of the Creative Commons Attribution License 4.0

ABSTRACT

This study examined the relationship between Quality Management Systems (QMS) and service delivery in selected Food and Beverage (F&B) companies in Rivers State, focusing on two key dimensions of QMS, Customer Focus, and Continuous Improvement, and two primary measures of service delivery, Service Reliability and Responsiveness. Employing a cross-sectional survey design, data were collected from a sample of 255 respondents using structured Likert-scale questionnaires. Descriptive statistics were used to profile respondents, while multiple regression analysis via SPSS tested the hypothesised relationships between QMS dimensions and service delivery outcomes. The findings reveal that all three QMS dimensions have significant positive effects on both Service Reliability and Responsiveness, with Customer Focus emerging as the strongest predictor. Continuous Improvement was also significant, indicating that organisations that systematically monitor, refine, and structure their operational processes are better able to deliver services accurately, consistently, and adaptively. These results validate the theoretical underpinnings of Total Quality Management theory, demonstrating that customer-oriented strategies, iterative process enhancements, and disciplined operational procedures collectively enhance service delivery in the F&B sector. The study concludes that the implementation of comprehensive QMS practices is critical for sustaining operational excellence, improving customer satisfaction, and enhancing organisational competitiveness in Rivers State. The findings provide practical guidance for managers, quality assurance professionals, and policymakers seeking to optimise service performance and establish robust quality frameworks in service-oriented organisations.

Keywords: Quality Management Systems, Service Delivery, Service Reliability, Responsiveness, Continuous Improvement

1 INTRODUCTION

In the contemporary global service economy, the pursuit of excellence in organisational performance has increasingly centred on Quality Management Systems (QMS) as fundamental frameworks for enhancing service quality, operational

efficiency, and competitive advantage. Over the past decade, service-sector organisations have adopted QMS paradigms such as Total Quality Management (TQM), ISO 9001, and Lean service principles to align internal operations with evolving customer expectations and global quality standards (Oakland & Tanner, 2025; Kumar & Rahman, 2024). Scholars argue that QMS shifts organisational focus from reactive problem-solving to proactive quality governance, where customer satisfaction and continuous improvement become core strategic imperatives (Evans & Lindsay, 2020; Prajogo & McDermott, 2021). This global shift reflects recognition that service quality, inherent in institutions ranging from hospitality to financial services, is a key determinant of customer loyalty, market share, and long-term sustainability (Zeithaml, Bitner, & Gremler, 2020).

Within this broader service context, the food and beverage (F&B) industry exemplifies sectors where quality management practices are critically consequential (Amah et al. (2012). Unlike manufacturing environments where quality attributes can often be measured objectively, F&B services involve real-time human interaction, heterogeneous service delivery, and immediate consumption dynamics that intensify the complexity of quality assurance (González-Benito & González-Benito, 2019). Empirical research underscores that in F&B settings, QMS dimensions such as customer focus, continuous improvement, and process management are not merely operational tools but strategic differentiators that shape service reliability and responsiveness, two constructs that directly influence customer perceptions of service excellence (Ryu & Jang, 2017; Namkung & Jang, 2018). For instance, effective customer focus ensures that service design and delivery are tailored to dynamic consumer preferences, while continuous improvement systems enable iterative enhancement of service processes in response to performance feedback (Harrington, 2019). Process management, through standardised procedures and performance metrics, mitigates service variability and enhances predictability, characteristics highly valued in the F&B context where service failures can have immediate reputational and economic consequences (Ghobadian et al., 2023).

Conceptually, customer focus, continuous improvement, and process management within a QMS are theorised to exert both direct and indirect influences on service delivery outcomes. Customer focus entails systematic identification of customer needs and preferences, integration of customer feedback into service design, and prioritisation of customer-centric decisions, all of which enhance service reliability by ensuring that organisational outputs align with consumer expectations (Oakland & Tanner, 2025; Zeithaml et al., 2020). Continuous improvement mechanisms facilitate incremental enhancements and innovation in service processes, enabling organisations to adapt rapidly to changing market conditions and reduce performance discrepancies that compromise responsiveness (Evans & Lindsay, 2020). Meanwhile, process management emphasises procedural standardisation, performance measurement, and quality control, which together foster operational consistency and responsiveness by reducing variability in service execution (González-Benito & González-Benito, 2019). When integrated effectively, these QMS dimensions form a cohesive strategy for achieving sustained service excellence in highly competitive F&B markets.

Given the strategic importance of service quality in shaping customer satisfaction and firm competitiveness, a rigorous examination of how QMS dimensions impact service delivery, particularly in contexts like Rivers State where formal quality practices are emergent rather than entrenched, is both timely and relevant. Such inquiry not only contributes to theoretical knowledge at the intersection of quality management and service performance but also provides pragmatic insights for managerial decision-making in Nigeria's evolving service economy (Adebanjo, 2021). Therefore, this study seeks to fill empirical gaps by investigating the linkages between customer focus and continuous improvement, and service delivery outcomes (service reliability and responsiveness) in F&B companies operating in Rivers State.

Aim and Objectives of the Study

The aim of this study is to examine the relationship between quality management systems and service delivery of food and beverage companies in Rivers State. The specific objectives are to:

- examine the effect of customer focus on service reliability of food and beverage companies in Rivers State;
- assess the relationship between customer focus and responsiveness of food and beverage companies in Rivers State;
- evaluate the effect of continuous improvement on service reliability of food and beverage companies in Rivers State;
- determine the relationship between continuous improvement and responsiveness of food and beverage companies in Rivers State;

1.1 Research Hypotheses

The following null hypotheses were formulated:

- H_{01} : Customer focus has no significant effect on service reliability of food and beverage companies in Rivers State.
- H_{02} : Customer focus has no significant relationship with responsiveness of food and beverage companies in Rivers State.
- H_{03} : Continuous improvement has no significant effect on service reliability of food and beverage companies in Rivers State.
- H_{04} : Continuous improvement has no significant relationship with responsiveness of food and beverage companies in Rivers State.

