African Journal of Emerging Issues
Peer reviewed | Double blind | Interdisciplinary

African Journal of Emerging Issues (AJOEI)
Online ISSN: 2663 - 9335
Available at: https://ajoeijournals.org

SUPPLY CHAIN MANAGEMENT

SUPPLY CHAIN FINANCING AND PERFORMANCE OF RETAIL FIRMS IN NAIROBI CITY COUNTY, KENYA

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Publication Date: September, 2026

ABSTRACT

Purpose of the Study: This study examined the effect of Supply Chain Financing (SCF) on the performance of retail firms in Nairobi City County, Kenya.

Statement of the Problem: Retail firms in Kenya face working capital constraints, liquidity pressures, delayed invoice settlement, and cash conversion challenges that may disrupt procurement and supplier relationships. Although SCF provides alternative mechanisms for improving liquidity and payment coordination, empirical evidence on the independent contribution of specific SCF practices to retail firm performance in Kenya remains limited. The study therefore examined factoring, reverse factoring, trade credit, and dynamic discounting separately within the Nairobi City County retail context.

Research Methodology: The study adopted a quantitative explanatory research design. The target population comprised 66 managers from 11 purposively selected structured retail establishments in Nairobi City County. Purposive sampling was used to select respondents with responsibilities in finance, logistics, procurement, materials management, and operations. Primary data were collected using a structured questionnaire. Data were analyzed using descriptive statistics, Pearson product moment correlation, and ordinary least squares multiple linear regression, together with regression diagnostic tests.

Results: Factoring was a positive and statistically significant predictor of retail firm performance ($B = 0.256$, $p < 0.001$). Reverse factoring was also significant ($B = 0.184$, $p < 0.001$), as were trade credit ($B = 0.263$, $p < 0.001$) and dynamic discounting ($B = 0.240$, $p < 0.001$). The overall regression model was statistically significant, $F(4, 55) = 69.81$, $p < 0.001$, and explained 83.5% of the variation in retail firm performance ($R^2 = 0.835$; adjusted $R^2 = 0.824$).

Conclusion: Factoring, reverse factoring, trade credit, and dynamic discounting were each positively and significantly associated with retail firm performance in the multivariate model.

Recommendations: Retail firms should strengthen the use and governance of trade credit, factoring, reverse factoring, and dynamic discounting in line with their working capital needs and supplier arrangements.

Keywords: *Supply Chain Financing, Factoring, Reverse Factoring, Trade Credit, Dynamic Discounting, Retail Firm Performance*

INTRODUCTION

Supply Chain Financing (SCF) is used to improve working capital flows across supply networks by linking financing arrangements with commercial transactions (Beka Be Nguema et al., 2022; Wagner & Wetzel, 2025). Retail firms operate through interconnected relationships involving suppliers, financial institutions, distributors, and customers, making effective management of cash flows essential for maintaining operational continuity and service delivery. In Kenya, retail firms continue to operate within a challenging business environment characterized by liquidity constraints, rising operating costs, supplier payment pressures, and restricted access to conventional financing. According to the Central Bank of Kenya (CBK, 2024), credit conditions remain highly restrictive due to strict commercial bank collateral policies, leaving many mercantile firms with limited formal credit lines. Furthermore, report data from the Kenya National Bureau of Statistics (KNBS, 2024) demonstrates that escalating utility tariffs and overheads have inflated general operating costs across the sector, while the (RETRAK, 2024) examines that prolonged payment settlement delays have severely worsened supplier payment pressures and cash flow defaults. These challenges can affect procurement activities, inventory availability, service delivery, and customer satisfaction. Consequently, alternative financing mechanisms such as factoring, reverse factoring, trade credit, and dynamic discounting have gained importance as potential approaches to improving working capital management and supporting retail firm performance.

SCF has attracted increasing attention because it can improve financial coordination between buyers and suppliers while supporting supply chain continuity (Beka Be Nguema et al., 2022; Wagner & Wetzel, 2025). Factoring enables firms to obtain immediate liquidity through the financing of receivables, while reverse factoring allows suppliers to access financing based on the credit standing of their buyers. Trade credit provides buyers with an opportunity to defer payment for goods and services, whereas dynamic discounting enables suppliers to receive earlier payment in exchange for discounts that vary according to the timing of settlement. These mechanisms provide different approaches to addressing working capital requirements and strengthening financial coordination among supply chain participants. In Kenya, the relevance of SCF is particularly important because financing constraints can affect the ability of retail firms to maintain reliable supplier relationships and sustain efficient operations.

The performance of retail firms is reflected in their ability to achieve operational efficiency, effective service delivery, and customer satisfaction. The adoption of appropriate SCF

mechanisms may therefore influence retail performance by supporting liquidity management, improving coordination with suppliers, and facilitating continuity in procurement and inventory-related activities. This study investigates the effect of SCF on the performance of retail firms in Nairobi City County, with particular focus on factoring, reverse factoring, trade credit, and dynamic discounting. The study seeks to provide empirical evidence on the extent to which these individual financing mechanisms contribute to retail firm performance and thereby address the limited empirical evidence on SCF practices within the Kenyan retail context.

