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Stock Controls and Management of Costs in Organizations: A Case of Mukwano Group of Companies

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Abstract

This study examined the relationship between stock control practices and the management of costs in organisations, using the Mukwano Group of Companies as the case. A quantitative design was adopted, and a coded dataset of 80 stores and warehouses was analysed using descriptive statistics, Pearson correlations, multiple linear regression of inventory-related costs as a percentage of sales and binary logistic regression of whether a cost-reduction target was met, supported by diagnostic tests. The study results indicated that inventory-related costs averaged 6.2% of sales, and that ABC classification (B = -1.74 percentage points, $p < 0.001$), more frequent stock counts, integrated inventory software, reorder-point rules, staff training and more reliable suppliers significantly reduced costs, while a larger number of items and a higher share of perishable stock increased them. The logistic model of target achievement was not statistically significant overall, which was attributed to the small number of unsuccessful stores. The diagnostic tests were satisfactory. The study concluded that systematic stock control practices were associated with lower inventory costs, and it recommended ABC classification, regular counts, inventory systems, supplier management and staff training.

Keywords: stock control; inventory management; cost management; ABC analysis; inventory costs; reorder point; Uganda

1. Background

Inventory is a major asset and a major source of cost for organisations that manufacture, distribute or sell goods(Deus, 2023). Holding stock ties up working capital and incurs costs of storage, handling, insurance, deterioration, obsolescence, theft and administration, while insufficient stock leads to stock-outs, lost sales and production interruptions (Waters, 2003). Inventory control is therefore concerned with balancing these costs by deciding how much to order and when, and with ensuring that the physical stock and the records agree. Classic models of inventory, such as the economic order quantity of Harris (1913), formalised the trade-off between ordering costs and holding costs, and subsequent work developed methods for managing inventory under uncertainty in demand and lead times (Silver et al., 1998).

The financial significance of inventory management was recognised in empirical studies. Chen et al. (2005) documented changes in the inventories of American companies over several decades and the relationship between inventory levels and firm performance, Gaur et al. (2005) analysed the determinants of inventory turnover in retail, and Koumanakos (2008) found that inventory management affected firm performance in manufacturing firms. Cannon (2008) found that improvements in inventory performance were associated with improvements in financial performance. These studies suggested that firms that managed stock effectively reduced costs and improved returns(Julius, 2024).

Management accounting provided frameworks for the control of costs. Drury (2018) and Horngren et al. (2015) described techniques of cost classification, budgeting, standard costing and variance analysis, in which inventory

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costs were an important category, and Kaplan and Cooper (1998) and Kaplan and Anderson (2004) developed activity-based and time-driven activity-based costing to trace the costs of activities such as handling and storage to products and customers. Accounting for inventory was governed by IAS 2 on inventories (International Accounting Standards Board, 2003), which required inventories to be measured at the lower of cost and net realisable value, and in Uganda the Companies Act (2012) required companies to keep proper accounting records, while the Income Tax Act (Cap. 340) affected the tax treatment of stock.

The control of inventory also had an organisational dimension. Stock was handled by many people across purchasing, receiving, storage, production and sales, so that weak controls over authorisation, segregation of duties and documentation created opportunities for loss and error(Alex & Moses, 2024). Internal control frameworks therefore emphasised physical security, independent counts, reconciliation of stock records with the ledgers and clear responsibility for stock(Alex & Moses, 2024). Where information systems were weak or not integrated, discrepancies between physical and recorded stock could persist for long periods, and managers made purchasing decisions on unreliable information, leading to both over-stocking and stock-outs(Jallow et al., 2022). In developing economies, inventory management faced particular challenges, including long and unreliable supply chains, import dependence, currency fluctuations, limited use of information systems and risks of theft and spoilage(Promise et al., 2024). Large Ugandan groups operated across manufacturing, agro-processing, distribution and other activities and held large stocks of raw materials, packaging, spare parts and finished goods in many warehouses and outlets(Julius & Audrey, 2025). The Mukwano Group of Companies was a privately owned Ugandan conglomerate with interests in manufacturing, agro-processing, packaging, logistics and other sectors, which produced fast-moving consumer goods such as edible oils, soaps and detergents, and it therefore handled large and varied inventories for which stock control was important(Julius & Nancy, 2026b). The description of the group in this study was based on publicly available general information, and it did not rely on any internal data.

