International Journal of Management and Commerce Innovations ISSN 2348-7585 (Online)
Vol. 13, Issue 2, pp: (908-914), Month: October 2025 - March 2026, Available at: www.researchpublish.com

Supply Chain Management Processes and Firm Performance: Evidence from Iron Sheet Companies in Nairobi City County, Kenya

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DOI: https://doi.org/10.5281/zenodo.19349578

Published Date: 31-March-2026

Abstract: **The iron and steel industry is a cornerstone of economic development; however, iron sheet manufacturing firms in Kenya have faced declining performance due to inefficiencies in supply chain processes. This study investigates the effect of key supply chain management (SCM) processes; procurement, logistics, supplier relationship management, and customer relationship management on the performance of selected iron sheet manufacturing firms in Nairobi City County, Kenya. Adopting a descriptive research design, the study targeted 96 employees across 12 firms using a census sampling approach. Data were collected via structured questionnaires and analyzed using descriptive and inferential statistics, including multiple regression analysis. Results revealed that all SCM processes had a positive and statistically significant influence on firm performance, with supplier relationship management showing the strongest effect. The study concludes that enhancing SCM efficiency and integration can significantly improve organizational outcomes. It recommends that firms strengthen supplier partnerships, adopt advanced logistics systems, and implement strategic customer relationship management practices.**

Keywords: **Supply Chain Management, Procurement, Logistics, Supplier Relationship Management, Customer Relationship Management, Organizational Performance.**

1. INTRODUCTION

The iron and steel industry is a major driver of economic growth, supporting infrastructure development, industrialization, and employment creation (Amoako-Gympah, 2018; Brindha & Suseelamani, 2018). Despite its importance, the sector has experienced performance fluctuations globally, including declining profitability due to inefficiencies in supply chain coordination (Mumelo et al., 2018; KPMG, 2019).

In Kenya, iron sheet manufacturing plays a pivotal role in the economy, driven by growing urbanization and demand for affordable housing (Ndirangu & Kihia, 2018; Ventures Africa, 2019). However, firms have reported declining performance, including reduced revenue, market share, and customer satisfaction, exacerbated by rising production costs, import competition, and weak supply chain processes (Mutua & Chacha, 2024; Elsa & Bett, 2019; KAM, 2020).

Organizational performance encompasses both financial and non-financial dimensions, such as profitability, productivity, operational efficiency, and customer satisfaction (Kamau, 2021; Ittner & Larcker, 2012; Mutuku, 2019). Effective supply chain management (SCM) integrating procurement, logistics, supplier relationships, and customer interactions has been shown to improve coordination, information flow, and competitiveness, thereby enhancing firm performance (Purwanto et al., 2020; Hong et al., 2019; Kiarie, 2017).

Empirical evidence suggests that procurement management enhances performance through effective planning and supplier evaluation (Ndei & Mutuku, 2021; Nzuma, 2022), logistics management improves efficiency and customer satisfaction (Umair et al., 2019), supplier relationship management strengthens operational outcomes via collaboration (Mwangi & Muli, 2022), and customer relationship management enhances retention and revenue growth (Baiyewu, 2022; Rahman et al., 2021).

Despite contributing over 13% to Kenya's manufacturing output, the iron sheet sector continues to struggle with supply chain inefficiencies and declining performance (KAM, 2022; Okumu & Bett, 2019). Prior studies have largely focused on other sectors or contexts, creating a methodological and contextual gap in understanding how SCM processes influence firm performance in this specific industry (Nzuma, 2022; Raza et al., 2021). This study therefore examines the effect of supply chain management processes on organizational performance in iron sheet manufacturing firms in Nairobi City County, Kenya.

2. LITERATURE REVIEW

This study is grounded in three key theoretical perspectives: the Resource-Based View (RBV), the Theory of Constraints (TOC), and Game Theory, all of which provide a foundation for understanding the relationship between supply chain management processes and organizational performance. The Resource-Based View, introduced by Wernerfelt (1984) and advanced by Barney (1991) and Peteraf (1993), posits that a firm's competitive advantage and performance are largely determined by its internal resources and capabilities. Resources that are valuable, rare, inimitable, and non-substitutable enable firms to develop strategies that enhance efficiency and effectiveness (Barney, 1991). In the context of supply chain management, effective utilization and integration of these resources improve coordination and overall performance (Kotzab et al., 2015; McGahan, 2021). However, RBV has been criticized for its limited managerial applicability and insufficient consideration of external environmental factors (Priem & Butler, 2001; Collis, 1994).