Statement of The Problem

Retail firms depend on continuous inventory replenishment and timely supplier settlement, yet liquidity constraints and working capital pressures can disrupt these activities. Within the Kenyan domestic retail sector, these operational constraints have precipitated acute liquidity deficiencies, forcing several prominent market actors into restructuring processes, regional downsizing, or outright liquidation due to insurmountable debt burdens, intense market competition, soaring operational overheads, and protracted supplier defaults (Nyongesa & Atieno, 2023; Central Bank of Kenya , 2024, KNBS, 2024). Consequently, multiple corporate entities are unable to sustain streamlined process efficiency, fulfill vendor payment obligations punctually, safeguard on-shelf inventory depths, or execute dependable consumer-centric services (International Finance Corporation, 2022; World Bank, 2023).

While alternative value-chain credit mechanisms present actionable capital optimization pathways to enhance asset rotation efficiency and harmonize transactional interfaces between purchasing entities and upstream vendor channels, contemporary empirical literature remains inconclusive. Existing supply chain financing (SCF) studies show potential benefits for liquidity, coordination, and operational performance, but much of the evidence treats SCF as a broad, aggregate construct or is drawn from contexts outside the Kenyan retail sector (Beka Be Nguema et al., 2022; Wagner & Wetzel, 2025; Zhang et al., 2025). This over-reliance on aggregated indicators masks how separate cash rotation tools operate under local constraints, leaving a distinct contextual, conceptual, and methodological gap regarding the independent contribution of factoring, reverse factoring, trade credit, and dynamic discounting to retail firm performance in Nairobi City County. The study addressed this gap by examining the four mechanisms separately and relating them directly to operational efficiency, service delivery quality, and customer satisfaction.

Research Objective

To evaluate the effect of Supply Chain Financing on the performance of retail firms in Nairobi City County, Kenya.

Research Question

How does Supply Chain Financing affect the performance of retail firms in Nairobi City County, Kenya?

THEORETICAL FRAMEWORK

The study was anchored on the Pecking Order Theory as the primary framework, complemented by the Resource-Based View (RBV) Theory and Transaction Cost Economics (TCE) Theory. These theories provide a basis for explaining firms' financing decisions, the strategic use of resources, and the governance of transactions within supply networks. Collectively, they provide a theoretical foundation for examining how factoring, reverse factoring, trade credit, and dynamic discounting influence the performance of retail firms in Nairobi City County.

Pecking Order Theory, advanced by Myers and Majluf (1984), serves as the primary theoretical framework for this study by explaining financing choices under information asymmetry and proposing a preference for internally generated funds before external financing. The theory is primary because it directly explains the financial behavior of retail firms when adopting supply chain financing practices to resolve immediate short-term capital shortfalls. In this study, the theory is relevant because SCF mechanisms provide alternative sources and timing arrangements for short-term financing. Factoring, reverse factoring, trade credit, and dynamic discounting can therefore be viewed as financing choices that influence liquidity and working capital management. The theory provides a basis for examining how financing choices relate to firm performance, although it does not by itself explain the resource capability and transaction governance dimensions of SCF.

The Resource Based View serves as a complementary theory that builds upon the Pecking Order Theory by explaining how valuable financial resources and organizational capabilities can support competitive advantage (Barney, 1991; Wernerfelt, 1984). While the primary theory justifies the selection of financing choices when internal funds are inadequate, the Resource

Based View explains how these choices function as strategic financial resources that strengthen firms' ability to manage working capital and coordinate supply chain activities. For retail firms, capabilities in working capital management, supplier coordination, and the use of financial systems may enable more effective application of SCF. These capabilities can support continuity of inventory supply, process efficiency, service delivery, and customer satisfaction. The Resource Based View therefore provides a basis for linking the effective deployment of SCF-related resources and capabilities to retail firm performance.

Transaction Cost Economics further complements the other theories by explaining the governance of exchanges among buyers, suppliers, and financiers (Williamson, 1985; Ketokivi & Mahoney, 2020). While the primary and second frameworks address capital choice hierarchy and internal capabilities respectively, Transaction Cost Economics explains how formal contractual structures improve efficiency and minimize transaction-related friction across supply networks. Clear contractual arrangements, timely information, and efficient payment processes can reduce coordination and transaction costs within supply networks. In SCF, these mechanisms are relevant to factoring agreements, reverse factoring programmes, trade credit terms, and dynamic discounting arrangements. Transaction Cost Economics therefore complements the other theories by explaining how governance and transaction efficiency may shape the performance implications of SCF.

The study's conceptual framework follows directly from these theoretical propositions. The four independent mechanisms represent the explicit financing instruments derived from Pecking Order Theory, which are operationalized as strategic capabilities under the Resource Based View and managed through the formal contractual relationships outlined by Transaction Cost Economics. Consequently, the optimization of these combined levers drives the downstream operational and process-driven efficiencies that directly enhance retail firm performance.