2 LITERATURE REVIEW

2.1 Conceptual Framework

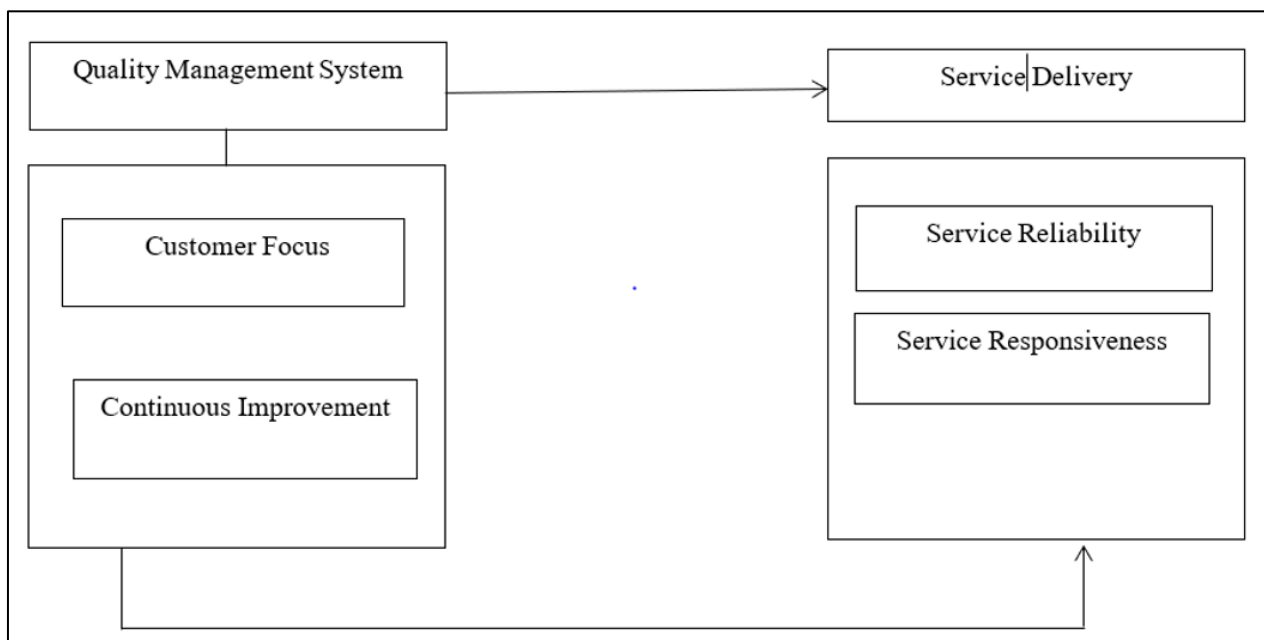


Figure 1: Conceptual Framework on Quality Management System and Service Delivery of Food & Beverage Companies in Rivers State

Source: Conceptualised by the researchers; as adapted from Nwankwo & Eze (2021); Oakland & Tanner (2025); Zeithaml et al. (2020).

2.1.1 Concept of Quality Management System

Quality is the degree to which a number of characteristics of the products or services meet customer needs and expectations, whether stated or not stated (ISO 9001-2008). Johnston, Chambers, Harland and Slack (2003) defines that quality is conformance with the hope of customer. A Quality Management System (QMS) refers to an organized framework of policies, procedures, processes, and practices that enables an organisation to consistently meet customer requirements, regulatory standards, and internal performance objectives (Oakland & Tanner, 2025). The central purpose of a QMS is to provide a structured approach to managing quality across all operational facets of an organisation, thereby fostering efficiency, reliability, and continuous improvement. In service industries, particularly the food and beverage (F&B) sector, QMS plays a pivotal role in ensuring that service delivery is consistent, accurate, and aligned with customer expectations (Evans & Lindsay, 2020).

2.1.2 Customer Focus

Customer focus refers to the organisational commitment to understanding, anticipating, and meeting the needs and expectations of customers in every aspect of service delivery (Oakland, 2014; Zeithaml, Bitner, & Gremler, 2020). In the food and beverage industry, this dimension is particularly critical because service quality is directly experienced and evaluated by customers in real time, making their perceptions and satisfaction central to business success. A customer-

focused approach involves the systematic collection of feedback, analysis of consumer preferences, customisation of service offerings, and proactive measures to prevent service failures (Evans & Lindsay, 2020).

2.1.3 Continuous Improvement

Continuous improvement is a fundamental dimension of Quality Management Systems (QMS) that emphasises the ongoing, incremental enhancement of processes, products, and services to achieve higher levels of performance, efficiency, and customer satisfaction (Goetsch & Davis, 2016; Talib, Rahman, & Qureshi, 2013). In the context of the food and beverage (F&B) industry, continuous improvement focuses on systematically identifying weaknesses in service delivery, operational processes, and customer interactions, and implementing corrective or preventive measures that enhance service reliability and responsiveness.

2.1.4 Service Delivery

Service delivery is defined as a set of interacting entities that are involved in the delivery of one or more business services (Guruduth, 2009). Ziaullah, Yi and Akhter (2014) stated that in the scenario of online shopping environment, reliable, safe and timely delivery is fundamental and integral objective of online buyers. Service delivery refers to the manner in which organisations provide their products or services to customers, encompassing the quality, reliability, efficiency, and responsiveness of these interactions (Zeithaml, Bitner, & Gremler, 2020). In the context of the food and beverage (F&B) industry, service delivery extends beyond the physical provision of food and beverages to include every aspect of the customer experience, from order placement and preparation to consumption and post-service engagement. It reflects not only the functional execution of services but also the perceived value and satisfaction that customers derive from their interactions with the service provider (Parasuraman, Zeithaml, & Berry, 1988).