The Theory of Constraints, developed by Goldratt (1984, 1990), emphasizes that organizational performance is constrained by a limited number of bottlenecks, and improvement depends on identifying and addressing these constraints. The theory focuses on optimizing key variables such as throughput, inventory, and operating expenses to enhance efficiency (Kosgei & Gitau, 2016). Within supply chains, TOC is particularly useful in identifying inefficiencies and improving processes such as procurement and supplier management. Nonetheless, it has been criticized for assuming static conditions and overlooking long-term adaptability (Yahya-Zadeh, 1999; Kaplan & Shank, 1999).

Game Theory, developed by von Neumann and Morgenstern in the 1940s, explains strategic interactions among interdependent actors whose decisions influence one another (Dai & Chen, 2012; Xu et al., 2013). In supply chain contexts, it highlights the importance of collaboration, particularly in logistics, where shared resources and coordinated decision-making can reduce costs and improve efficiency (Pan et al., 2012; Cruijssen, 2007). However, its reliance on assumptions of rational behavior and equilibrium limits its practical applicability (Guala, 2006; Kalsson, 2007).

Empirical literature demonstrates that supply chain management practices significantly influence organizational performance. Procurement management practices such as procurement planning, supplier evaluation, and contract management have been shown to positively affect performance outcomes (Sigat, 2020; Nzuma, 2022; Mutungi & Ndeto, 2023). However, many of these studies focus on different sectors and apply varied methodologies, limiting their applicability to iron sheet manufacturing firms. Similarly, logistics management including inventory control, transportation, and distribution has been found to enhance operational efficiency and customer satisfaction (Umair et al., 2019; Adelwini et al., 2023; Ifekanadu et al., 2024), though most studies are conducted outside the Kenyan context.

Supplier Relationship Management (SRM) has also been identified as a critical determinant of performance, with strong supplier collaboration, information sharing, and supplier development contributing to improved operational outcomes (Amoako-Gyampah et al., 2019; Mwangi & Muli, 2022). Despite these findings, existing studies reveal contextual gaps, particularly within Kenya's manufacturing sector. Likewise, Customer Relationship Management (CRM) enhances organizational performance by improving customer satisfaction, retention, and financial outcomes (Rahman et al., 2021; Baiyewu, 2022; Yapraklı & Aykut, 2021). However, prior research has largely focused on other industries such as hospitality and general manufacturing, thus limiting contextual relevance.

While the literature confirms a strong relationship between supply chain management practices and organizational performance, significant gaps remain. These include contextual gaps due to limited focus on Kenya's iron sheet manufacturing sector, conceptual gaps arising from studies conducted in different industries, and methodological gaps stemming from the use of diverse research designs and sampling techniques. This study therefore seeks to address these gaps by examining the effect of supply chain management processes; procurement, logistics, supplier relationship management, and customer relationship management on the organizational performance of iron sheet manufacturing firms in Nairobi, Kenya.

3. RESEARCH METHODOLOGY

This study employed a descriptive research design to examine the relationship between supply chain management practices and organizational performance among iron sheet manufacturing firms in Nairobi County, Kenya (Cooper & Schindler, 2013; Mugenda & Mugenda, 2013). The target population comprised 96 employees from 12 selected firms, drawn from procurement, sales, supply chain, and store departments. Due to the small population size, a census sampling approach was adopted (Cooper & Schindler, 2014; McCleod, 2018).

Primary data were collected using a structured questionnaire with closed-ended Likert-scale items, designed to capture demographic information and variables related to supply chain practices and organizational performance (Hyman & Sierra, 2016). A pilot study involving 10 respondents was conducted to ensure validity and reliability, with Cronbach's Alpha values exceeding the acceptable threshold of 0.70 (Alvesson & Sköldberg, 2017; Sekaran, 2019).

Data collection was conducted using a drop-and-collect method after obtaining necessary approvals and ensuring respondent confidentiality. Data were analyzed using SPSS version 23, applying both descriptive statistics (means, frequencies, standard deviations) and inferential techniques, including Pearson correlation and multiple regression. Results were presented in tables and figures for clarity.

Ethical standards were strictly upheld, including informed consent, confidentiality, and voluntary participation (Adams & Pimple, 2005).

4. RESEARCH FINDINGS AND DISCUSSIONS

4.1 Descriptive Statistics Results

Overall, respondents expressed strong agreement that supply chain management practices procurement, logistics, supplier relationship, and customer relationship management positively influence organizational performance. However, actual organizational performance was rated relatively low, indicating a disconnect between practice adoption and outcomes.

