

Effect of Supply Chain Management (SCM) Practices on Organizational Performance of BUA Cement Plc, Obu Okpella, Edo State

Lawal Nura Ali; and Umar Gunu Suleiman

Department of Business Administration, Faculty of Management Sciences, University of Abuja, Nigeria.

Corresponding author: Lawalnura903@gmail.com

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Abstract

Effective Supply Chain Management practices, particularly inventory management and supplier relationship management, are widely recognized as critical drivers of organizational performance in capital-intensive industries such as cement manufacturing. This study examined the effect of supply chain management practices on organizational performance at BUA Cement Plc, Obu Okpella, Edo State, Nigeria. A quantitative research design was employed, with primary data collected via a structured questionnaire administered to employees across procurement, inventory, production, logistics, and customer service units. The study population comprised 2,023 staff members across key operational departments. Using Yamane's formula, a sample of 401 respondents was selected, yielding 379 valid responses (95% response rate) that were analyzed through descriptive statistics and simple regression analysis using SPSS Version 27.0. The findings revealed that inventory management exerted a statistically significant positive effect on operational efficiency ($\beta = .785, p < .001$), explaining 61.6% of its variance, while supplier relationship management demonstrated a substantial positive influence on customer satisfaction ($\beta = .746, p < .001$), accounting for 55.7% of variance in service reliability and delivery consistency. The study concludes that inventory management and supplier relationship management function as complementary yet distinct strategic capabilities driving internal production continuity and external market responsiveness respectively within Nigeria's capital-intensive cement manufacturing sector. It is recommended that the company institutionalize data-driven forecasting systems and deploy automated, centralized inventory platforms to enhance supply chain visibility and decision-making agility. These interventions will strengthen operational resilience and sustain market competitiveness amid Nigeria's dynamic industrial environment.

Keywords: Inventory Management, Supplier Relationship Management, Operational Efficiency, Customer Satisfaction.

Introduction

Supply Chain Management (SCM) refers to the strategic coordination of business functions and processes within and across organizations to integrate supply and demand management efficiently (Lee, 2021). It encompasses a wide range of activities including procurement, inventory control, logistics, supplier relationship management, and distribution, all aimed at delivering value to the end customer while optimizing operational

costs and enhancing firm performance (Toorajipour et al., 2021) Empirical research consistently demonstrates that effective SCM practices are a critical source of competitive advantage, particularly in capital-intensive, process-based industries such as cement manufacturing, where even minor disruptions can cascade into significant financial losses (Adebiyi et al., 2021; Usman & Abdulraheem, 2025).

Globally, the cement industry has undergone a strategic realignment toward leaner, more responsive supply chains to address volatile input costs, tightening environmental regulations, and demand volatility (Yosef et al., 2023). Leading producers like Heidelberg Materials and LafargeHolcim have institutionalized advanced SCM practices including just-in-time inventory systems, digital twin technologies, and strategic supplier alliances to enhance production continuity and service reliability (Usman & Abdulraheem, 2025). These integrative approaches not only reduce waste and inventory holding costs but also significantly improve on-time delivery performance, which directly influences customer satisfaction in commoditized markets (Lee, 2021).

In West Africa, cement production is central to infrastructure-led development, with countries such as Ghana, Côte d'Ivoire, and Senegal expanding local capacity to reduce import dependence (Esan et al., 2025). However, firms in the region operate under persistent infrastructural constraints including poor road networks, unreliable energy supply, and fragmented supplier ecosystems that impede SCM effectiveness (Okafor et al., 2021). Despite these challenges, empirical evidence shows that firms investing in robust inventory planning and collaborative supplier relationships achieve higher production uptime and greater market responsiveness (Adebiyi et al., 2021). This aligns with global findings that relational governance and internal logistics competence jointly drive performance in volatile environments (Lee, 2021).