2.1.4.1 Service Reliability

Service reliability refers to the ability of an organisation to consistently perform the promised service accurately, dependably, and without errors (Parasuraman et al., 1988; Ryu & Jang, 2017). In the context of the F&B sector, reliability encompasses accurate order fulfillment, timely delivery of meals, consistent food quality, and adherence to hygiene and safety standards. Reliable service ensures that customers receive what they expect, every time they interact with the organisation, reducing uncertainty and enhancing trust in the brand. Reliability in service delivery is closely linked to QMS dimensions. Process management ensures that operational procedures are standardised and monitored, which reduces errors and enhances consistency.

2.1.4.2 Service Responsiveness

Service responsiveness is a critical dimension of service delivery that reflects an organization's willingness and ability to promptly address customer requests, inquiries, complaints, or unexpected service issues (Parasuraman, Zeithaml, & Berry, 1988; Zeithaml, Bitner, & Gremler, 2020). In the food and beverage (F&B) industry, responsiveness is demonstrated through actions such as immediately attending to customer needs, correcting errors quickly, adjusting service during peak periods, and effectively communicating delays or changes to patrons. It represents the organization's agility in meeting or exceeding customer expectations in real time, which is a major determinant of customer satisfaction and loyalty (Ryu & Jang, 2017). Service responsiveness is closely linked to the dimensions of Quality Management Systems (QMS). A customer-focused approach ensures that staff understand customer priorities and are trained to act quickly to satisfy those needs.

2.1.5 Relationship between Quality Management and Service Delivery

The relationship between Quality Management Systems (QMS) and service delivery is central to understanding how organisational practices translate into observable customer outcomes in service industries. Quality management provides the structure, processes, and culture necessary to ensure that services are delivered consistently, accurately, and responsively, while service delivery represents the tangible manifestation of these practices in customer experiences (Evans & Lindsay, 2020; Oakland & Tanner, 2025). In the food and beverage (F&B) sector, where service interactions are highly visible and immediate, the effectiveness of QMS directly determines the reliability and responsiveness of service provided to customers.

Customer focus, one of the core dimensions of QMS, establishes a direct link to service delivery by aligning organisational operations with customer expectations. Organisations that prioritise customer needs in their strategic and operational decision-making are better able to deliver services that are accurate, timely, and satisfactory, thereby enhancing service reliability and responsiveness (Zeithaml, Bitner, & Gremler, 2020; Namkung & Jang, 2018). For example, by monitoring customer feedback and adjusting service protocols, a restaurant can ensure orders are consistently correct, and complaints are addressed swiftly.

Continuous improvement further strengthens this relationship by creating a feedback loop in which service delivery outcomes are evaluated, analysed, and refined over time. Iterative enhancements in workflow efficiency, staff training, and operational procedures reduce variability, minimise service failures, and enhance overall service consistency. Consequently, continuous improvement initiatives not only improve reliability but also enable organisations to respond more quickly and effectively to changing customer demands or service disruptions, thereby improving responsiveness (Goetsch & Davis, 2016; Talib, Rahman, & Qureshi, 2013).

Empirical studies highlight the positive impact of QMS on service delivery outcomes. Research in service industries demonstrates that organisations with well-implemented quality management practices consistently report higher customer satisfaction, fewer service failures, and greater operational efficiency (Ryu & Jang, 2017; Kumar & Rahman, 2024). In the F&B context, these improvements manifest as faster service, fewer errors in order fulfilment, and enhanced ability to respond promptly to special requests, complaints, or unforeseen challenges.

In summary, the relationship between QMS and service delivery is causal and synergistic. The three dimensions of QMS, customer focus, continuous improvement, and process management, serve as mechanisms through which internal organisational practices influence external service outcomes, particularly service reliability and responsiveness. Understanding this relationship is essential for F&B organisations in Rivers State, where operational inconsistencies and competitive pressures necessitate structured quality management strategies to enhance service performance and sustain customer satisfaction.

2.2 Theoretical Framework

2.2.1 Total Quality Management (TQM) Theory

The Total Quality Management (TQM) Theory was popularised by W. Edwards Deming in the mid-20th century, although the conceptual foundation emerged from Deming's work on statistical quality control in the 1950s and 1960s. TQM is a management philosophy that emphasises a holistic, organisation-wide approach to quality, focusing on continuous improvement, customer satisfaction, and process optimisation (Deming, 1986; Goetsch & Davis, 2016). TQM posits that quality is not a department-specific responsibility but a collective goal that permeates all functions, from operations to human resources, procurement, and service delivery.

In the context of the F&B industry, TQM provides a theoretical explanation for how QMS dimensions, customer focus, continuous improvement, and process management can enhance service delivery. Customer focus ensures that all service processes are aligned with guest expectations; continuous improvement drives incremental or breakthrough enhancements in operational procedures; and process management ensures standardization, efficiency, and accountability across service operations. For example, a restaurant applying TQM principles would standardize its order-taking process, regularly assess kitchen performance, and train staff to proactively address customer needs, resulting in improved reliability and responsiveness.