4.1.1 Procurement Management

Table 1: Procurement Management Descriptive Results

Statements	SD %	D %	N %	A %	SA %	Mean
Procurement planning boosts efficiency	6.7	3.4	7.9	31.5	50.6	4.16
Procurement policy is essential	2.2	4.5	6.7	23.6	62.9	4.40
Supplier evaluation improves performance	4.5	4.5	7.5	28.1	55.1	4.25
Information sharing boosts service delivery	6.7	4.5	7.9	37.1	43.8	4.07
Contract management is essential	3.4	2.2	9.0	25.8	59.6	4.36
Policies are monitored and updated	6.7	3.4	7.9	37.1	44.9	4.10
Aggregate Score	**5.0**	**3.8**	**7.8**	**30.5**	**52.8**	**4.22**

Respondents agreed that procurement management significantly enhances performance (M = 4.22). Procurement policy and contract management were the most influential elements, while information sharing recorded comparatively lower agreement. These findings are consistent with Sigat (2020), who established a positive relationship between procurement practices and organizational performance, and Nzuma (2022), who found that procurement planning, supplier evaluation, and contract management improve project performance.

4.1.2 Logistics Management

Table 2: Logistics Management Descriptive Results

Statements	SD %	D %	N %	A %	SA %	Mean
Inventory management improves efficiency	2.2	5.6	0.0	14.6	77.5	4.67
Transport management improves flow	1.1	1.1	2.2	24.7	70.8	4.63
Lead time increases sales	4.5	3.4	5.6	33.7	52.8	4.27
Warehouse management is essential	4.5	4.5	5.6	19.1	66.3	4.38
Physical distribution is important	2.2	1.1	4.5	22.5	69.7	4.56
Inventory is a key SCM measure	4.5	3.4	5.6	37.1	49.4	4.24
Aggregate Score	**3.2**	**3.2**	**3.9**	**25.3**	**64.4**	**4.46**

Logistics management recorded the highest agreement (M = 4.46), indicating its strong influence on performance. Inventory and transport management were identified as critical drivers of efficiency. These findings align with Umair et al. (2019), who found a strong relationship between logistics elements and customer satisfaction, and Wasike and Juma (2020), who reported that logistics practices enhance timely delivery and operational efficiency.

4.1.3 Supplier Relationship Management

Table 3: Supplier Relationship Management Results

Statements	SD %	D %	N %	A %	SA %	Mean
Supplier responsiveness is essential	4.5	2.2	4.5	36.0	52.8	4.30
Supplier quality metrics are vital	4.5	3.4	6.7	37.1	48.3	4.21
On-time delivery boosts efficiency	0.0	0.0	2.2	22.5	75.3	4.73
Supplier compliance enhances delivery	7.9	2.2	5.6	36.0	48.3	4.15
Communication improves performance	1.1	3.4	4.5	25.8	65.2	4.51
Quality metrics utilization is essential	4.5	1.1	2.2	21.3	70.8	4.53
Aggregate Score	**3.8**	**2.1**	**4.3**	**29.8**	**60.1**	**4.41**

Supplier relationship management was also rated highly (M = 4.41), with on-time delivery and communication emerging as key determinants. This supports Amoako-Gyampah et al. (2019), who found that supplier relationships enhance firm performance through operational flexibility, and Poku (2022), who reported a positive link between SRM and organizational performance.

4.1.4 Customer Relationship Management

Table 4: Customer Relationship Management Results

Statements	SD %	D %	N %	A %	SA %	Mean
Sales cycle length is important	11.2	3.4	7.9	38.2	39.3	3.91
Customer lifetime rate is vital	10.1	3.4	9.0	38.2	39.3	3.93
Customer retention ensures productivity	3.4	2.2	5.6	29.2	59.6	4.39
Expansion revenue improves efficiency	1.1	2.2	4.5	29.2	62.9	4.51
Sales cycle enhances performance	10.1	3.4	6.7	40.4	39.3	3.96
Customer retention is essential in SCM	11.2	3.4	9.0	37.1	39.3	3.90
Aggregate Score	**7.9**	**3.0**	**7.1**	**35.4**	**46.6**	**4.10**

Customer relationship management showed moderate agreement (M = 4.10), with customer retention and revenue expansion being the most influential factors. These findings are consistent with Yapraklı and Aykut (2021) and Rahman et al. (2021), who both found that CRM significantly enhances organizational performance.