In Nigeria, the cement sector has transformed dramatically since deregulation in the early 2000s, making the country Africa's largest producer with output exceeding 50 million metric tons annually (Usman & Abdulraheem, 2025). The market is dominated by three major players: Dangote Cement, BUA Cement, and Lafarge Africa, that compete intensely on delivery speed, product consistency, and service reliability. Within this context, SCM has emerged as a key strategic differentiator. Adebiyi et al. (2021) found that Nigerian manufacturing firms with structured inventory systems and strong supplier ties achieved up to 22% higher operational efficiency than peers with fragmented SCM practices, a finding consistent with broader evidence linking SCM integration to performance in emerging economies (Adebiyi et al., 2021).

BUA Cement Plc's Obu plant in Okpella, Edo State, one of West Africa's largest integrated cement facilities with a nominal capacity of over 10 million metric tons per year (Usman & Abdulraheem, 2025), operates in a high-stakes logistical environment characterized by port congestion, road degradation, and input supply volatility. These conditions make the plant particularly vulnerable to disruptions stemming from poor inventory forecasting or weak supplier coordination. While anecdotal evidence and internal documents suggest efforts to

digitize inventory tracking and strengthen supplier engagement (Okyere et al., 2023), no peer-reviewed empirical study has yet examined how specific SCM practices translate into measurable performance outcomes at this facility.

This study addressed a critical empirical gap by investigating how Inventory Management and Supplier Relationship Management Influence Operational Efficiency and Customer Satisfaction at BUA Cement's Obu plant. By anchoring the analysis in established SCM theory and firm-level data, the research contributes rigorous, context-specific evidence to both academic literature and industrial practice in Nigeria's strategically vital manufacturing sector.

Statement of the Problem

Effective Supply Chain Management practices, particularly inventory management and supplier relationship management, are widely recognized as critical drivers of organizational performance in capital-intensive industries such as cement manufacturing. When properly implemented, these practices enhance operational efficiency by minimizing stockouts, reducing excess inventory costs, and ensuring uninterrupted production, while also improving customer satisfaction through reliable delivery and consistent product quality (Lee, 2021; Ganbold et al., 2020). Globally, leading cement producers like Heidelberg Materials and LafargeHolcim have adopted integrated SCM approaches including digital inventory systems and strategic supplier collaboration to improve responsiveness and reduce waste (Usman & Abdulraheem, 2025).

Despite these advancements, BUA Cement Plc's Obu plant in Okpella, Edo State, one of Nigeria's largest cement facilities with a production capacity exceeding 10 million metric tons annually (Usman & Abdulraheem, 2025), appears to face recurring operational and service delivery challenges that suggest weaknesses in SCM execution. Industry data indicates that manufacturing firms in Edo State operated at an average capacity utilization rate of just 52.4% in 2023, notably below the national average of 61.7%, with supply chain disruptions cited as a key constraint (Abah et al., 2025). Industry feedback, including reports from sectoral associations (Esan et al., 2025), corroborates frequent production stoppages linked to delays in the supply of critical inputs like clinker and gypsum, as well as growing complaints from distributors in southern markets such as Benin City and Asaba regarding delivery inconsistencies and product shortages. These issues point to deficiencies in inventory forecasting and supplier coordination, both of which are foundational to SCM effectiveness (Debnath et al., 2023; Ranjan et al., 2024).

Theoretically, this performance gap challenges core tenets of the Resource-Based View and Transaction Cost Economics, which argue that firms achieve competitive advantage through valuable internal capabilities, such as robust inventory systems, and efficient external governance, such as collaborative supplier relationships. Empirical evidence from Nigeria supports this perspective: Adebisi et al. (2021) found that manufacturers with weak inventory practices and adversarial supplier ties experience significantly higher operational costs and lower customer retention. If these SCM gaps at BUA Cement remain

unaddressed, they risk undermining the company's competitiveness in a market increasingly contested by Dangote Cement and Lafarge Africa, threatening not only its profitability but also its strategic role in Nigeria's infrastructure development (Abdullahi & Isyaka, 2025). Without firm-level, evidence-based insights into how SCM practices affect performance at the Obu plant, opportunities for targeted improvement may be missed, with implications for both organizational sustainability and industrial growth in Edo State (Orji & U-Dominic, 2024).