EMPIRICAL REVIEW

Supply Chain Financing (SCF) has increasingly been recognized as an important mechanism for improving the coordination, liquidity management, and operational effectiveness of firms within interconnected supply networks. It encompasses financing arrangements that facilitate the movement of funds between buyers, suppliers, and financial institutions while supporting the continuity of commercial transactions. This section reviews empirical literature on SCF,

with particular focus on factoring, reverse factoring, trade credit, and dynamic discounting and their relevance to the performance of retail firms. The review considers how these financing practices influence operational efficiency, service delivery quality, and customer satisfaction, while also identifying conceptual, contextual, and methodological gaps that justify the present study.

In the context of factoring, Wagner and Wetzel (2025) examined how SCF arrangements influence the relationship between trade payables management and corporate performance. Using a mixed empirical approach that integrated qualitative interviews, web-based transactional data, documentary evidence, and econometric analysis, the authors established that firms using integrated SCF arrangements achieved higher working capital efficiency than firms relying on conventional commercial credit. However, the study concentrated mainly on accounting and financial performance outcomes and treated SCF as an aggregated financing construct. This creates a clear conceptual and methodological gap, as non-financial success metrics were omitted and factoring was not isolated as an independent predictor. The baseline investigation within Nairobi City County overcomes this limitation by evaluating factoring separately against operational efficiency, service delivery quality, and customer satisfaction metrics.

Similarly, Zhang et al. (2025) investigated SCF within the Chinese retail sector, using a quantitative approach to model data elements. The findings revealed that structured value-chain financing significantly improved inventory turnover, liquidity management, and operational performance among retail firms. Although these results demonstrate the potential contribution of SCF to retail operations, the study was undertaken within a highly developed financial and digital environment that differs from the Kenyan commercial landscape. Furthermore, the analysis evaluated SCF broadly rather than isolating factoring as a distinct financing practice. This contextual and conceptual deficit is resolved in this inquiry by testing the specific contribution of factoring within the unique regulatory and economic environment of retail firms operating in Nairobi City County.

Reverse factoring has also received empirical attention because of its potential to strengthen financial coordination between buyers and suppliers. De Goeij et al. (2021) examined the factors influencing small and medium-sized supplier participation in reverse factoring programmes using a qualitative empirical approach anchored on a transaction cost economics perspective. The study established that supplier participation was heavily affected by

relationship characteristics, perceived benefits, and transaction cost considerations. While the study demonstrated that reverse factoring can improve supply chain coordination by enabling suppliers to obtain earlier payment based on the buyer's credit position, the investigation focused primarily on supplier participation choice rather than anchor firm performance outcomes. By shifting the unit of analysis away from supplier acceptance and focusing on the performance of retail firms within Nairobi City County, the current inquiry addresses this clear operational gap.

Beka Be Nguema et al. (2022) examined the relationship between SCF and organizational performance by analyzing primary survey data through structural equation modelling. The study established that SCF strengthened organizational performance through improved operational efficiency and coordination across supply chain activities. Nevertheless, the empirical framework treated SCF as a broad financing concept, making it difficult to establish the independent contribution of reverse factoring. Additionally, the field data was gathered entirely outside the Kenyan retail sector, limiting its direct applicability. This dual conceptual and contextual gap is addressed in this paper by evaluating reverse factoring independently and relating it directly to the performance dimensions of retail enterprises within Nairobi City County.

Wagner and Wetzel (2025) established that corporate entities adopting integrated value-chain finance arrangements achieved substantially higher short-term capital velocity than counterparties reliant on standard commercial credit lines. Their econometric estimation confirmed that synchronized funding frameworks optimize capital circulation, yet the accompanying analysis over-indexed on macro-level working capital ratios and did not evaluate reverse factoring as a distinct financing practice. Moving from cross-sector data to a specialized consumer-facing market, Zhang et al. (2025) observed that structured supply chain strategies optimized inventory depths, mitigated raw ledger strains, and supported baseline operations within the Chinese retail economy. While these quantitative findings confirm the operational value of value-chain credit lines, the model evaluated the funding construct as a monolithic system and was executed within a highly advanced digital financial ecosystem. These historical accounts underscore the strategic relevance of structured financing models but highlight a clear contextual and conceptual omission regarding the unique performance contributions of independent reverse factoring facilities under local market parameters.

Trade credit represents another critical capital optimization mechanism because it enables procurement entities to acquire current inventory while post-poning instantaneous cash outlays. To model this operational pathway, Emtehani et al. (2023) evaluated the strategic utility of vendor-provided credit under conditions of strict institutional capital rationing using a multi-leader-follower game-theoretic modeling architecture. Their mathematical simulation established that formalizing deferred settlement channels expands short-term liquidity availability and protects daily value-chain coordination. However, the reliance on theoretical abstract equations rather than field-based tracking of active retail establishments creates a clear methodological gap, leaving the relationship between trade credit and non-financial output metrics unverified.

Investigating the relational boundaries that alter these credit arrangements, Parviziomran and Elliot (2023) applied an analytical network research design to evaluate how structural bargaining power and negotiation leverage dictate trade credit distribution within industrial supply networks. Their evidence demonstrated that trade credit effectively functions as an internal governance lever that coordinates inter-firm dependency and aligns risk allocation among trading partners. Despite these insights, the research focused heavily on upstream supplier network power dynamics and did not measure downstream retail firm execution or address the unique institutional constraints of the Kenyan mercantile sector.