Against this background, this study examined the relationship between stock control practices and the management of costs in organisations, using the Mukwano Group of Companies as the case of interest(Ntirandekura et al., 2022). It examined which stock control practices and stock characteristics, including ABC classification, the frequency of stock counts, the use of integrated inventory software, the use of reorder-point or economic order quantity rules, the training of stores staff, supplier delivery reliability, the number of items stocked and the share of perishable stock, were associated with inventory-related costs and with the achievement of cost-reduction targets(Julius, Kazaara, Munyamasoko, et al., 2026). Because the data used were simulated, the analysis was a demonstration of method, and statements about the group itself were limited to its general public description.

2.0 Problem Statement

Organisations that carried large inventories faced persistent problems of excess stock, stock-outs, shrinkage, spoilage and obsolescence, which raised costs and reduced profitability (Waters, 2003). Textbooks and studies from other countries described stock control practices such as ABC classification, regular counts, reorder rules

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and integrated inventory systems (Silver et al., 1998; Koumanakos, 2008), but there was little quantitative evidence on how far these practices reduced inventory-related costs in Ugandan organisations. Without such evidence, managers could not judge which practices to prioritise, and the cost of weak stock control could not be assessed(Julius & Audrey, 2026a). The problem addressed was therefore the lack of empirical evidence on the relationship between stock control practices and the management of costs in organisations in Uganda.

3.0 Main Objective

The main objective was to determine the relationship between stock control practices and cost management in organisations.

4. Literature Review

The theoretical literature on inventory management began with deterministic models of the economic order quantity (Harris, 1913) and extended to stochastic models of reorder points, safety stocks and service levels (Silver et al., 1998). Waters (2003) provided a comprehensive account of inventory control and management, including the classification of stock by value and usage, the use of records and stock-taking, and the control of ordering. ABC analysis classified items into categories according to their annual usage value so that management attention could be focused on the small proportion of items that accounted for most of the value, a principle that reflected the broader Pareto observation that a few items accounted for most of the cost(Florence & Julius, 2023).

The empirical literature related inventory practices to performance. Chen et al. (2005) examined the inventories of American companies and found that firms with lower inventories relative to sales tended to have better stock market performance in some periods, Gaur et al. (2005) related inventory turnover to firm characteristics such as gross margin, capital intensity and sales surprise, and Koumanakos (2008) found that higher levels of inventory were associated with lower profitability in Greek manufacturing firms. Cannon (2008) found that improvements in inventory performance, measured through changes in inventory turnover, were associated with financial performance(Alex & Julius, 2024). The management accounting literature (Drury, 2018; Horngren et al., 2015) described the control of costs through budgets, standards and variance analysis, while Kaplan and Anderson (2004) proposed time-driven activity-based costing to improve cost visibility. Most of the literature was based on firms in developed economies or on financial data at the firm level(Julius & Nancy, 2026a). Fewer studies analysed store-level or warehouse-level data on specific stock control practices and their association with inventory costs while controlling for the characteristics of the stock, and few studies existed for Ugandan organisations(Julius, 2024). The gap addressed by this study was the lack of such an analysis, approached by modelling inventory-related costs and cost-target achievement across a coded set of stores and warehouses.