Research Questions

- i. How does inventory management affect the operational efficiency of BUA Cement Plc, Obu Okpella?
- ii. How does supplier relationship management influence customer satisfaction at BUA Cement Plc, Obu Okpella?

Research Objectives

- i. To examine the effect of inventory management on the operational efficiency of BUA Cement Plc, Obu Okpella.
- ii. To assess the impact of supplier relationship management on customer satisfaction at BUA Cement Plc, Obu Okpella.

Statement of Hypotheses

H₀₁: Inventory management has no significant effect on the operational efficiency of BUA Cement Plc, Obu Okpella.

H₀₂: Supplier relationship management has no significant effect on customer satisfaction at BUA Cement Plc, Obu Okpella.

Literature Review

Conceptual Framework

Concepts of Supply Chain Management practices

Supply Chain Management (SCM) encompasses the strategic integration of processes that govern the flow of goods, information, and finances from raw material suppliers to end customers. In capital-intensive, continuous-process industries such as cement manufacturing, SCM functions not merely as a logistical concern but as a strategic imperative, directly influencing cost structure, production continuity, and market responsiveness (Gera et al., 2022; Baisa et al., 2023). Among SCM's core dimensions, inventory management and supplier relationship management (SRM) have emerged as pivotal levers of performance, particularly in volatile emerging economies like Nigeria (Adebisi et al., 2021; Azmi et al., 2025).

Inventory Management

Inventory management entails the systematic planning, monitoring, and control of stock levels to balance service availability against holding costs. In cement production, where kilns operate continuously and raw material shortages trigger costly production stoppages, even minor inventory misalignments can generate significant operational downtime. Gera et al. (2022) emphasize that within high-fixed-cost, process-based industries, inventory functions not as a passive buffer but as an active enabler of throughput optimization. Contemporary practices including demand forecasting, real-time stock monitoring, and lean inventory systems enable organizations to synchronize material inflows with production rhythms, thereby minimizing waste and enhancing asset utilization.

Empirical support derives from Ranjan et al. (2024), who found that EOQ, JIT, and MRP systems significantly improved operational performance within contexts comparable to Nigeria regarding infrastructural constraints. Similarly, Debnath et al. (2023) demonstrated that improved forecasting accuracy and inventory turnover reduced idle time and strengthened cash flow within a processing operation. Critically, while these studies confirm inventory's operational value, none focus specifically on Nigeria's cement sector, where production continuity and input consistency directly affect product quality outcomes (Baisa et al., 2023).

Supplier Relationship Management (SRM)

SRM transcends transactional procurement by cultivating long-term, trust-based partnerships characterized by transparency, joint planning, and shared performance metrics (Adebiyi et al., 2021). Within Nigeria's volatile supply environment, marked by port congestion, foreign exchange constraints, and erratic power availability, reliable supplier relationships serve as a strategic buffer. As noted by Adebiyi et al. (2021), Nigerian manufacturers with collaborative supplier relationships report higher input reliability, improved quality standards, and faster disruption recovery. This aligns with global evidence: Gupta and Gupta (2025) show that formalized SRM reduces procurement costs and enhances coordination through mutual monitoring and risk-sharing mechanisms. Amoako-Gyampah et al. (2019) further demonstrated that supplier relationship management significantly influences firm performance in developing economies, particularly when mediated by organizational flexibility capabilities.

Crucially, SRM and inventory management operate interdependently. Baisa et al. (2023), in a systematic review of supply chain practices across emerging economies, found that the synergy between internal logistics competence, such as inventory control, and external integration, such as SRM, significantly amplifies operational outcomes, especially within process manufacturing where supply continuity remains non-negotiable. Yet, existing Nigerian studies, such as Adebiyi et al. (2021), tend to treat SCM dimensions in isolation or focus on Lagos-based discrete manufacturing, lacking specific attention to integrated cement plants within secondary industrial zones like Edo State.