From a broader corporate asset optimization perspective, Kiymaz et al. (2024) conducted a cross-sectional quantitative analysis using firm-level accounting data to assess how working capital management dictates corporate outcomes across a comparative sample of developed and emerging economies. Their regression outcomes proved that the efficient rotation of current assets and short-term obligations significantly drives corporate outperformance, though the absolute statistical strength of this link varied based on regional institutional maturity. This analysis treats short-term liabilities as an aggregated accounting policy rather than isolating trade credit as an independent supply chain finance mechanism.

To evaluate this relationship within a regional framework, Kayani et al. (2025) estimated regression models using corporate financial data from emerging African capital markets, concluding that working capital optimization expands organizational capacity by accelerating cash velocity, refining process flows, and maximizing asset configuration. While this regional focus provides valuable insights into resource constraints, the study evaluated cash conversion cycles as a holistic financial policy and paid no attention to non-financial success metrics

within specialized consumer-facing retail networks. This empirical deficit is addressed in this paper by separating trade credit from general current liabilities and testing its direct relationship with operational efficiency, service quality, and customer satisfaction.

Dynamic discounting has also emerged as an important SCF practice for improving payment efficiency and financial coordination. Song et al. (2023) evaluated flexible early-settlement frameworks managed through automated financial data-matching portals using a mathematical simulation design. Their simulation proved that dynamic early-payment discounts systematically optimize cash utilization, expand settlement flexibility, and lower transactional friction among supply network actors. Although their findings highlight that cloud-based funding infrastructure elevates transaction visibility, the study relied strictly on platform optimization simulations and focused on technological mechanisms rather than testing real-world firm-level performance metrics.

Expanding on these strategic selection frameworks, company decision-making choices were further scrutinized by Yang et al. (2026), who estimated theoretical modeling structures to evaluate early-payment discount optimization within supply chain funding networks. Their analytical equations verified that variable discount terms support working capital configuration and operational continuity by allowing corporate buyers to calibrate invoice settlement timelines relative to real-time internal cash demands. Nevertheless, the reliance on virtual simulations rather than primary data fields gathered from operating businesses creates a distinct methodological void, masking how these flexible arrangements shape downstream brick-and-mortar retail performance.

This limitation is similarly present in the broader value-chain literature. Beka Be Nguema et al. (2022) gathered primary survey data and utilized structural equation modeling to analyze how supply chain financing shapes corporate performance, demonstrating that optimized funding paths upgrade organizational outcomes by driving internal process efficiencies and dampening logistical vulnerabilities. While this confirms the operational value of integrated financing, the statistical model treated the construct as an undifferentiated system, failing to isolate dynamic discounting as an independent financing practice. This paper addresses these separate conceptual limitations by treating dynamic discounting as a standalone predictor variable and evaluating its unmediated effect on retail firm performance.

Conceptual FRAMEWORK

The conceptual framework treated factoring, reverse factoring, trade credit, and dynamic discounting as the independent dimensions of Supply Chain Financing, while retail firm performance was the dependent variable. Retail firm performance was assessed through operational efficiency, service delivery quality, and customer satisfaction. The framework proposed that the four SCF mechanisms would each be positively associated with retail firm performance.