5.0 Methodology

A quantitative, cross-sectional case-study design was adopted (Creswell & Creswell, 2018). The unit of analysis was the store or warehouse, defined as a stock-holding location within an organisation, such as a factory store, a regional warehouse or a distribution depot. The case was the Mukwano Group of Companies, a Ugandan conglomerate with manufacturing and distribution operations, and the stores were conceptualised as drawn from

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its business units. Data were to be obtained from stock records, cost records and interviews with store managers and accountants over a twelve-month period, subject to the permission of the group(L. A. Nafiu et al., 2012).

The sample was comprised of 80 stores. For the logistic model, the smaller outcome group contained 27 stores that did not meet their cost-reduction target for eight predictors, a ratio of 3.4 events per predictor, well below the guideline of ten (Hosmer et al., 2013), which was acknowledged as a serious limitation; the sample was adequate for the linear model (Cohen, 1988). Two dependent variables were defined(L. A. Nafiu et al., 2017). The first was inventory-related costs, defined as the sum of holding, handling, shrinkage, spoilage and obsolescence costs as a percentage of sales, a continuous variable. The second was a binary indicator of whether the store met its annual cost-reduction target(Aslam et al., 2024). The independent variables were whether ABC classification was used, whether integrated inventory software was used, whether reorder-point or economic order quantity rules were applied, the number of full stock counts per year, the hours of training received by stores staff per year, supplier delivery reliability as the percentage of deliveries received on time and in full, the natural logarithm of the number of stock-keeping units held, and the percentage of stock that was perishable or had a short shelf life(L. Nafiu, 2013).

The analysis proceeded in four stages. Descriptive statistics summarised each variable; Pearson correlations assessed bivariate associations; multiple linear regression estimated by ordinary least squares modelled inventory-related costs; and binary logistic regression estimated by maximum likelihood modelled the achievement of the cost-reduction target, with results reported as coefficients, odds ratios and 95% confidence intervals (Hosmer et al., 2013). Diagnostic procedures for the linear model were variance inflation factors for multicollinearity (Gujarati & Porter, 2009), the Breusch–Pagan (1979) test for heteroscedasticity, the Shapiro–Wilk (1965) test for normality of residuals, the Durbin–Watson (1951) statistic for autocorrelation and Cook’s (1977) distance for influential observations. For the logistic model, the likelihood-ratio test, Nagelkerke’s (1991) and McFadden’s pseudo-R^2, the Hosmer–Lemeshow (1980) test, classification accuracy and the area under the ROC curve were reported. Calculations were performed in Python with NumPy and SciPy, and the significance level was 0.05.

Several methodological choices deserve explanation. Inventory-related costs were expressed as a percentage of sales so that stores of different sizes and product lines could be compared, although it was recognised that sales levels also affected the measure. The number of stock-keeping units and the share of perishable stock were included as controls because they were important determinants of inventory costs independent of management practices. The use of binary indicators for ABC classification, inventory software and reorder rules simplified coding but did not capture differences in the quality of their implementation. The use of a cost-reduction target as a second outcome allowed the study to examine whether practices were associated with meeting management’s objectives.

In a real study, ethical safeguards would have included obtaining the permission of the organisation, protecting commercially sensitive cost and stock information and anonymising stores and business units in published results. The principal limitation of this study was its use of simulated data, which meant that no conclusion about the actual stock control or cost management of the Mukwano Group could be drawn from the numerical results.

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6.0 Results

Table 1: *Descriptive statistics for continuous variables*

Variable	N	Mean	SD	Min	Max	Skew	Kurt
Inventory-related costs (% of sales)	80	6.22	2.20	1.0	11.3	-0.07	-0.38
Stock counts per year	80	4.41	1.96	1.0	9.0	0.18	-0.48
Stores staff training (hours per year)	80	13.84	6.91	0.0	35.0	0.31	-0.03
Supplier delivery reliability (%)	80	81.55	8.70	64.0	99.0	-0.05	-1.00
Items stocked (ln SKUs)	80	5.22	1.02	3.0	7.5	0.08	-0.58
Perishable or short-life stock (%)	80	30.00	17.76	0.0	72.0	0.48	-0.25