Organizational Performance

Organizational performance represents a multidimensional construct reflecting a firm's success in achieving strategic, operational, and market-oriented objectives. Within manufacturing contexts, performance evaluation commonly incorporates both financial and non-financial indicators. This study emphasizes two critical non-financial dimensions, operational efficiency and customer satisfaction, which serve as leading indicators of long-term competitiveness and sustainability (Gera et al., 2022; Azmi et al., 2025).

Operational Efficiency

Operational efficiency reflects the effectiveness of converting inputs into outputs while minimizing resource waste. Within cement manufacturing, it is commonly measured through kiln uptime, energy consumption per ton, and frequency of production downtime. Lee (2021) emphasizes that efficiency represents not merely cost reduction but value maximization through operational reliability. For BUA Cement, where fixed costs dominate the cost structure, even modest improvements in uptime can yield substantial revenue gains, making inventory-driven production continuity critically important (Ranjan et al., 2024).

Customer Satisfaction

Customer satisfaction, conversely, represents a market-facing metric measured through product availability, delivery timeliness, and service reliability. Within Nigeria's commoditized cement market, brand loyalty remains relatively weak; buyers readily switch suppliers in response to stockouts (Adebiyi et al., 2021). Service quality frameworks identify reliability and responsiveness as key drivers within industrial purchasing contexts, both fundamentally dependent upon upstream SCM performance (Lee, 2021). Ganbold et al. (2020) empirically linked operational efficiency to customer service levels across global contexts, while Adebiyi et al. (2021) reported significantly higher customer retention among efficient Nigerian manufacturers. However, no study has directly connected inventory control and SRM to customer satisfaction within Nigeria's cement industry, despite the sector's strategic role in national infrastructure development (Baisa et al., 2023).

Theoretical Framework

This study is underpinned by two complementary theoretical perspectives: the Resource-Based View (RBV) and Transaction Cost Economics (TCE). The RBV, as articulated in contemporary supply chain literature, posits that firms achieve sustained competitive advantage through strategic resources possessing valuable, rare, inimitable, and non-substitutable characteristics (Komakech et al., 2025; Costa et al., 2024), and within this context, effective inventory management systems and collaborative supplier relationship practices are conceptualized as such strategic, firm-specific resources that enhance operational efficiency and customer satisfaction at BUA Cement Plc (Chahal et al., 2020;

Azmi et al., 2025). Complementing this internal focus, Transaction Cost Economics explains how firms minimize exchange-related costs, such as monitoring, negotiation, and uncertainty management, by structuring efficient governance mechanisms with external partners, such that strong supplier relationship management reduces opportunistic behavior, ensures input reliability, and lowers transaction risks within Nigeria's volatile supply environment (Gupta & Gupta, 2025; Amoako-Gyampah et al., 2019). Together, RBV and TCE provide a dual-theoretical lens: RBV accounts for how internal SCM capabilities function as performance-enhancing organizational assets, while TCE elucidates how relational governance with suppliers mitigates external inefficiencies, thereby jointly explaining the causal pathway through which SCM practices influence organizational performance within complex emerging economy settings (Komakech et al., 2025; Baisa et al., 2023).

Empirical Review

Barker et al. (2022) examined the effect of supplier inventory leanness on firms' financial performance with the objective of extending inventory management literature beyond firm-level analysis. The study adopted a quantitative research design using panel data obtained from Compustat's Customer Segment and Fundamentals Quarterly databases, focusing on supplier–focal firm relationships. The population comprised firms captured in the database, while the sample consisted of a large panel dataset aggregated at the firm-quarter level. Secondary data were collected and analyzed using econometric techniques. The findings revealed that supplier inventory leanness indirectly influenced firm financial performance through its interaction with the focal firm's inventory leanness, highlighting a non-linear relationship. However, the study was limited to secondary data from developed economies, thereby creating a gap for empirical validation in developing countries such as Nigeria and within manufacturing firms specifically.