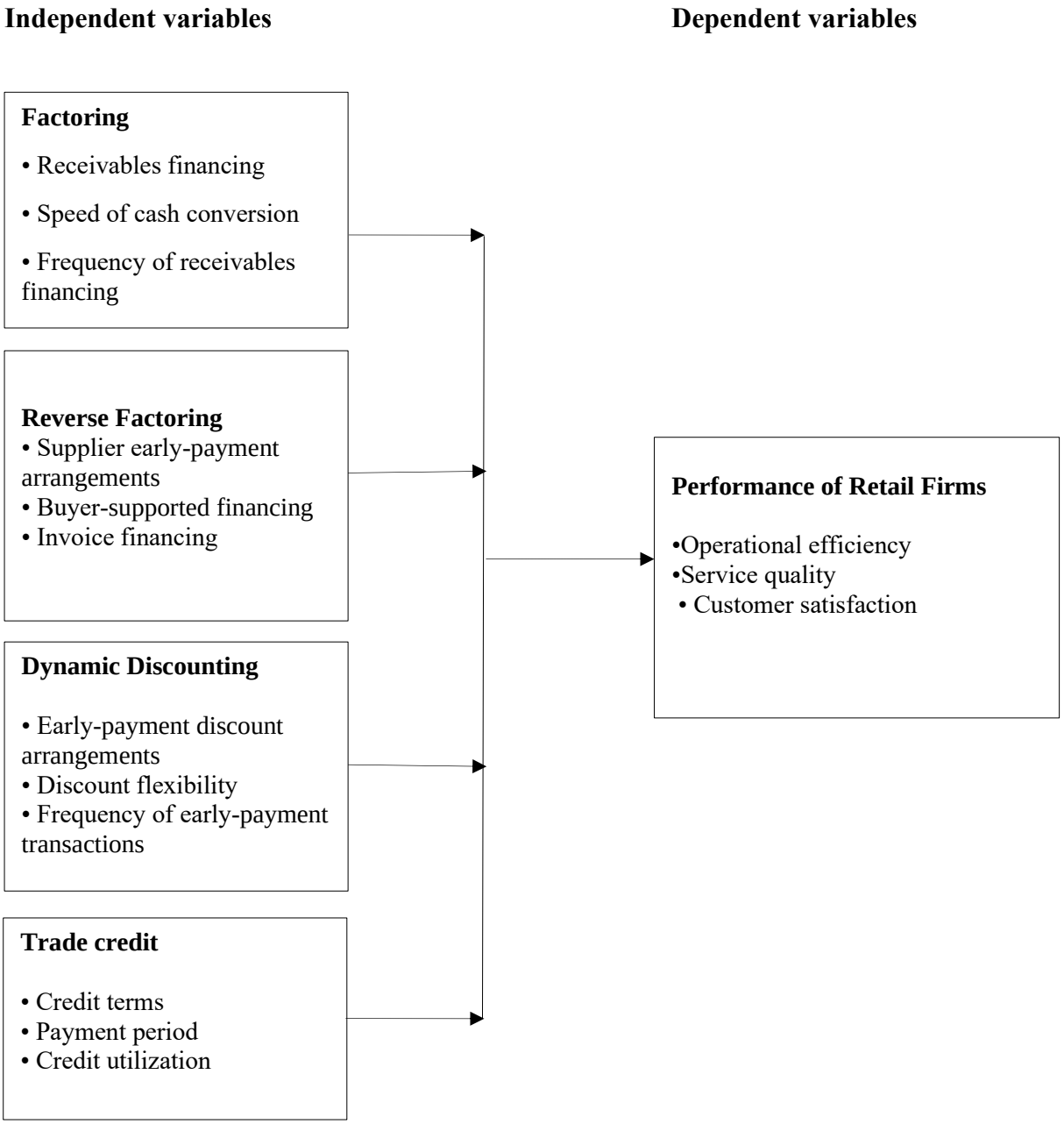

Figure 1: Conceptual Framework

RESEARCH METHODOLOGY

This study adopted a quantitative explanatory research design to systematically evaluate and quantify the causal links between separate supply chain financing mechanisms and retail enterprise performance. Explanatory frameworks are highly appropriate when testing the direction, mathematical magnitude, and statistical significance of proposed dependencies backed by field data. The structural scope of this methodology anchors accounts receivable factoring (X_1), corporate reverse factoring (X_2), supplier trade credit (X_3), and automated dynamic discounting (X_4) as the independent variables, whereas the overarching performance of retail firms (Y) serves as the core dependent variable.

The target population comprised 66 managerial respondents drawn from 11 selected structured retail establishments operating within Nairobi City County, Kenya. The specific institutional sampling frame included Naivas Supermarket, Quickmart Supermarket, Cleanshelf Supermarket, Magunas Supermarket, Eastmatt Supermarket, China Square Kenya, Khetia's Supermarket, Muhindi Mweusi Supermarket, Kassmatt Supermarket, Jaza Supermarket, and Powerstar Supermarket. The deliberate selection of these 11 target firms is justified because they represent the complete census of formally registered, large-scale structured retail entities within Nairobi County that run fully operational procurement, corporate finance, logistics, and material management divisions. Purposive sampling was used to identify 6 key informants within each establishment who possess direct technical oversight and operational data regarding the variables under review: the Head of Procurement, Finance Manager, Inventory Controller, Supply Chain Officer, Accounts Officer, and Operations Manager. This specific respondent selection captures highly qualified viewpoints from the functional domains directly responsible for coordinating corporate capital portfolios and value-chain interfaces.

Primary data were gathered using a structured questionnaire engineered around closed-ended, multi-item psychometric metrics. The instrument was operationalized into two main sections: Section A captured general demographic data and background variables, while Section B measured the research constructs using a uniform five-point Likert scale (where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree). Factoring was tracked via metrics assessing receivables financing, cash conversion speed, and utilization frequencies. Reverse factoring was evaluated through early-payment arrangements and buyer-backed lines, while trade credit focused on supplier credit terms, length of repayment periods, and credit volume utilization. Dynamic discounting was operationalized through early-settlement terms

and early-payment transaction patterns. The dependent variable, retail firm performance, was operationalized using three performance dimensions: process-driven operational efficiency, service delivery quality, and customer satisfaction metrics.

A pilot study was conducted before full field deployment to evaluate instrument clarity, check relevance, and clean up ambiguous statements. Seven managerial personnel were purposively selected from a structured retail entity that shared identical characteristics with the target institutions but was completely excluded from the final sample to control for potential response bias. This pilot sample represented approximately 10% of the total target population, which matches standard empirical benchmarks for questionnaire pretesting. Data validity was confirmed using face, content, and construct validation checks. Academic supervisors from St. Paul's University alongside two retail supply chain practitioners critically audited the draft questionnaire items against the core objectives to secure high content validity. Scale reliability was tested by computing Cronbach's alpha coefficients for each multi-item scale configuration. In line with traditional psychometric requirements, an alpha threshold of 0.70 was established as the minimum baseline for acceptable internal consistency. The diagnostic testing yielded robust scale reliability parameters: Factoring ($\alpha = 0.798$), Reverse Factoring ($\alpha = 0.751$), Trade Credit ($\alpha = 0.700$), Dynamic Discounting ($\alpha = 0.757$), and Performance ($\alpha = 0.894$), confirming the questionnaire was stable for field application.