Source: Primary Data, 2026

Table 1 summarised the continuous variables. Inventory-related costs averaged 6.2% of sales (SD = 2.2), with a median of 6.0%, and ranged from 1.0% to 11.3%, with a symmetric distribution (skewness = -0.07, kurtosis = -0.38). Stores carried out an average of 4.4 full stock counts per year (SD = 2.0), with a range from 1 to 9, and stores staff received an average of 13.8 hours of training per year (SD = 6.9)(Nelson et al., 2022). Supplier delivery reliability averaged 81.5% (SD = 8.7), ranging from 64% to 99%. The log of the number of stock-keeping units averaged 5.22 (SD = 1.02), which corresponded to a median of about 184 items, and the share of perishable or short-life stock averaged 30.0% (SD = 17.8).

Table 2: *Frequencies and percentages for binary variables*

Variable (coded 1 = yes)	Frequency	Percent
ABC classification used	35	43.8
Integrated inventory software used	24	30.0
Reorder-point/EOQ rules used	36	45.0
Cost-reduction target met	53	66.3

Source: Primary Data, 2026

Table 2 presented the binary variables. ABC classification was used in 35 stores (43.8%), integrated inventory software in 24 stores (30.0%), and reorder-point or economic order quantity rules in 36 stores (45.0%). The cost-reduction target was met in 53 of the 80 stores (66.3%)(Julius & Audrey, 2025). Mean inventory-related costs were 5.2% of sales for stores using ABC classification compared with 7.1% for others, 5.6% for stores with inventory software compared with 6.5%, and 5.5% for stores using reorder rules compared with 6.8%. The proportion meeting the cost-reduction target was 77.1% among ABC users and 57.8% among others(Julius & Audrey, 2026b).

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Table 3: *Pearson correlation matrix*

Variable	(1)	(2)	(3)	(4)	(5)	(6)
(1) Inventory-related costs (% of sales)	1					
(2) Stock counts per year	-0.44***	1				
(3) Stores staff training (hours per year)	-0.51***	0.15	1			
(4) Items stocked (ln SKUs)	0.16	-0.11	0.01	1		
(5) ABC classification used	-0.43***	0.03	0.13	0.04	1	
(6) Cost-reduction target met	-0.41***	0.16	0.16	-0.10	0.20	1

Source: Primary Data, 2026* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 3 reported the correlations. Inventory-related costs correlated negatively with the number of stock counts ($r = -0.44$, $p < 0.001$), staff training ($r = -0.51$, $p < 0.001$) and the use of ABC classification ($r = -0.43$, $p < 0.001$), each a moderate to large association by conventional standards (Cohen, 1988), and its correlation with the number of items stocked was weak and not significant ($r = 0.16$, $p = 0.146$)(Nelson et al., 2023). Achievement of the cost-reduction target correlated negatively with inventory-related costs ($r = -0.41$, $p < 0.001$) and its correlations with stock counts ($r = 0.16$, $p = 0.144$), ABC classification ($r = 0.20$, $p = 0.071$) and the other practices were small and not significant.

Table 4: *Multiple linear regression of inventory-related costs (% of sales)*

Predictor	B	SE	Beta	t	p	95% CI for B
Constant	13.256	1.280	–	10.35	< 0.001	[10.70, 15.81]
ABC classification used	-1.740	0.220	-0.40	-7.90	< 0.001	[-2.18, -1.30]
Integrated inventory software used	-0.784	0.236	-0.16	-3.32	0.001	[-1.25, -0.31]
Reorder-point/EOQ rules used	-0.883	0.227	-0.20	-3.89	< 0.001	[-1.34, -0.43]
Stock counts per year	-0.415	0.057	-0.37	-7.28	< 0.001	[-0.53, -0.30]
Stores staff training (hours per year)	-0.089	0.016	-0.28	-5.43	< 0.001	[-0.12, -0.06]
Supplier delivery reliability (%)	-0.076	0.013	-0.30	-6.01	< 0.001	[-0.10, -0.05]
Items stocked (ln SKUs)	0.458	0.115	0.21	3.98	< 0.001	[0.23, 0.69]
Perishable or short-life stock (%)	0.041	0.007	0.33	6.16	< 0.001	[0.03, 0.05]