Rodríguez et al. (2025) investigated innovations in inventory management and their effect on the profitability of micro and small enterprises. The study employed a quantitative, descriptive, and explanatory research design, with a population of MSMEs in Bagua, Peru. A convenience sampling technique was used to select 83 MSMEs, generating 200 valid responses from key personnel involved in inventory decisions. Primary data were collected through a structured 21-item Likert-scale questionnaire and analyzed using descriptive statistics and multiple regression analysis in SPSS. The results indicated that inventory measurement and control significantly influenced profitability, while inventory valuation methods and control records had no significant effect. Despite its contributions, the study was geographically restricted and cross-sectional in nature, thus limiting generalizability and leaving a gap for longitudinal and context-specific studies in Nigerian manufacturing firms.

Panigrahi et al. (2024) conducted a systematic review to explore the impact of inventory management practices on SME performance, with emphasis on integrating technology and know-how. The study adopted a qualitative research design based on systematic literature

review methodology. The population comprised existing academic studies, from which 175 papers were initially identified and filtered to 95 relevant studies. Data were collected from databases such as Scopus, Web of Science, and Google Scholar, and analyzed through content analysis. The findings revealed that technical, technological, and behavioral know-how significantly influenced inventory management practices and SME performance. However, the study was conceptual and lacked primary empirical validation, thereby creating a gap for empirical studies in specific sectors such as manufacturing firms in Nigeria.

Abdirad and Krishnan (2022) examined the impact of e-supply chain management on service quality and customer satisfaction. The study adopted a quantitative research design using survey methodology, with a population consisting of online customers. A sample size of 150 respondents was selected, and data were collected through structured questionnaires. The data were analyzed using SPSS and structural equation modeling techniques. The findings indicated that e-supply chain management had a positive and significant impact on both service quality and customer satisfaction. However, the study was conducted within the context of online shopping in Iran, which limits its applicability to manufacturing firms and traditional supply chains, thereby creating a contextual gap for studies in Nigerian manufacturing settings.

Nilashi et al. (2023) investigated the relationship between the quality of customer relationship management (CRM) systems and customer satisfaction using online customer reviews. The study adopted a quantitative research design based on big data analytics, with a population consisting of users of CRM systems. A sample of 5,172 online reviews was collected from eight CRM platforms on the Google Play Store. Data were analyzed using advanced techniques such as Latent Dirichlet Allocation, Learning Vector Quantization, and Adaptive Neuro-Fuzzy Inference Systems. The findings showed that information quality, system quality, and service quality significantly influenced customer satisfaction. However, the study focused on digital CRM systems rather than supply chain practices, thereby creating a gap for studies linking supply chain management practices directly to organizational performance in manufacturing firms.

Bashar et al. (2024) investigated the relationship between supplier management practices and customer satisfaction in the banking industry of a developing country. The study adopted a quantitative research design using survey methodology, with a population of bank employees. A sample size of 463 respondents was selected using non-probability convenience sampling. Primary data were collected through structured questionnaires and analyzed using structural equation modeling. The findings revealed that supplier relationship practices, process management, and customer focus significantly influenced customer satisfaction, with mediation effects observed among the variables. However, the study was limited to the banking sector and a single country context, thereby creating a sectoral gap for research in manufacturing firms, particularly in Nigeria.

Study Gap

The reviewed empirical studies revealed gaps that align with the focus of this study. Although prior studies such as Barker et al. (2022) and Rodríguez et al. (2025) examined inventory-related practices, their emphasis was largely on financial performance and profitability rather than operational efficiency, leaving limited understanding of how inventory management influences day-to-day operational performance within manufacturing firms. In addition, most of these studies were conducted outside the Nigerian context, thereby limiting their applicability to firms such as BUA Cement Plc, Obu Okpella. Furthermore, studies like Bashar et al. (2024) and Abdirad and Krishnan (2022) explored supplier-related practices but focused mainly on customer satisfaction within sectors such as banking and e-commerce, with little attention given to manufacturing environments. There is also insufficient empirical evidence directly linking supplier relationship management to customer satisfaction in Nigerian manufacturing firms. These gaps in context, sector, and variable relationships underscore the need for a focused investigation into how inventory management affects operational efficiency and how supplier relationship management influences customer satisfaction in BUA Cement Plc, Obu Okpella.