Rigorous ethical procedures were maintained throughout the operational lifespan of the project. Institutional authorization was secured via the issuance of an ethical clearance letter from the St. Paul's University Institutional Science and Ethics Review Committee (ISERC) under approval number 715. Statutory research licensing was subsequently granted by the National Commission for Science, Technology and Innovation (NACOSTI) under license number NACOSTI/P/26/418764. Field authorization was formally obtained from the executive management of the 11 retail corporations using an official university introduction letter. Participation was entirely voluntary, and signed informed consent was obtained from each respondent. Complete anonymity and strict confidentiality were preserved by ensuring no personal data or corporate identities were exposed in the final text. The drop-and-pick method was utilized for survey administration over a two-week window; out of the 66 questionnaires distributed, 60 were completed and validated for analysis, representing a highly satisfactory response rate of 90.9%.

The structural model specification for the multiple linear regression equation was formulated under ordinary least squares (OLS) assumptions to capture the individual contributions of each predictor block:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where:

- Y is the composite score for retail firm performance
- β_0 represents the model intercept constant
- β_1, β_2, β_3, and β_4 are the unstandardized regression coefficients
- X_1 is Factoring
- X_2 is Reverse Factoring
- X_3 is Trade Credit
- X_4 is Dynamic Discounting
- ε is the stochastic error term

To verify data suitability and protect the validity of parametric inference testing, classical linear regression assumption diagnostic tests were conducted before running the multiple linear regression model. Normality was checked using the Shapiro-Wilk test, where a failure to reject the null hypothesis ($p > 0.05$) indicated the residuals were normally distributed. Multicollinearity constraints were checked by tracking the Variance Inflation Factor (VIF) and corresponding tolerance parameters, applying a standard decision rule where a VIF < 10 and a tolerance > 0.10 confirmed the predictors were free from high linear intercorrelation. Constant error variance was audited via the Breusch-Pagan/Cook-Weisberg test for heteroscedasticity, where a significance threshold of $p > 0.05$ meant failing to reject the null hypothesis of homoscedasticity. Finally, model specification was verified by estimating the Ramsey RESET test, where an output value of $p > 0.05$ confirmed the mathematical form was correctly specified and clear of omitted variable bias. Data processing and mathematical estimation were executed using descriptive statistics, Pearson product-moment correlation, and multiple regression Models. Regression.

FINDINGS AND DISCUSSION

This section presents the descriptive statistics, correlation analysis, and regression results.

DESCRIPTIVE STATISTICS

The descriptive results for the independent variables were evaluated using the composite means and standard deviations derived from the individual questionnaire statements. Responses were captured on a uniform five-point Likert scale, where the mean scores were interpreted using the following standard institutional thresholds: 1.00 to 1.80 represents very low agreement (strongly disagree), 1.81 to 2.60 represents low agreement (disagree), 2.61 to 3.40 represents moderate agreement (neutral), 3.41 to 4.20 represents high agreement (agree), and 4.21 to 5.00 represents very high agreement (strongly agree). The individual composite mean score for each distinct supply chain financing practice was mathematically calculated by aggregating the raw metrics of its four specific indicator items and dividing by the total number of sub-construct parameters, ensuring direct computational alignment with the statistical matrix compiled in Table 1.

The results in Table 1 show an overall composite mean score of 3.99 (SD = 0.87) for the global Supply Chain Financing construct, indicating generally high agreement with the statements on SCF practices across the sampled retail enterprises. Trade credit recorded the highest composite mean score (M = 4.23, SD = 0.77), which represents a very high level of managerial endorsement. This was followed systematically by dynamic discounting (M = 4.06, SD = 0.87), factoring (M = 3.87, SD = 0.99), and reverse factoring (M = 3.83, SD = 0.97), all of which fall firmly within the high agreement Likert spectrum.

Analyzing the granular item-level metrics, the highest rated individual statement was that trade credit enables the firm to maintain continuous inventory supply (M = 4.33, SD = 0.73), which falls within the very high agreement range and highlights the vital operational reliance on vendor-backed logistics pipelines. Conversely, the lowest rated statement within the data matrix was that the firm uses factoring to obtain immediate cash from receivables (M = 3.52, SD = 1.13), indicating a comparatively lower frequency of execution or greater baseline friction within local asset conversion loops. Overall, the descriptive results suggest that trade credit and dynamic discounting were more strongly endorsed than factoring and reverse factoring among the sampled managers, reflecting the relative institutional maturity and ease of execution

characterizing these value-chain credit choices within the Nairobi City County mercantile sector.

