

Inventory Management Practices And Business Profitability: A Case Study Of Supermarkets In Kampala

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Abstract

This study examined the relationship between inventory management practices and business profitability among supermarkets in Kampala, Uganda. The inventory management dimensions studied included inventory control systems, supplier relationship management, demand forecasting, and inventory turnover optimization. A cross-sectional survey was conducted on a sample of 90 supermarket managers and procurement officers drawn from 30 registered supermarkets in Kampala. Data were analyzed using descriptive statistics, Pearson correlation, and multiple regression analysis. Results indicated a significant positive relationship between inventory management practices and business profitability ($r = 0.693$, $p < 0.01$). Regression analysis showed that inventory control systems ($\beta = 0.334$, $p < 0.001$), supplier relationship management ($\beta = 0.276$, $p < 0.01$), and demand forecasting ($\beta = 0.248$, $p < 0.01$) were significant predictors of profitability, collectively explaining 63.7% of the variance in business profitability ($R^2 = 0.637$). The study concludes that systematic and technology-enabled inventory management is a key driver of supermarket profitability in Kampala and recommends adoption of integrated inventory management systems and strengthening of supplier partnerships.

Keywords: Inventory management, Business profitability, Demand forecasting, Inventory control, Supermarkets, Kampala, Uganda

1.0 Background to the Study

The retail supermarket sector in Uganda has experienced rapid growth over the past two decades, driven by urbanization, rising middle-class incomes, and changing consumer preferences toward organized retail outlets (Ramadhan et al., 2023). Kampala, as Uganda's commercial capital, hosts the majority of the country's supermarket chains, including multinational giants such as Carrefour and Shoprite alongside domestic players such as Quality Supermarket, Capital Shoppers, and Uchumi (Uganda Retailers Association, 2022). The intensely competitive nature of Kampala's retail landscape, characterized by thin profit margins, high inventory holding costs, and demanding consumer expectations, places effective inventory management at the center of profitability strategy (Winny et al., 2023).

Inventory management refers to the processes by which businesses oversee, control, and optimize the flow of goods from suppliers through warehouses to points of sale (Waters, 2009). For supermarkets, where product lines may number in the thousands and inventory represents a significant proportion of total assets, effective inventory management is critical to minimizing holding costs, preventing stockouts, reducing spoilage and waste, and maintaining competitive pricing (Deus, 2023). Empirical evidence from retail contexts globally demonstrates that

superior inventory management practices are strongly associated with higher gross margins, reduced operating costs, and improved overall profitability (Cannon, 2008).

In Uganda's retail sector, inventory management challenges are compounded by supply chain inefficiencies, unreliable supplier delivery schedules, inadequate cold chain infrastructure, and unpredictable consumer demand patterns (Julius, 2024). These contextual factors make inventory optimization more challenging, yet simultaneously more critical to profitability outcomes (Deus, 2023). Despite the strategic importance of inventory management to supermarket profitability, there is limited empirical research examining this relationship within Uganda's specific retail context (Ahumuza et al., 2025). This study addresses this gap.

2.0 Problem Statement

Supermarkets in Kampala continue to grapple with profitability challenges attributable in part to inventory management inefficiencies (Ahumuza et al., 2025). Field observations and preliminary interviews with supermarket managers revealed chronic issues including overstocking of slow-moving products, frequent stockouts of high-demand items, high perishable goods wastage rates estimated at 15-25% of fresh produce purchases, and inadequate supplier coordination leading to inconsistent replenishment cycles (Paul & Kazaara, 2023). These inventory inefficiencies directly erode profitability through elevated holding costs, lost sales revenue from stockouts, and write-off losses from expired or damaged goods (Julius, 2024).

While global retail literature extensively documents the profitability implications of inventory management, Uganda-specific research on this topic is sparse, leaving supermarket managers without locally contextualized empirical guidance for improving inventory practices (Kazaara & Audrey, 2024). This study fills this gap by systematically examining how specific inventory management dimensions influence the profitability of supermarkets in Kampala, thereby providing actionable, evidence-based recommendations for improving retail inventory management in Uganda's urban retail environment.

3. Objectives of the Study

3.1 Main Objective

The main objective was to examine the relationship between inventory management practices and business profitability among supermarkets in Kampala.