4.1.5 Organizational Performance

Table 5: Organizational Performance Results

Statements	SD %	D %	N %	A %	SA %	Mean
Increased sales	7.9	7.9	10.1	33.7	40.4	3.91
Improved efficiency	7.9	4.5	7.9	37.1	42.7	4.02
Improved service delivery	46.1	20.2	18.0	6.7	9.0	2.12
Customer satisfaction prioritized	51.7	30.3	13.5	0.0	4.5	1.75
Increased productivity	46.1	42.7	11.2	0.0	0.0	1.65
Aggregate Score	**31.9**	**21.1**	**12.1**	**15.5**	**19.3**	**2.69**

Despite strong SCM practices, organizational performance was rated low (M = 2.69). Respondents reported poor outcomes in customer satisfaction, service delivery, and productivity. These findings align with reports by Kenya Association of Manufacturers (2022) and Okumu and Bett (2019), which highlight declining performance in the iron and steel sector, as well as Mutua and Chacha (2024), who observed reduced competitiveness and customer-related outcomes.

4.2 Regression Analysis Results

Table 6: Model Summary

R	R Square	Adjusted R Square	Std. Error
0.905	0.819	0.796	1.002

The model explains 79.6% of variation in organizational performance.

Table 7: ANOVA Results

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	96.748	4	24.187	30.197	0.004
Residual	67.281	84	0.801		
Total	164.029	88			

The model is statistically significant (p = 0.004).

Table 8: Regression Coefficients

Variable	B	Std. Error	Beta	t	Sig.
Constant	0.628	0.304	–	2.066	0.003
Procurement Management	0.709	0.229	0.0512	3.096	0.004
Logistics Management	0.775	0.306	0.0167	2.533	0.001
Supplier Relationship Management	0.803	0.294	0.0334	2.731	0.002
Customer Relationship Management	0.796	0.226	0.0416	3.522	0.003

All variables had a positive and statistically significant effect on organizational performance. These findings are consistent with Mutungi and Ndeto (2023), Ifekanadu et al. (2024), Mwangi and Muli (2022), and Baiyewu (2022), who all reported significant positive relationships between supply chain practices and firm performance.

5. CONCLUSIONS AND RECOMMENDATIONS

This study concludes that supply chain management practices procurement, logistics, supplier, and customer relationship management play a pivotal role in shaping organizational performance among iron sheet manufacturing firms in Nairobi City County, Kenya. Procurement management emerged as a key determinant of firm success, with well-structured procurement policies, effective supplier evaluations, and robust contract management significantly enhancing efficiency, reducing production costs, and improving service delivery (Mutungi & Ndeto, 2023; Sigat, 2020; Nzuma, 2022). Strategic procurement planning ensures optimal resource utilization and sustainable organizational performance.

Logistics management was also found to substantially influence organizational performance. Efficient inventory systems, transport management, warehouse organization, and coordinated physical distribution reduce wastage, prevent stock-outs, ensure timely delivery, and enhance overall responsiveness (Umair et al., 2019; Wasike & Juma, 2020). Organizations adopting modern logistics practices are better positioned to achieve cost reductions and meet customer expectations, ultimately securing a competitive advantage. Supplier relationship management significantly affects firm performance by improving operational efficiency, reducing disruptions, and fostering trust and collaboration. Long-term partnerships with reliable suppliers and the use of quality metrics strengthen resilience, innovation, and market competitiveness (Amoako-Gyampah et al., 2019; Poku, 2022; Mwangi & Muli, 2022).

Customer relationship management (CRM) was shown to directly enhance organizational performance. Effective CRM improves customer retention, loyalty, and revenue growth while optimizing sales cycle management and customer satisfaction (Yapraklı & Aykut, 2021; Rahman et al., 2021; Baiyewu, 2022). Firms leveraging strategic CRM systems and personalized customer engagement gain a sustainable competitive edge.

Based on these findings, the study recommends that iron sheet manufacturing firms adopt comprehensive, transparent procurement policies, regularly evaluate suppliers, and strengthen contract management. Modern inventory and warehouse systems, efficient transport management, and logistics forecasting are advised to enhance operational efficiency. Firms

should foster long-term, trust-based relationships with suppliers and integrate supplier performance metrics and collaborative innovation initiatives. Finally, advanced CRM systems, employee training, and data-driven customer engagement strategies are essential to improve customer retention, satisfaction, and overall organizational performance.

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