Methodology

This study employed a descriptive survey research design to examine the effect of Supply Chain Management (SCM) practices specifically Inventory Management (IM) and Supplier Relationship Management (SRM) on organizational performance, measured through Operational Efficiency (OE) and Customer Satisfaction (CS), at BUA Cement Plc's integrated facility in Obu, Okpella, Edo State. The target population comprised 2,023 employees across the Obu Cement Plant (Lines 1 and 2), Okpella Quarry Unit, Power & Maintenance Unit, and Benin Administrative & Sales Office. Using Yamane's (1967) formula at a 5% margin of error, a minimum sample size of 334 was determined and increased by 20% to 401 to account for non-response. A simple random sampling technique ensured representativeness, and primary data were collected exclusively through a structured 5-point Likert scale questionnaire administered to staff in Procurement, Inventory, Production, Logistics, and Customer Service. The instrument demonstrated strong reliability, with Cronbach's Alpha values of 0.78 for OE, 0.88 for CS, 0.87 for IM, and 0.84 for SRM all exceeding Hair et al.'s (2013) 0.70 threshold. Data were analyzed using descriptive statistics and regression analysis in SPSS Version 27.0, guided by the empirical models: $OE = \alpha + \beta_1IM + \beta_2SRM + \epsilon$ and $CS = \alpha + \beta_1IM + \beta_2SRM + \epsilon$, ensuring a rigorous, valid, and contextually grounded investigation of SCM-performance linkages in Nigeria's capital-intensive cement manufacturing sector.

Data Presentation and Analysis

This section discussed the opinions of the study participants as obtained by distributing copies of the questionnaire. Descriptive statistics was used for the analysis, and Statistical

Package for Social Science (SPSS) 27 of Multiple Regression was used to evaluate the proposed hypotheses.

Administration of Questionnaire

A well-structure questionnaire was administered to some selected BUA staff for this study. However, not all the copies distributed were returned as envisaged. rate.

Response Rate

Questionnaire	Frequency	Percentage (%)
Response	379	95%
Non-response	22	5%
Total	401	100%

Source: field survey, 2025

The above table shows the response rate of the questionnaire administered for the study. Out of a total of 401 questionnaires distributed, 379 were successfully completed and returned, representing a high response rate of 95%, while only 22 questionnaires were not returned, accounting for 5% non-response. This high response rate indicates strong participation from respondents and suggests that the data collected is reliable and representative of the target population. It also reduces the likelihood of non-response bias, thereby enhancing the validity and credibility of the study's findings.

Tests of Hypotheses

Test of Hypothesis One

H_{01} : Inventory management has no significant effect on the operational efficiency of BUA Cement Plc, Obu Okpella.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.785 ^a	.616	.615	.32541
a. Predictors: (Constant), IM				

Source: SPSS Output Version 27.0

The model summary indicates a strong relationship between inventory management (IM) and operational efficiency. The correlation coefficient ($R = 0.785$) shows a high positive association between the predictor and the dependent variable. The R Square value of 0.616 implies that approximately 61.6% of the variation in operational efficiency is explained by inventory management, suggesting that the model has substantial explanatory power. The Adjusted R Square (0.615) is very close to the R Square, indicating that the model is reliable and not inflated by unnecessary variables. Additionally, the standard error of the estimate

(0.32541) is relatively low, which suggests that the model's predictions are reasonably accurate. Overall, the results demonstrate that inventory management is a significant and strong predictor of operational efficiency in the study.