3.2 Specific Objectives

- i. To determine the effect of inventory control systems on business profitability of supermarkets in Kampala.
- ii. To establish the relationship between supplier relationship management and business profitability.
- iii. To assess the effect of demand forecasting on business profitability.
- iv. To examine the effect of inventory turnover optimization on business profitability.

4.0 Literature Review

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4.1 Theoretical Framework

This study is anchored in the Just-In-Time (JIT) theory developed by Ohno (1988), which advocates for minimizing inventory levels by synchronizing production and procurement with actual demand, thereby reducing holding costs and improving operational efficiency. While originally conceived for manufacturing contexts, JIT principles have been extensively applied in retail settings to guide inventory replenishment strategies (Deus, 2023). The Economic Order Quantity (EOQ) model (Harris, 1913) provides a complementary theoretical framework for optimizing order quantities to minimize total inventory costs, balancing ordering costs against holding costs. Together, these frameworks inform the inventory optimization strategies examined in this study.

4.2 Inventory Control Systems and Profitability

Inventory control systems encompass the technologies and processes used to track, monitor, and manage inventory levels across the supply chain. Modern inventory control systems including barcode scanning, RFID technology, and enterprise resource planning (ERP) systems enable real-time inventory visibility, automated reorder point calculations, and data-driven demand analysis (Chopra & Meindl, 2016). Empirical research consistently demonstrates that supermarkets with sophisticated inventory control systems achieve higher inventory turnover rates, lower stockout incidences, and superior gross margins compared to counterparts relying on manual inventory management (Cachon & Fisher, 2000).

4.3 Supplier Relationship Management and Profitability

Supplier relationship management (SRM) involves the strategic management of interactions with supply chain partners to optimize procurement processes, ensure product quality, and enhance supply chain resilience. Cousins et al. (2006) demonstrated that long-term, collaborative supplier relationships enable buyers to negotiate favorable pricing, secure preferential delivery schedules, and access new products ahead of competitors (K. Faridah et al., 2023). For supermarkets, strong supplier relationships directly reduce procurement costs, improve product availability, and enable joint demand planning, all of which contribute to improved profitability outcomes.

4.4 Demand Forecasting and Profitability

Demand forecasting involves the use of historical sales data, market intelligence, and statistical models to predict future customer demand and align inventory procurement accordingly (Kazaara & Audrey, 2024). Accurate demand forecasting enables supermarkets to maintain optimal stock levels, minimize overstocking and stockouts, and reduce inventory holding costs (Silver et al., 2017). Armstrong (2001) demonstrated that even modest improvements in forecast accuracy yield substantial reductions in inventory costs and improvements in customer service levels, directly enhancing profitability.

5.0 Methodology

5.1 Research Design and Sample

A cross-sectional survey was conducted targeting 30 supermarkets registered with the Uganda Retailers Association in Kampala (Sophie & Crispus, 2024). Three respondents per supermarket (store manager, procurement manager, and

finance officer) were surveyed, yielding a total sample of 90 respondents (Alex et al., 2024). Questionnaire instruments measuring inventory control systems (8 items, $\alpha = 0.83$), supplier relationship management (7 items, $\alpha = 0.80$), demand forecasting (6 items, $\alpha = 0.79$), inventory turnover (5 items, $\alpha = 0.77$), and business profitability (10 items capturing gross margin performance, return on assets, and revenue growth, $\alpha = 0.86$) were administered on a 5-point Likert scale. Data were analyzed using SPSS 26(Nelson et al., 2022).

6.0 Results

6.1 Descriptive Statistics

Table 1: Descriptive Statistics – Inventory Management and Business Profitability

Variable	N	Mean	Std. Dev.	Min	Max
Inventory Control Systems	90	3.54	0.74	1.00	5.00
Supplier Relationship Mgmt	90	3.38	0.81	1.00	5.00
Demand Forecasting	90	3.11	0.89	1.00	5.00
Inventory Turnover Optimization	90	3.29	0.78	1.00	5.00
Business Profitability	90	3.44	0.72	1.00	5.00

Source: Primary Data, 2026

The descriptive statistics in Table 1 reveal that inventory control systems achieved the highest mean score among the inventory management dimensions ($M = 3.54$, $SD = 0.74$), suggesting that Kampala supermarkets have made relatively greater progress in implementing structured inventory monitoring and tracking systems compared to other inventory management dimensions(Ramadhan et al., 2023). The moderate-to-high mean score likely reflects the increasing adoption of point-of-sale (POS) systems with integrated inventory modules among larger supermarket chains, though variability across the sample suggests that smaller supermarkets continue to rely on less sophisticated manual systems.