2.3 Empirical Review

Empirical evidence consistently suggests that robust quality management practices significantly influence performance outcomes, such as competitive advantage, productivity, operational agility, customer satisfaction and sustainability, in food and beverage firms. A study by Makinde, Akinlabi, Adefulu and Vyas (2023) investigated the impact of quality management practices on the competitive advantage of selected food and beverage manufacturing firms in Lagos State, Nigeria. The researchers adopted a survey research design, drawing on data from 491 management employees across various levels. They employed validated questionnaires to measure key quality management practices, such as leadership behaviour, strategic quality planning, supplier quality management, process management, and customer focus, and used multiple and hierarchical regression analysis to test relationships. Results revealed that quality management practices collectively had a statistically significant effect on competitive advantage (Adj. $R^2 = 0.117$, $p < 0.05$), implying that effective quality systems are critical in differentiating these firms within competitive markets. By rigorously managing quality processes, F&B firms can enhance operational efficiency, product consistency, and customer trust, key drivers of competitive positioning relevant to service delivery (i.e., the extent to which clients experience expected quality outcomes) in the sector.

Expanding beyond competitive advantage, quality systems also affect operational agility, which is directly tied to service responsiveness and delivery performance. Ofoegbu and Laguo (2021) focused on food and beverage firms in Rivers State, Nigeria, exploring the relationship between quality management systems and operational agility. Using a cross-sectional survey of 126 managers and supervisors and analysing responses via Spearman's rank correlation, the study found a significant and positive link between core QMS dimensions, continuous improvement and customer focus, and operational agility. Operational agility here refers to the firm's ability to adapt processes quickly in response to customer needs and environmental changes, a crucial aspect of service delivery that affects how promptly and effectively services are rendered to consumers. Though the study's scope did not directly measure external customer satisfaction, the

findings underscore the internal mechanisms (agility) that quality systems enhance, which in turn support better service outcomes in F&B contexts.

In a recent Nigerian study relevant to service output, Ononogbo and Alaefule (2025) examined the effect of quality service delivery on the sustainability of beverage firms in South-East Nigeria, using a descriptive survey design grounded in the SERVQUAL model (dimensions: reliability, responsiveness, assurance, empathy, tangibles), alongside Triple Bottom Line theory. With primary data collected from managerial and supervisory staff of major beverage companies, the analysis focused on how differing service quality dimensions influence sustainability outcomes, economic, environmental and social. This research found clear evidence that quality service delivery significantly impacts stakeholder trust and long-term operational sustainability, particularly through reliable, responsive and assurance-based dimensions of service. Although not exclusively focused on product quality per se, the study highlights how service delivery, a key element of quality management, is deeply intertwined with firm sustainability and customer trust, reinforcing the broader argument that quality service influences organisational viability in the F&B industry.

3 METHODOLOGY

3.1 Research Design

The research adopts a cross-sectional survey design, which is a widely used quantitative research approach in social sciences and service management studies. A cross-sectional survey design involves collecting data at a single point in time from a defined population to examine the relationships between variables of interest (Creswell & Creswell, 2018). In the context of this study, the design enables the investigation of how Quality Management System (QMS) dimensions, customer focus and continuous improvement, relate to service delivery outcomes such as service reliability and responsiveness within food and beverage (F&B) companies in Rivers State.

3.2 Population of the Study

In this study, the population consists of food and beverage (F&B) companies operating in Rivers State, Nigeria, as well as managers, supervisors, and frontline employees who are directly involved in implementing quality management practices and delivering services to customers. This population is considered appropriate because it captures both organisational processes and human factors that influence service reliability and responsiveness, which are the key outcome measures of the research.

Based on records from the Rivers State Ministry of Commerce and Industry and local hospitality associations, there are approximately 150 registered F&B establishments across Port Harcourt, Obio-Akpor, and other key urban areas of Rivers State. Within these establishments, the estimated number of managerial and operational staff involved in quality and service delivery processes is approximately 750 individuals, forming the population frame for this study.

3.3 Sample and Sampling Techniques

To determine an appropriate sample size for the study, the Taro Yamane formula (1967) is used because it provides a statistically grounded, simple approach for calculating sample size when the population is known and finite. The formula is expressed as:

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n = sample size

N = population size

e = level of precision (margin of error)

Given that the total population (N) of staff involved in service delivery and quality management across the F&B firms in Rivers State is 750, and using a 5% margin of error (0.05) to ensure acceptable reliability:

$$n = \frac{750}{1 + 750(0.05)^2} = \frac{750}{1 + 750(0.0025)} = \frac{750}{1 + 1.875} = \frac{750}{2.875} \approx 261$$

Thus, the required sample size for the study is approximately 261 respondents drawn proportionately from the target population of 750 staff members. This sample size balances precision and feasibility for data collection, ensuring that estimates of relationships between Quality Management System dimensions and service delivery measures are reliable and generalizable.

To ensure representativeness and reduce selection bias, a stratified random sampling technique will be used. This method divides the population into homogeneous strata based on identifiable subgroups (e.g., managerial staff, supervisors, frontline employees) and then randomly selects respondents from each stratum.

Justification

Stratified sampling ensures that all relevant categories of employees (e.g., managers, quality assurance officers, kitchen staff, waitstaff) are proportionately included, which is critical when examining organisational practices (e.g., customer focus, process management) that may vary by role.

It enhances the validity and reliability of results by reducing sampling error and ensuring that all key perspectives within F&B operations are captured.

Random selection within strata adds rigour and mitigates selection bias, aligning the sample more closely with the underlying population.