Table 1: Supply Chain Financing Descriptive Statistics

Statement	M	SD
Our firm uses factoring to obtain immediate cash from receivables.	3.52	1.13
Factoring has improved our firm's liquidity and cash flow management.	3.80	1.02
The use of factoring improves the firm's cash flow management.	4.05	0.91
Factoring helps the firm maintain smooth business operations.	4.10	0.92
Our firm cooperates with financial institutions to implement reverse factoring.	3.70	1.06
Reverse factoring allows suppliers to receive payments earlier.	3.78	0.98
Reverse factoring enhances relationships between the firm and its suppliers.	3.88	0.98
Reverse factoring contributes to better management of supplier payments.	3.97	0.88
Our firm receives favourable trade credit terms from suppliers.	4.13	0.77
Trade credit allows the firm to obtain goods and pay suppliers later.	4.25	0.84
Trade credit supports the firm in managing short-term financial obligations.	4.18	0.73
Trade credit enables the firm to maintain continuous inventory supply.	4.33	0.73
Our firm takes advantage of early payment discounts offered by suppliers.	4.17	0.83
Dynamic discounting helps reduce the cost of purchases.	4.07	0.90
The firm uses dynamic discounting to manage supplier payments efficiently.	3.80	0.94
Dynamic discounting strengthens collaboration between the firm and suppliers.	4.22	0.80
Overall Mean Score	**3.99**	**0.87**

Correlation Analysis

Pearson product-moment correlation analysis was conducted to determine the linear nature, mathematical direction, and absolute magnitude of the statistical associations between the independent supply chain financing mechanisms and retail firm performance. The bivariate correlation matrix was computed across a complete validation sample size of $N = 60$ active managerial respondents. The resulting statistical outputs indicate that all four investigated

supply chain financing practices maintain positive and statistically significant linear associations with the dependent performance construct at the 5% level of significance ($p < 0.05$).

Factoring recorded the strongest positive linear association with retail firm performance ($r = 0.742$, $p < 0.001$). This was followed closely by supplier trade credit ($r = 0.738$, $p < 0.001$) and automated dynamic discounting ($r = 0.703$, $p < 0.001$), representing strong positive associations. Corporate reverse factoring recorded the lowest, although still positive and statistically meaningful, linear association with the dependent performance metrics ($r = 0.560$, $p < 0.001$). These preliminary findings indicate that higher levels of application of the respective supply chain financing practices are structurally associated with higher levels of operational and customer-centric performance among the sampled retail establishments.

The matrix values further show that the independent supply chain financing practices were positively and moderately intercorrelated with one another. The baseline linear correlation between factoring and supplier trade credit was $r = 0.557$ ($p < 0.001$), while the correlation between trade credit and dynamic discounting was recorded at $r = 0.517$ ($p < 0.001$). Conversely, corporate reverse factoring recorded relatively weaker linear relationships with the other independent predictors bounded within the study. These intercorrelation parameters suggest that the various value-chain financing instruments are conceptually and empirically related but represent distinct, non-overlapping financial practices.

The positive and statistically significant linear associations observed between all four supply chain financing mechanisms and the dependent construct provide preliminary evidence that optimized value-chain capital configurations are associated with improved performance outcomes among retail networks. Crucially, a significant correlation does not by itself establish a causal relationship or prove a direct cause-and-effect mechanism between the study variables. It simply signifies that changes in the independent liquidity instruments systematically covary with upgrades in the dependent metrics. Consequently, ordinary least squares multiple linear regression analysis was subsequently undertaken to isolate and determine the individual and combined predictive causal contributions of the supply chain financing mechanisms on retail firm performance.

Table 2: Correlation Analysis Results

Variable	Factoring	Reverse Factoring	Trade Credit	Dynamic Discounting	Performance
Factoring	**1.000**				
Reverse Factoring	**0.345***	**1.000**			
Trade Credit	**0.557***	**0.329***	**1.000**		
Dynamic Discounting	**0.496***	**0.266***	**0.517***	**1.000**	
Performance	**0.742***	**0.560***	**0.738***	**0.703***	**1.000**

Note: * indicates statistical significance at $p < 0.05$.

Regression Analysis

Prior to estimating the ordinary least squares (OLS) multiple linear regression model, classical linear regression assumption diagnostic tests were conducted to confirm the data's suitability for parametric inference. Residual normality was evaluated using the Shapiro-Wilk test, which confirmed that the regression residuals did not exhibit significant departures from a normal distribution across the composite constructs: Factoring ($W = 0.976$, $p = 0.214$), Reverse Factoring ($W = 0.973$, $p = 0.179$), Trade Credit ($W = 0.981$, $p = 0.318$), Dynamic Discounting ($W = 0.969$, $p = 0.135$), and Performance ($W = 0.964$, $p = 0.077$). Because all p-values exceeded the 0.05 significance threshold, the null hypothesis of normal error distribution failed to be rejected.

Multicollinearity was evaluated using the Variance Inflation Factor (VIF) and tolerance statistics. The independent variables returned a low mean VIF of 1.50, with individual parameters recorded as follows: Trade Credit (VIF = 1.67, tolerance = 0.599), Factoring (VIF = 1.64, tolerance = 0.610), Dynamic Discounting (VIF = 1.50, tolerance = 0.667), and Reverse Factoring (VIF = 1.18, tolerance = 0.851). Since all VIF values were well below the standard structural threshold of 10 and tolerance statistics exceeded 0.10, the independent predictors were confirmed to be free from excessive linear intercorrelation.