Relationship management recorded a mean of 3.38 ($SD = 0.81$), indicating a moderate level of formalization in supplier partnerships among sampled supermarkets(N. Faridah et al., 2023)sales. The higher standard deviation relative to inventory control systems reflects significant variability in supplier management practices, with larger chains like Carrefour and Quality Supermarket demonstrating formal vendor management frameworks while smaller players maintained more transactional supplier relationships(Ahumuza et al., 2025). Demand forecasting recorded the lowest mean score ($M = 3.11$, $SD = 0.89$), indicating that systematic demand prediction remains underdeveloped among Kampala supermarkets. The high standard deviation suggests considerable heterogeneity in forecasting capability, with some supermarkets employing basic historical sales analysis while others had no formal forecasting processes(Alex & Kazaara, 2023). Inventory turnover optimization recorded a moderate mean of 3.29 ($SD = 0.78$), reflecting moderate engagement with stock rotation strategies and turnover monitoring. Business profitability

achieved a moderate mean of 3.44 (SD = 0.72), consistent with the thin-margin reality of the supermarket industry in Kampala, where competitive pricing pressures and rising operating costs constrain profitability potential.

6.2 Correlation Analysis

Table 2: Pearson Correlation Matrix – Inventory Management and Business Profitability

Variable	1	2	3	4	5
1. Inventory Control Systems	1.000				
2. Supplier Relationship Mgmt	0.521**	1.000			
3. Demand Forecasting	0.487**	0.503**	1.000		
4. Inventory Turnover	0.469**	0.448**	0.512**	1.000	
5. Business Profitability	0.651**	0.618**	0.579**	0.543**	1.000

Note: ** $p < 0.01$ (two-tailed)

Source: Primary Data, 2026

The correlation results in Table 2 demonstrate significant positive associations between all inventory management dimensions and business profitability. Inventory control systems exhibited the strongest correlation with business profitability ($r = 0.651$, $p < 0.01$), affirming that supermarkets with more sophisticated inventory monitoring and tracking capabilities achieve superior profitability outcomes(Kazaara & Audrey, 2024). This finding is consistent with Cachon and Fisher's (2000) demonstration that real-time inventory information sharing in supply chains reduces inventory costs and improves retail profitability. In Kampala's competitive supermarket context, the ability to maintain accurate stock counts, trigger automated replenishment alerts, and minimize shrinkage through electronic tracking translates directly into profitability advantages(Ahumuza et al., 2025).

Supplier relationship management showed a strong positive correlation with business profitability ($r = 0.618$, $p < 0.01$), highlighting the significant profitability implications of the quality and depth of supplier partnerships(Christopher et al., 2022). Supermarkets that cultivate collaborative, long-term relationships with key suppliers are evidently better positioned to negotiate favorable pricing, secure reliable supply, and co-develop demand planning processes that reduce inventory inefficiency. Demand forecasting demonstrated a significant positive correlation with business profitability ($r = 0.579$, $p < 0.01$), confirming that investment in demand prediction capabilities yields tangible profitability returns(Benard, 2023). Inventory turnover optimization showed the weakest but still significant correlation with profitability ($r = 0.543$, $p < 0.01$), suggesting that effective stock rotation and turnover monitoring contributes to profitability by reducing obsolescence and minimizing holding costs.

6.3 Regression Analysis

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Table 3: Model Summary

Model	R	R ²	Adjusted R ²	Std. Error	F	Sig.
1	0.798	0.637	0.619	0.444	35.082	0.000

Source: Primary Data, 2026

Table 4: Regression Coefficients – Inventory Management and Business Profitability

Predictor	B	Std. Error	Beta (β)	t	Sig.	VIF
(Constant)	0.511	0.241	—	2.120	0.037	—
Inventory Control Systems	0.318	0.082	0.334	3.878	0.000	1.571
Supplier Relationship Mgmt	0.261	0.086	0.276	3.035	0.003	1.648
Demand Forecasting	0.231	0.083	0.248	2.783	0.007	1.589
Inventory Turnover	0.188	0.089	0.201	2.112	0.038	1.523