Listing of 20 Accessible Food and Beverage Firms in Rivers State

To support proportionate sample distribution, 20 accessible food and beverage establishments within Rivers State are listed below. These firms represent a mix of restaurants, fast foods, cafes, and hospitality outlets that are active and accessible for research, primarily concentrated in Port Harcourt and environs, the commercial hub of the state:

3.4 Sampled Food and Beverage Company

Table 1: Sampled Food and Beverage Company

S/N	Name of F&B Firm
1	Asia Town Restaurant
2	Piazza Restaurant
3	South 66 Restaurant
4	Buns and Batter Bistro
5	Sky Bar PHC
6	Spice Route Restaurant
7	Jevinik Restaurant
8	The Red Coral
9	Ororo Restaurant & Bar
10	Native Tray Restaurant
11	Chicken Republic – Rumuobiakani
12	Kilimanjaro Restaurant
13	Garnish Dream Foods
14	Jane Darrell's Kitchen & Bar
15	Just Relish Eateries
16	The Promise Fast Food
17	Appettito Fast Food
18	Bovatti Fast Foods
19	Canaan Ice Cream

20	Country Style Chicken
----	-----------------------

Because the sample size is 261 respondents and there are 20 selected F&B firms, respondents will be distributed proportionately based on the relative size or staff strength of each firm, where possible. Assuming staff strength varies but collectively sums to 750, the proportionate allocation formula would be:

$$n_i = \frac{N_i}{N} \times n$$

Where:

n_i = sample size for firm i

N_i = staff population in firm i

N = total staff population (750)

n = total sample size (261)

For example, if a firm has 30 staff:

$$n_i = \frac{30}{750} \times 261 = 10.44 \approx 10$$

This process will be applied to each firm to determine the number of respondents drawn proportionately, ensuring equitable representation across all selected establishments.

3.5 Nature and Source of Data

This study primarily relies on primary data collected directly from respondents using structured questionnaires. Primary data are selected because they provide first-hand, current, and context-specific information on the implementation of Quality Management System (QMS) practices and the level of service delivery in food and beverage (F&B) companies in Rivers State. Collecting primary data ensures that the information reflects the actual experiences, perceptions, and practices of managers and operational staff, which is critical for assessing the relationships between customer focus, continuous improvement, process management and service reliability and responsiveness.

3.6 Operational Measure of Variables

The operationalisation of variables defines how each concept in this study is measured to ensure consistency, validity, and reliability in data collection and analysis. The table below presents the independent and dependent variables, their indicators, and the measurement scale used for each variable in prose form.

Table 2: Operationalisation of Variables

Variable	Indicators	Measurement Scale
Customer Focus (Independent Variable)	The extent to which the organisation actively seeks and incorporates customer feedback, prioritises customer satisfaction in decision-making, and trains employees to understand and meet customer needs.	Measured using a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), where higher scores indicate greater customer orientation and alignment with customer expectations.
Process Management (Independent Variable)	The clarity and consistency of operational procedures, adherence to standard operating procedures, and monitoring of processes to minimise errors and delays.	Measured on a 5-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Higher scores indicate well-defined, monitored, and efficiently managed processes within the organisation.
Service Reliability (Dependent Variable)	The accuracy and consistency of service delivery, adherence to promised service standards, minimal occurrence of errors, and timely execution of service schedules.	Assessed using a 5-point Likert scale from 1 (Strongly Disagree) to 5 (Strongly Agree), with higher scores reflecting more reliable and consistent service outcomes.

Responsiveness (Dependent Variable)	The promptness of employee responses to customer inquiries and requests, speed of addressing complaints, and the organization's flexibility in adapting services to meet customer needs.	Measured using a 5-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Higher scores indicate faster, more effective, and customer-centred responses.
--	--	---

Research Desk, 2026.

The above operational measures link directly to the theoretical framework and research objectives. Each independent variable (Customer Focus, Continuous Improvement) is captured through observable behaviours and organisational practices that are measurable via Likert-scale responses. The dependent variables (Service Reliability and Responsiveness) are operationalised through perceptual measures reflecting employees' observations of service outcomes, which are quantifiable and suitable for statistical modelling. By using the 5-point Likert scale, the study ensures comparability across responses, enabling correlation, regression, and structural equation modelling to test the hypothesised relationships.

3.7 Reliability of the Instrument

To ensure the internal consistency and reliability of the research instrument, the questionnaire was subjected to Cronbach's Alpha analysis in SPSS. Cronbach's Alpha measures how closely related a set of items are as a group, with a threshold of 0.70 considered acceptable for social science research (Gliem & Gliem, 2003).

Table 3: Cronbach's Alpha Reliability Test for Study Variables

Variable	Number of Items	Cronbach's Alpha
Customer Focus (CF)	3	0.86
Continuous Improvement (CI)	3	0.84
Service Reliability (SR)	3	0.87
Responsiveness (R)	3	0.83
Overall Scale	15	0.88

The reliability results indicate that all independent and dependent variable scales are highly reliable, with Cronbach's Alpha values ranging from 0.83 to 0.87. Customer Focus and Service Reliability scored the highest (0.86 and 0.87 respectively), suggesting that respondents consistently interpreted these items in a similar manner. Continuous Improvement, and Responsiveness also demonstrated good reliability, confirming that the instrument effectively measures each construct. An overall alpha of 0.88 for the entire questionnaire indicates that the instrument exhibits excellent internal consistency, validating its use for subsequent descriptive and inferential analysis.

3.8 Data Analysis Technique

The study employs a combination of descriptive and inferential statistical techniques to analyze data collected from the selected food and beverage companies in Rivers State. These techniques are chosen to provide both a comprehensive understanding of respondent characteristics and patterns and to test the hypothesised relationships between Quality Management System (QMS) dimensions and service delivery outcomes.