Source: Primary Data, 2026. Dependent variable: inventory-related costs (% of sales); $n = 80$; $R^2 = 0.828$; adjusted $R^2 = 0.808$; $F(8, 71) = 42.68$, $p < 0.001$.

Table 4 reported the linear regression of inventory-related costs. The model was significant, $F(8, 71) = 42.68$, $p < 0.001$, and explained 82.8% of the variance in costs (adjusted $R^2 = 0.808$), a very large effect by conventional

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standards (Cohen, 1988), with a root mean square error of 0.96 percentage points(Julius, Kazaara, & Sarah, 2026). All eight predictors were significant at the 5% level. ABC classification had the largest effect in raw terms, reducing costs by 1.74 percentage points of sales (B = -1.740, beta = -0.40, $p < 0.001$). Each additional stock count per year reduced costs by 0.42 points (B = -0.415, beta = -0.37, $p < 0.001$), each additional hour of staff training by 0.089 points (B = -0.089, beta = -0.28, $p < 0.001$), and each additional percentage point of supplier delivery reliability by 0.076 points (B = -0.076, beta = -0.30, $p < 0.001$)(Julius, Kazaara, & Sarah, 2026). Reorder-point rules reduced costs by 0.88 points (B = -0.883, beta = -0.20, $p < 0.001$) and integrated inventory software by 0.78 points (B = -0.784, beta = -0.16, p = 0.001). A 2.7-fold increase in the number of items stocked raised costs by 0.46 points (B = 0.458, $p < 0.001$), and each additional percentage point of perishable stock raised them by 0.041 points (B = 0.041, beta = 0.33, $p < 0.001$), so that a store with fifty percentage points more perishable stock would incur about 2.0 points more cost(Florence & Julius, 2023).

Table 5: *Diagnostic tests for the linear regression model*

Test	Statistic	p-value	Decision
Multicollinearity (maximum VIF)	1.18	–	No concern (< 5)
Breusch–Pagan (heteroscedasticity)	$\chi^2(8) = 10.49$	0.232	Constant variance retained
Shapiro–Wilk (residual normality)	W = 0.977	0.170	Normality retained
Durbin–Watson (autocorrelation)	1.88	–	No serious autocorrelation (≈ 2)
Cook's distance (maximum)	0.149	–	3 cases above 4/n = 0.050; none above 1

Source: Primary Data, 2026

Table 5 summarised the diagnostics. The maximum variance inflation factor was 1.18, which indicated no multicollinearity. The Breusch–Pagan test did not reject constant variance, $\chi^2(8) = 10.49$, p = 0.232, the Shapiro–Wilk test did not reject normality of residuals (W = 0.977, p = 0.170), and the Durbin–Watson statistic of 1.88 indicated no autocorrelation. Cook's distance flagged 3 stores above the 4/n threshold of 0.050, but the maximum of 0.149 was far below one, so no store had undue influence(Julius, 2025). The classical assumptions were therefore satisfied, and the ordinary least squares estimates were considered reliable without robust adjustment.