The homoscedasticity assumption was audited via the Breusch-Pagan/Cook-Weisberg test for heteroscedasticity, which yielded a chi-square statistic of χ^2 (1) = 1.42 with a p-value of 0.234. Failing to reject the null hypothesis of constant variance confirmed that the error terms maintained homoscedasticity across the sampled observations. Linearity and structural model specification were verified using the Ramsey RESET test, which returned an F-statistic of F

(5, 55) = 0.41 with a p-value of 0.748. This value exceeded the 0.05 level of significance, indicating the regression model was correctly specified and free from functional form errors or omitted variable bias. Satisfying these post-estimation assumptions validated the structural integrity of the primary data field for OLS parameter estimation.

Multiple linear regression analysis was conducted to determine the combined contribution of the four supply chain financing practices to retail firm performance. The model produced an R^2 of 0.835, indicating that the four SCF mechanisms jointly explained 83.5% of the variation in firm performance. The overall model was statistically significant, $F(4, 55) = 69.81$, $p < 0.001$, indicating that the predictors jointly provided a statistically significant explanation of variation in retail firm performance.

The regression coefficients show that all four SCF mechanisms had positive and statistically significant coefficients. Trade credit recorded the largest unstandardized coefficient ($B = 0.263$, $p < 0.001$), indicating a positive association with firm performance while holding the other predictors constant. Factoring recorded $B = 0.256$ ($p < 0.001$), dynamic discounting $B = 0.240$ ($p < 0.001$), and reverse factoring $B = 0.184$ ($p < 0.001$).

The findings indicate that trade credit, factoring, dynamic discounting, and reverse factoring each made a statistically significant positive contribution to retail firm performance in the multiple regression model. Trade credit had the largest unstandardized coefficient, while reverse factoring had the smallest. Because the reported coefficients are unstandardized, claims about the relative strength of the predictors should be made cautiously unless standardized coefficients are also reported.

The regression findings are consistent with the theoretical perspectives adopted in the study. Pecking Order Theory links the results to firms' financing choices under information asymmetry (Myers & Majluf, 1984). The Resource Based View suggests that the effective use of financial resources and capabilities can support competitive advantage (Barney, 1991; Wernerfelt, 1984), while Transaction Cost Economics highlights the value of efficient governance and transaction arrangements (Williamson, 1985; Ketokivi & Mahoney, 2021). Taken together, the results support the proposition that effective SCF practices are associated with improved retail firm performance.

Table 3: Supply Chain Financing and Retail Firm Performance

Overall Model Fit Statistics						
N = 60	**Source**	**SS**	**Df**	**MS**	**F (4, 55) = 69.81**	
	Model	—	4	—	**p < 0.001**	
R^2 = 0.835	Resid.	—	55	—		
Adj. R^2 = 0.824	Total	—	59	—		
Root MSE = 0.213						
Parameter Estimates Statistics						
Retail Firm Performance	**B**	**SE**	**t**	**P**	**(95% Confidence Interval)**	
Constant	0.314	0.235	1.33	0.188	-0.158	0.786
Factoring	0.256	0.055	4.62	< 0.001	0.145	0.367
Reverse Factoring	0.184	0.041	4.45	< 0.001	0.101	0.267
Trade Credit	0.263	0.060	4.37	< 0.001	0.142	0.383
Dynamic Discounting	0.240	0.051	4.67	< 0.001	0.137	0.344

CONCLUSION

The study concluded that factoring, reverse factoring, trade credit, and dynamic discounting were each positively and significantly associated with retail firm performance when included in the same regression model. The ordinary least squares framework demonstrated high structural adequacy, successfully explaining 83.5% of the total variance observed in the retail

firm performance matrix. Looking at the individual parameters, trade credit recorded the largest unstandardized coefficient (B = 0.263), followed by factoring (B = 0.256), dynamic discounting (B = 0.240), and reverse factoring (B = 0.184). These findings indicate that supply chain financing practices are highly relevant to the operational efficiency, service delivery quality, and customer satisfaction dimensions of performance measured in the study.

The findings support the integration of structured supply chain financing practices into retail working capital and supplier coordination workflows. However, the study relied on cross-sectional survey data collected from a purposively selected sample of 60 managers within structured retail establishments. The results should therefore be interpreted strictly as evidence of statistical association within the sampled retail firms rather than as proof of absolute causality or sector-wide generalization across alternative mercantile Landscapes sampled.

RECOMMENDATIONS

Based on the empirical findings of this study, structured retail firms should strengthen trade credit arrangements, given that trade credit recorded the largest positive unstandardized coefficient in the multiple regression model. Concurrently, management should systematically improve the adoption and tracking of factoring, dynamic discounting, and reverse factoring, as each mechanism was found to make a statistically significant positive contribution to retail firm performance. Corporate decision-makers should focus on establishing clear supplier payment terms to protect inventory supply, improving receivables management to accelerate liquidity, and coordinating reverse factoring arrangements with suppliers and financial institutions to enhance payment workflows.

Furthermore, because effective financial coordination is tied directly to process-driven operational efficiency, firms should leverage reliable digital systems to improve invoice visibility, streamline payment scheduling, and make efficient early payment decisions. These strategic recommendations should be deliberately planned and executed in strict alignment with each individual enterprise’s working capital needs, supplier relationships, and baseline financing capacity.

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