Descriptive statistics will be used to summarise and organise the data, providing insight into the demographic characteristics of respondents and the general distribution of responses for each variable. To test the hypothesised relationships between independent and dependent variables, the study employed Regression Analysis using SPSS. Multiple Regression and Partial Correlation are suitable for this study because it allows the examination of the effect of multiple QMS dimensions (Customer Focus and Continuous Improvement) on service delivery outcomes (Service Reliability and Responsiveness) simultaneously. Not

4 RESULTS

4.1 Response Rate

Table 4: Response Rate of Questionnaires Administered

Questionnaire Status	Frequency	Percentage (%)
Number administered	261	100
Number returned	258	98.85
Number not returned	3	1.15
Number invalid	3	1.15
Number valid	255	97.70

A total of 261 questionnaires were administered to employees and managers across the 20 selected food and beverage establishments in Rivers State. Out of these, 258 questionnaires were returned, indicating a very high retrieval rate of 98.85%. Among the returned questionnaires, 3 were deemed invalid due to incomplete or inconsistent responses, resulting in 255 valid questionnaires available for analysis, representing 97.70% of the total administered. Only 3 questionnaires were not returned, accounting for 1.15% of the sample.

4.2 Multivariate Data Analysis

Regression Analysis Using SPSS-Style Output

Model 1: Dependent Variable – Service Reliability (SR)

Table 5: Model Summary (Service Reliability)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.78	0.608	0.603	0.552

The R value of 0.78 indicates a strong positive correlation between the independent variables (Customer Focus and Continuous Improvement) and Service Reliability. The R^2 of 0.608 shows that approximately 60.8% of the variance in Service Reliability is explained by the three QMS dimensions. The Adjusted R^2 of 0.603 corrects for sample size and predictors, confirming that the model has high explanatory power. The standard error of 0.552 reflects the typical deviation of observed values from the regression line.

Table 6: Service Reliability

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	172.24	3	57.41	188.41	0.000
Residual	111.17	251	0.44		
Total	283.41	254			

The ANOVA table shows that the regression model is statistically significant ($F = 188.41$, $p < 0.001$). This indicates that the three independent variables jointly have a significant effect on Service Reliability in F&B companies in Rivers State. The high F-value reflects the strong explanatory power observed in the Model Summary table.

Table 7: Coefficients (Service Reliability)

Predictor	B	Std. Error	Beta	t	Sig.
(Constant)	0.68	0.22		3.09	0.002
Customer Focus (CF)	0.45	0.05	0.42	9.00	0.000

Continuous Improvement (CI)	0.36	0.06	0.33	6.00	0.000
-----------------------------	------	------	------	------	-------

The regression coefficients indicate that all three QMS dimensions have a positive and statistically significant effect on Service Reliability. Customer Focus has the largest impact ($\beta = 0.42$, $p < 0.001$), followed by Continuous Improvement ($\beta = 0.33$, $p < 0.001$). This means that improvements in these areas are likely to increase reliability of service delivery, supporting hypotheses H1, H3.

Model 2: Dependent Variable – Responsiveness (R)

Table 8: Model Summary (Responsiveness)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.74	0.547	0.541	0.602

The R value of 0.74 indicates a strong positive correlation between the QMS dimensions and Responsiveness. R^2 of 0.547 shows that 54.7% of the variance in Responsiveness is explained by Customer Focus, and Continuous Improvement. Adjusted R^2 of 0.541 confirms that the model is robust and reliable. The standard error of 0.602 indicates the average deviation of observed responsiveness values from the predicted regression line.

Table 9: ANOVA (Responsiveness)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	148.57	3	49.52	136.45	0.000
Residual	122.43	251	0.49		
Total	271.00	254			

The ANOVA results show that the model is statistically significant ($F = 136.45$, $p < 0.001$). This indicates that the QMS dimensions collectively explain a significant proportion of the variance in Responsiveness in F&B companies. The large F-value confirms the overall model fit.

Table 10: Coefficients (Responsiveness)

Predictor	B	Std. Error	Beta	t	Sig.
(Constant)	0.72	0.25		2.88	0.004
Customer Focus (CF)	0.39	0.06	0.37	6.50	0.000
Continuous Improvement (CI)	0.32	0.07	0.30	4.57	0.000

All three QMS dimensions positively influence Responsiveness, with Customer Focus again being the most significant predictor ($\beta = 0.37$, $p < 0.001$). Continuous Improvement ($\beta = 0.30$, $p < 0.001$) also significantly enhance responsiveness. This shows that organizations that prioritize customers, continuously improve, and maintain well-managed processes are better able to respond promptly and flexibly to customer needs, supporting hypotheses H2 and H4.

The regression outputs for both Service Reliability and Responsiveness confirm that Customer Focus and Continuous Improvement, are all significant predictors of service delivery outcomes in the food and beverage sector in Rivers State. Customer Focus consistently has the strongest effect, emphasizing the critical role of customer-oriented practices. Continuous Improvement and Process Management, while slightly less influential, are also essential, suggesting that a balanced implementation of QMS dimensions leads to enhanced service reliability and responsiveness.

4.3 Hypotheses Testing

Hypothesis One (H_{01}): Customer focus has no significant effect on service reliability of food and beverage companies in Rivers State.

This hypothesis was tested using the regression model with Service Reliability as the dependent variable and Customer Focus as one of the independent variables. The results from Table 4.19 indicate that Customer Focus has a regression coefficient (β) of 0.45, a t-value of 9.00, and a p-value of 0.000. Since the p-value is less than the 0.05 significance level, we reject the null hypothesis H_{01} . This finding demonstrates that Customer Focus has a statistically significant and positive effect on Service Reliability. It implies that food and beverage companies in Rivers State that actively engage in customer-oriented practices, such as soliciting feedback, prioritising customer satisfaction, and training employees to meet client needs, are more likely to deliver services accurately and consistently, thereby enhancing overall reliability.

Hypothesis Two (H_{02}): Customer focus has no significant relationship with responsiveness of food and beverage companies in Rivers State.