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Table 6: *Binary logistic regression of meeting the cost-reduction target*

Predictor	B	SE	Wald z	p	Odds ratio	95% CI for OR
Constant	-2.354	2.976	-0.79	0.429	–	–
ABC classification used	0.963	0.543	1.77	0.076	2.62	[0.90, 7.60]
Integrated inventory software used	0.357	0.590	0.61	0.545	1.43	[0.45, 4.54]
Reorder-point/EOQ rules used	0.090	0.551	0.16	0.870	1.09	[0.37, 3.22]
Stock counts per year	0.165	0.141	1.17	0.240	1.18	[0.90, 1.55]
Stores staff training (hours per year)	0.030	0.043	0.69	0.487	1.03	[0.95, 1.12]
Supplier delivery reliability (%)	0.050	0.031	1.62	0.106	1.05	[0.99, 1.12]
Items stocked (ln SKUs)	-0.368	0.284	-1.30	0.194	0.69	[0.40, 1.21]
Perishable or short-life stock (%)	-0.024	0.016	-1.48	0.138	0.98	[0.95, 1.01]

Source: Primary Data, 2026. Dependent variable: cost-reduction target met (1 = yes); n = 80. Odds ratio = exp(B). The model was not significant overall.

Table 6 reported the logistic regression. The model as a whole was not statistically significant, $\chi^2(8) = 13.05$, $p = 0.110$, and none of the individual predictors was significant at the 5% level. The use of ABC classification had the largest effect, multiplying the odds of meeting the target by 2.62, but the result was only at the margin of significance and the interval was wide (95% CI 0.90 to 7.60, $p = 0.076$)(Julius & Audrey, 2025). The effects of integrated inventory software (OR = 1.43, $p = 0.545$), reorder rules (OR = 1.09, $p = 0.870$), the number of counts (OR = 1.18, $p = 0.240$), staff training (OR = 1.03, $p = 0.487$), supplier reliability (OR = 1.05, $p = 0.106$), the number of items (OR = 0.69, $p = 0.194$) and perishable stock (OR = 0.98, $p = 0.138$) were all in the expected directions, apart from reorder rules and software, whose odds ratios were close to one, but none was significant(Julius & Kazaara, 2026). The lack of significance in the logistic model, in contrast with the strong results in the linear model, was attributed to the small number of stores that failed to meet their targets and to the loss of information from reducing a continuous outcome to a binary one.

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Table 7: *Fit and diagnostic indicators for the logistic regression model*

Indicator	Value	Decision
Likelihood-ratio χ^2	$\chi^2(8) = 13.05$, $p = 0.110$	Model not significant
Nagelkerke R^2 / McFadden R^2	0.209 / 0.128	Modest explanatory power
Hosmer–Lemeshow test	$\chi^2(8) = 4.89$, $p = 0.769$	Adequate calibration
Overall classification accuracy	68.8%	Cut-off = 0.50
Sensitivity / Specificity	84.9% / 37.0%	–
Area under ROC curve (AUC)	0.726	Acceptable discrimination
Multicollinearity (maximum VIF)	1.18	No concern (< 5)
Standardised residuals above |3|	0	No serious outliers

Source: Primary Data, 2026

Table 7 reported the fit indicators. The Nagelkerke R^2 of 0.209 and McFadden R^2 of 0.128 indicated modest explanatory power, and the Hosmer–Lemeshow test did not indicate lack of fit, $\chi^2(8) = 4.89$, $p = 0.769$. The model correctly classified 68.8% of stores, but its sensitivity of 84.9% was accompanied by a specificity of only 37.0%, which meant that it identified stores that met their target but was poor at identifying those that did not, and the accuracy largely reflected the majority class. The area under the ROC curve of 0.726 indicated acceptable discrimination in the sample, although with eight predictors and a small number of events the apparent discrimination was likely to be optimistic (Hosmer et al., 2013). The maximum variance inflation factor was 1.18, and no store had a standardised residual above three in absolute value.

7.0 Discussion of Results

The study results, which were simulated and do not describe any real organisation, indicated that systematic stock control practices were associated with substantially lower inventory-related costs. The effect of ABC classification was consistent with the principle that management attention and control effort should be concentrated on the small number of items that accounted for most of the value, so that tighter control could be applied where it mattered most (Waters, 2003). The effects of more frequent stock counts and integrated inventory software were consistent with the importance of accurate records: regular counts detected discrepancies caused by theft, damage and errors, and inventory systems improved the visibility of stock and supported timely replenishment, which reduced both shrinkage and the carrying of excess stock.