Dependent Variable: Business Profitability

Source: Primary Data, 2026

The regression results indicate that the four inventory management dimensions collectively explain 63.7% of the variance in business profitability among Kampala supermarkets ($R^2 = 0.637$, Adjusted $R^2 = 0.619$, $F = 35.082$, $p < 0.001$), confirming that inventory management practices are collectively a powerful determinant of supermarket profitability. Inventory control systems emerged as the strongest individual predictor of profitability ($\beta = 0.334$, $t = 3.878$, $p < 0.001$), indicating that a one-unit improvement in inventory control system quality is associated with a 0.318-unit increase in profitability (K. Faridah et al., 2023). This finding underscores the business case for supermarket investment in modern inventory management technologies such as integrated POS systems, barcode scanning, and automated replenishment modules.

Supplier relationship management was the second strongest predictor ($\beta = 0.276$, $t = 3.035$, $p = 0.003$), confirming that the strategic value of collaborative supplier partnerships translates into measurable profitability gains through better pricing, more reliable supply, and joint inventory planning (Julius & Matovu, 2025). Demand forecasting contributed significantly to profitability ($\beta = 0.248$, $t = 2.783$, $p = 0.007$), demonstrating that even at the moderate levels of forecasting sophistication observed among Kampala supermarkets, investment in demand prediction capabilities yields profitability dividends through reduced overstock and stockout incidences. Inventory turnover optimization was the weakest predictor ($\beta = 0.201$, $t = 2.112$, $p = 0.038$) but attained statistical significance, affirming that active management of stock rotation and turnover rates contributes to profitability by minimizing holding costs and product obsolescence. All VIF values ranged from 1.523 to 1.648, confirming the absence of problematic multicollinearity.

7.0 Discussion of Results

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The finding that inventory control systems are the strongest predictor of supermarket profitability ($\beta = 0.334$) highlights the transformative role of inventory management technology in the retail sector. In Kampala's increasingly competitive supermarket environment, where margins are thin and consumer expectations are rising, the ability to maintain real-time inventory visibility, automate replenishment processes, and minimize shrinkage through electronic tracking represents a significant competitive advantage that directly enhances profitability. This finding is consistent with Chopra and Meindl (2016) and Cachon and Fisher (2000), who demonstrated the powerful profitability implications of supply chain information technology adoption in retail contexts.

The significant predictive power of supplier relationship management ($\beta = 0.276$) underscores the strategic importance of moving beyond transactional procurement relationships toward collaborative, value-creating partnerships with key suppliers. Supermarkets in Kampala that have formalized supplier scorecards, joint demand planning forums, and volume commitment agreements are evidently realizing measurable profitability advantages through better pricing, more reliable delivery, and co-managed inventory risk. The significance of demand forecasting ($\beta = 0.248$) despite its relatively low mean score suggests that even modest investments in demand prediction capability could yield substantial profitability improvements for Kampala supermarkets, particularly for high-volume perishable categories where forecasting accuracy directly determines waste rates and margin outcomes.

8.0 Conclusions and Recommendations

8.1 Conclusions

Inventory management practices are significant and collectively powerful predictors of business profitability among supermarkets in Kampala, explaining 63.7% of profitability variance. Inventory control systems, supplier relationship management, and demand forecasting are the three most influential dimensions of inventory management impacting profitability, while inventory turnover optimization also contributes significantly. The moderate levels of practice observed across all dimensions indicate substantial room for improvement with associated profitability gains.

8.2 Recommendations

Kampala supermarkets should prioritize investment in integrated inventory management systems including POS-linked inventory modules, automated reorder point systems, and real-time stock-level dashboards accessible to procurement teams. Supermarket operators should develop formal supplier management frameworks including vendor assessment scorecards, joint replenishment planning processes, and performance-linked contract arrangements to optimize procurement costs and supply reliability. Demand forecasting capabilities should be developed through training procurement and logistics staff in basic statistical forecasting techniques, and through adoption of AI-powered demand prediction tools available in modern retail management software platforms. Future research should examine the mediating role of supply chain resilience and the moderating effect of supermarket size on the inventory management-profitability relationship.

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