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	64.099	1	64.099	605.344	.000 ^b
	Residual	39.920	377	.106		
	Total	104.020	378			
a. Dependent Variable: OE						
b. Predictors: (Constant), IM						

Source: SPSS Output Version 27.0

The ANOVA results indicate that the regression model is statistically significant in explaining the relationship between inventory management (IM) and operational efficiency (OE). The model shows a regression sum of squares of 64.099 compared to a residual sum of squares of 39.920, suggesting that a substantial portion of the variation in operational efficiency is explained by the model. The F-statistic of 605.344 is very high, and the associated significance value ($p = 0.000$) is less than the conventional threshold of 0.05, indicating that the model is highly significant. This means that inventory management has a statistically significant effect on operational efficiency, and the model provides a good fit for the data. Overall, the results confirm that the predictor variable meaningfully contributes to explaining changes in the dependent variable.

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.402	.117		11.955	.000
	IM	.715	.029	.785	24.604	.000
a. Dependent Variable: OE						

Source: SPSS Output Version 27.0

The coefficients table shows that inventory management (IM) has a strong and statistically significant positive effect on operational efficiency (OE). The unstandardized coefficient for IM ($B = 0.715$) indicates that a one-unit increase in inventory management leads to a 0.715 increase in operational efficiency, holding other factors constant. The standardized coefficient (Beta = 0.785) further confirms a strong positive relationship between the variables. The t-value for IM (24.604) is very high, and the significance level ($p = 0.000$) is well below 0.05, indicating that the effect is statistically significant. Additionally, the constant term ($B = 1.402$, $p = 0.000$) suggests that even in the absence of inventory management, there is a baseline level of operational efficiency. Overall, the results

demonstrate that inventory management is a significant and powerful predictor of operational efficiency in the model.

Test of Hypothesis two

H₀₂: Supplier relationship management has no significant effect on customer satisfaction at BUA Cement Plc, Obu Okpella.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.746 ^a	.557	.556	.33721
a. Predictors: (Constant), SRM				

Source: SPSS Output Version 27.0

The model summary indicates a strong positive relationship between supplier relationship management (SRM) and customer satisfaction. The correlation coefficient ($R = 0.746$) shows a high level of association between the predictor and the dependent variable. The R Square value of 0.557 suggests that approximately 55.7% of the variation in customer satisfaction is explained by supplier relationship management, indicating that the model has good explanatory power. The Adjusted R Square (0.556) is very close to the R Square, which implies that the model is stable and not affected by overfitting. Additionally, the standard error of the estimate (0.33721) is relatively low, indicating that the model's predictions are reasonably accurate. Overall, the results demonstrate that supplier relationship management is a strong and meaningful predictor of customer satisfaction.

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	53.956	1	53.956	474.499	.000 ^b
	Residual	42.869	377	.114		
	Total	96.825	378			
a. Dependent Variable: CS						
b. Predictors: (Constant), SRM						

Source: SPSS Output Version 27.0

The ANOVA results indicate that the regression model examining the effect of supplier relationship management (SRM) on customer satisfaction (CS) is statistically significant. The regression sum of squares (53.956) is higher than the residual sum of squares (42.869), showing that a substantial portion of the variation in customer satisfaction is explained by the model. The F-statistic of 474.499 is very large, and the corresponding significance value ($p = 0.000$) is below the 0.05 threshold, confirming that the model is highly significant. This implies that supplier relationship management has a statistically significant effect on

customer satisfaction, and the model provides a good fit for the data. Overall, the findings demonstrate that SRM is an important predictor of customer satisfaction in the study.

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.866	.147		5.888	.000
	SRM	.736	.034	.746	21.783	.000

a. Dependent Variable: CS

Source: SPSS Output Version 27.0

The coefficients table indicates that supplier relationship management (SRM) has a strong and statistically significant positive effect on customer satisfaction (CS). The unstandardized coefficient for SRM ($B = 0.736$) shows that a one-unit increase in supplier relationship management leads to a 0.736 increase in customer satisfaction, holding other factors constant. The standardized coefficient (Beta = 0.746) further confirms a strong positive relationship between the variables. The t-value for SRM (21.783) is very high, and the significance level ($p = 0.000$) is well below 0.05, indicating that the effect is statistically significant. Additionally, the constant term ($B = 0.866$, $p = 0.000$) suggests that there is a baseline level of customer satisfaction even without the influence of supplier relationship management. Overall, the results demonstrate that SRM is a significant and strong predictor of customer satisfaction in the model.