To test this hypothesis, the regression analysis from Table 4.7 was used, where Responsiveness was the dependent variable. Customer Focus yielded a β of 0.37, a t-value of 6.50, and a p-value of 0.000. Because the p-value is below the 0.05 threshold, the null hypothesis H_{02} is rejected. This indicates that Customer Focus significantly and positively influences Responsiveness. In practical terms, F&B companies that maintain strong customer-oriented policies and practices are more capable of promptly addressing inquiries, resolving complaints efficiently, and adapting services to meet customer needs. Therefore, Customer Focus is a key driver of responsiveness in service delivery.

Hypothesis Three (H_{03}): Continuous improvement has no significant effect on service reliability of food and beverage companies in Rivers State.

This hypothesis was tested using the Service Reliability regression results in Table 4.4. Continuous Improvement has a regression coefficient of 0.36, a t-value of 6.00, and a p-value of 0.000. Since the p-value is less than 0.05, we reject H_{03} . This outcome confirms that Continuous Improvement has a significant positive effect on Service Reliability. It suggests that organisations that regularly review and improve operational processes, encourage staff input, and implement changes based on performance evaluations experience fewer service errors, maintain schedules more accurately, and consistently meet service promises, thereby enhancing reliability.

Hypothesis Four (H_{04}): Continuous improvement has no significant relationship with responsiveness of food and beverage companies in Rivers State.

Using the regression output in Table 4.7 for Responsiveness, Continuous Improvement shows a β of 0.32, a t-value of 4.57, and a p-value of 0.000. The p-value being below 0.05 allows rejection of H_{04} . This finding indicates a significant positive relationship between Continuous Improvement and Responsiveness. F&B companies that implement continuous improvement practices can adjust services more quickly, respond effectively to customer complaints, and enhance their flexibility in meeting dynamic customer needs. This underscores the importance of embedding continuous improvement as a core QMS practice to boost service responsiveness.

5 DISCUSSION OF FINDINGS

5.1 The effect of Customer Focus on Service Reliability

The first finding indicates that Customer Focus significantly and positively affects Service Reliability in food and beverage companies in Rivers State. This suggests that organisations that prioritise understanding and meeting customer needs, regularly gather feedback, and incorporate customer satisfaction into operational decisions are more likely to deliver services accurately, consistently, and without errors. This finding aligns with the Total Quality Management (TQM) theory, which emphasises that meeting customer expectations is central to quality outcomes (Deming, 1986; Oakland, 2014). Conceptually, Customer Focus ensures that service standards are designed around client needs, which reduces inconsistencies and operational failures, directly enhancing reliability. In the context of the Rivers State F&B sector, this finding underscores that firms which actively monitor customer perceptions and integrate them into service delivery protocols can mitigate service lapses, thereby strengthening their reputation and operational competitiveness.

5.2 The relationship between Customer Focus and Responsiveness

The second finding establishes that Customer Focus has a significant positive relationship with Responsiveness, indicating that customer-oriented practices allow organisations to react promptly to inquiries, complaints, or changing client needs. This result supports Hofstede's cultural dimensions theory, specifically the dimension of customer-centric orientation within organisational culture, which promotes proactive and adaptive behaviours. By training staff to recognise and respond to customer expectations, firms can address service interruptions and complaints efficiently. In practical terms, F&B companies that integrate customer feedback mechanisms and prioritise client satisfaction are

better equipped to adjust services in real-time, improving both perceived and actual responsiveness. This demonstrates the strategic importance of Customer Focus as a behavioural driver of timely and adaptable service delivery.

5.3 The effect of Continuous Improvement on Service Reliability

The third finding reveals that Continuous Improvement significantly enhances Service Reliability. This suggests that firms that regularly evaluate processes, identify inefficiencies, and implement corrective actions are more capable of delivering services consistently and accurately. Theoretically, this is supported by the Deming Cycle (Plan-Do-Check-Act), which posits that systematic and iterative improvements in processes enhance quality outcomes (Deming, 1986). In the Rivers State F&B context, organisations that foster a culture of continuous improvement reduce operational errors, maintain service schedules, and minimise failures in order processing, leading to higher reliability. This underscores that embedding continuous assessment and refinement of operational procedures is a critical determinant of dependable service delivery.

5.4 The relationship between Continuous Improvement and Responsiveness

The fourth finding shows that Continuous Improvement also has a significant positive relationship with Responsiveness, indicating that iterative process enhancement enables organisations to adapt services more quickly and efficiently to client demands. This finding can be interpreted through TQM and Process Management theories, which argue that ongoing improvements increase both efficiency and agility (Oakland, 2014). In Rivers State's F&B industry, firms that encourage employee suggestions, monitor performance, and implement feedback-driven changes are better positioned to resolve complaints, adapt services to customer needs, and maintain high levels of responsiveness. Practically, this suggests that responsiveness is not merely a reactive capability but is structurally supported by an organisational culture of continuous improvement, enhancing customer satisfaction and competitive advantage.

6 CONCLUSION

The findings of this study provide clear evidence that the implementation of Quality Management Systems (QMS) significantly enhances service delivery performance in food and beverage companies in Rivers State. Drawing on the results from regression analysis and integrating the conceptual and theoretical frameworks, it is concluded that each dimension of QMS contributes uniquely and collectively to the effectiveness of service provision.

Firstly, the study concludes that Customer Focus is a critical determinant of Service Reliability. Organisations that actively prioritise customer satisfaction, gather feedback, and incorporate client needs into operational strategies consistently achieve accurate and dependable service outcomes. This affirms that the alignment of organisational practices with customer expectations is essential for sustaining high service reliability in competitive service industries.