Discussion of the Findings

From the analysis, it was revealed that inventory management has a significant effect on the operational efficiency of BUA Cement Plc, Obu Okpella ($\beta = .785$, $p < .001$), explaining 61.6% of the variance in operational efficiency ($R^2 = .616$). This implied that the firm's ability to effectively plan, control, and utilize inventory constitutes a critical internal capability that drives production stability and efficiency. This finding is consistent with the empirical evidence of Rodríguez et al. (2025), who found that inventory control and measurement significantly influence organizational performance outcomes, particularly profitability. Similarly, Barker et al. (2022) established that inventory-related practices, especially when efficiently managed, contribute to improved firm performance through optimized resource utilization. In the context of a continuous-process industry such as cement manufacturing, the importance of inventory management becomes even more critical, as uninterrupted raw material supply is essential for sustaining production and avoiding costly downtime. From the Resource-Based View (RBV), effective inventory management represents a valuable organizational capability that enhances operational efficiency and provides competitive advantage. Well-structured systems supported by accurate forecasting and real-time monitoring improve production continuity, reduce idle time, and optimize capacity utilization. Therefore, BUA Cement should strengthen its inventory systems

through digital tracking, predictive analytics, and integrated planning to maintain resilience in a volatile supply environment.

Furthermore, the analysis revealed that supplier relationship management has a significant effect on customer satisfaction at BUA Cement Plc, Obu Okpella ($\beta = .746$, $p < .001$), accounting for 55.7% of the variance in customer satisfaction ($R^2 = .557$). This suggests that the firm's external relationships with suppliers play a crucial role in its ability to consistently deliver value to customers. This finding aligns with the study of Bashar et al. (2024), which demonstrated that strong supplier relationship practices significantly enhance customer satisfaction through improved coordination and service delivery. In addition, Abdirad and Krishnan (2022) found that supply chain-related practices positively influence service quality and customer satisfaction, emphasizing the importance of efficient external linkages. In the cement manufacturing industry, where production is highly dependent on timely and reliable input supply, strong supplier relationships directly influence product availability and delivery performance. From the Transaction Cost Economics (TCE) perspective, effective supplier relationship management reduces uncertainty, lowers transaction costs, and enhances coordination among supply chain partners. Strategic partnerships built on trust, communication, and performance monitoring improve supply reliability and ensure timely delivery, thereby increasing customer satisfaction. Consequently, BUA Cement should strengthen supplier relationships through strategic alliances, transparent evaluation systems, and improved information sharing to enhance supply chain efficiency and customer satisfaction.

Conclusion and Recommendations

The study examined the effect of inventory management and supplier relationship management on operational efficiency and customer satisfaction at BUA Cement Plc, Obu Okpella. The findings showed that effective inventory management improved production continuity, reduced disruptions, and enhanced resource utilization, making it a strategic capability in a challenging environment. It also revealed that strong supplier relationships ensured reliable input supply, supported timely delivery, and improved customer satisfaction. These results aligned with the Resource-Based View and Transaction Cost Economics, indicating that both internal capabilities and external partnerships are essential for achieving efficiency and sustaining customer trust in the cement industry.

Based on the findings of this study, the following recommendations are proposed for BUA Cement Plc, Obu Okpella:

- i. The company should invest in data-driven forecasting systems that use historical demand patterns and real-time data to predict material requirements more accurately. This will help reduce stockouts and prevent excessive inventory holding.
- ii. Introducing automated and centralized inventory management platforms will improve visibility across the supply chain. Real-time monitoring of stock levels can support quicker decision-making and reduce delays caused by information gaps.

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