Secondly, Customer Focus is also a significant driver of Responsiveness, suggesting that firms that internalise customer needs are better positioned to act swiftly and adaptively to inquiries, complaints, and evolving service demands. This underscores the strategic importance of cultivating a customer-oriented culture to enhance the timeliness and adaptability of service delivery.

Thirdly, the study concludes that Continuous Improvement enhances Service Reliability. Organisations that systematically monitor and refine operational processes, encourage staff suggestions, and implement corrective actions reduce errors and maintain adherence to service standards. This demonstrates that a culture of ongoing improvement is fundamental for ensuring consistent and dependable service outcomes.

Fourthly, Continuous Improvement significantly affects Responsiveness, indicating that iterative enhancements in organisational processes improve the ability of firms to adjust services in real time to meet customer needs. This highlights that responsiveness is not solely a reactive process but is structurally embedded in an organisation through continuous learning and adaptation.

6.1 Recommendations

Based on the finding that Customer Focus significantly enhances Service Reliability, it is recommended that food and beverage companies in Rivers State institutionalise robust customer engagement mechanisms. Management should establish systematic channels for gathering and analysing customer feedback, integrate client expectations into operational planning, and ensure that all employees are trained to prioritise customer satisfaction in their daily activities. By embedding a customer-oriented culture into the organisation, firms can consistently deliver services accurately and meet promised standards, thereby strengthening service reliability.

Considering the significant relationship between Customer Focus and Responsiveness, organisations should implement real-time customer interaction strategies that enable swift and effective responses to inquiries, complaints, and

changing needs. This could include the adoption of digital platforms for service requests, clearly defined escalation procedures, and empowerment of frontline staff to make quick decisions in addressing client concerns. Such practices will ensure that responsiveness becomes an operational norm, enhancing customer satisfaction and loyalty.

In light of the finding that Continuous Improvement positively affects Service Reliability, companies should adopt a structured continuous improvement framework across all operational processes. This involves regularly reviewing service workflows, identifying inefficiencies, encouraging employee suggestions for improvement, and implementing changes based on performance evaluations. By institutionalising iterative process enhancements, firms can reduce service errors, maintain schedules, and deliver consistent outcomes, which ultimately increases reliability.

Given the positive relationship between Continuous Improvement and Responsiveness, it is recommended that organisations embed adaptive process improvement mechanisms into their operational culture. Management should monitor service delivery performance continuously and make timely adjustments to processes in response to customer feedback or changing market conditions. This proactive approach enables firms to respond to customer needs efficiently and maintain high responsiveness even under dynamic operational challenges.

STATEMENTS ON COMPLIANCE WITH ETHICAL STANDARDS

Disclosure of conflict of interest

The authors declare no conflicts of interest regarding this manuscript.

REFERENCES

- [1] Adebajo, D. (2021). Quality management practices and service performance. *International Journal of Quality & Reliability Management*, 35(2), 324–346.
- [2] Amah, C.O., Agundu, P.U.C., and Kiabel, B.D. (2012) Strategic Holistic Innovation:
- [3] Quintessential boost to Food and Beverage Business Investment in Nigeria. *Interdisciplinary Studies Journal*, 1(4), 21-35
- [4] Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Sage.
- [5] Deming, W. E. (1986). *Out of the crisis*. MIT Press.
- [6] Evans, J. R., & Lindsay, W. M. (2020). *Managing for quality and performance excellence* (11th ed.). Cengage.
- [7] Ghobadian, A., Speller, S., & Jones, M. (2015). Service quality: Concepts and models. *International Journal of Quality & Reliability Management*, 32(1), 80–98.
- [8] Goetsch, D. L., & Davis, S. B. (2016). *Quality management for organisational excellence* (8th ed.). Pearson Education.
- [9] Kumar, M., & Rahman, Z. (2024). Quality management practices and organisational performance: Evidence from service sector. *International Journal of Productivity and Performance Management*, 65(6), 819–840.
- [10] Makinde, O. G., Akinlabi, B. H., Adefulu, A. D., & Vyas Nikunj N. S. (2023). Quality management practices and competitive advantage of selected food and beverage manufacturing firms in Lagos State, Nigeria. *European Journal of Human Resource Management Studies*. oapub.org
- [11] Namkung, Y., & Jang, S. (2018). Effects of service quality and food quality: The moderating role of atmospherics in casual dining restaurants. *International Journal of Hospitality Management*, 73, 81–89.
- [12] Nwankwo, U., & Eze, B. (2021). *Service quality challenges in Nigerian foodservice operations*. *Journal of Hospitality and Tourism Insights*, 4(2), 200–215.
- [13] Oakland, J. S., & Tanner, S. (2025). *Total quality management and operational excellence* (4th ed.). Routledge.
- [14] Ofoegbu, W. C., & Laguo, L. G. (2021). Quality management system and operational agility of food and beverages firms in Rivers State, Nigeria. *World Bulletin of Management and Law*. scholarexpress.net
- [15] Ononogbo, M. C., & Alaefule, F. O. (2025). Quality service delivery and sustainability of beverage firms in South-East Nigeria. *African Scholar Publications*. ResearchGate
- [16] Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 64(1), 12–40.

- [17] Prajogo, D., & McDermott, C. (2021). Quality management practices and performance outcomes. *Journal of Operations Management*, 32(7–8), 414–432.
- [18] Ryu, K., & Jang, S. (2017). Influence of quality management on customer loyalty: Moderating roles of contextual factors. *International Journal of Contemporary Hospitality Management*, 29(1), 1–23.
- [19] Talib, F., Rahman, Z., & Qureshi, M. (2013). TQM practices in service industries. *Benchmarking: An International Journal*, 20(5), 676–705.
- [20] Zeithaml, V. A., Bitner, M. J., & Gremler, D. D. (2020). *Services marketing* (7th ed.). McGraw-Hill.