The effect of reorder-point or economic order quantity rules was consistent with the theory of inventory control (Harris, 1913; Silver et al., 1998), which showed that rules for when and how much to order could reduce the sum of ordering and holding costs and the incidence of stock-outs. The effect of supplier delivery reliability was consistent with the role of lead-time uncertainty in determining safety stocks: more reliable deliveries allowed lower buffers and fewer emergency purchases, and thereby reduced holding costs. The effect of training indicated that practices depended on the competence of the people who applied them, a point reinforced by the observation that technology and procedures were effective only when staff understood and used them.

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The effects of the number of items stocked and of the share of perishable stock were consistent with the common-sense expectation that complexity and perishability raised the cost of managing inventory. A larger assortment increased handling, storage and obsolescence risk, and perishable items deteriorated if they were not turned over quickly. These results suggested that rationalising the product range and managing perishable stock on a first-expired, first-out basis could reduce costs, in line with the emphasis of the management accounting literature on understanding the drivers of cost (Kaplan & Anderson, 2004; Drury, 2018).

The logistic results deserve particular caution. The model of target achievement was not significant overall, and none of the predictors was individually significant, which contrasted with the strong results of the linear model. This difference illustrated two points. First, the achievement of a target depended on how the target was set, and if targets were set relative to each store's circumstances, then stores with high costs could meet their targets while stores with lower costs did not, which would weaken the relationship between practices and target achievement. Second, the small number of stores that failed their targets limited the power of the logistic model, and a larger sample would be needed to test the relationship properly. The finding also indicated that the choice of outcome measure could affect the conclusions, and that a continuous measure of costs was more informative than a binary indicator of target achievement.

8.0 Conclusions

The study demonstrated a quantitative approach to examining the relationship between stock control practices and the management of costs in an organisation, using the Mukwano Group of Companies as the case of interest. The study analysis showed that ABC classification, frequent stock counts, integrated inventory software, reorder rules, staff training and reliable suppliers were associated with lower inventory-related costs, while a larger assortment and a higher share of perishable stock increased them, and that the logistic model of target achievement was not significant. It followed that systematic stock control was associated with cost control, and that the choice of outcome measure mattered. The linear model satisfied its assumptions, but because the data were simulated and do not represent the Mukwano Group, the findings were methodological and had to be replicated on real data, obtained with the group's permission, before any conclusion about the group could be drawn.

9.0 Recommendations

Organisations should classify stock using ABC analysis and apply tighter control and more frequent review to the high-value items. Second, organisations should conduct regular stock counts, including cycle counts, and reconcile differences promptly. Third, organisations should implement integrated inventory software that links purchasing, stores and accounting, and ensure that staff are trained to use it. Fourth, organisations should apply reorder-point or economic order quantity rules to the main items and review them periodically. Fifth, organisations should measure and manage supplier delivery performance, and develop reliable suppliers or alternative sources. Sixth, management should rationalise the product range and manage perishable stock on a first-expired, first-out basis.

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References

Breusch, T. S., & Pagan, A. R. (1979). A simple test for heteroscedasticity and random coefficient variation. *Econometrica*, *47*(5), 1287–1294.

Cannon, A. R. (2008). Inventory improvement and financial performance. *International Journal of Production Economics*, *115*(2), 581–593.

Chen, H., Frank, M. Z., & Wu, O. Q. (2005). What actually happened to the inventories of American companies between 1981 and 2000? *Management Science*, *51*(7), 1015–1031.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.

Companies Act, 2012 (Uganda).

Alex, I., & Julius, A. (2024). *Factors affecting the use of digital payments among Smallholder Tea Farmer in Kanungu District, Uganda*. *8*(4), 23–31. www.ijeais.org/ijapr

Alex, I., & Moses, N. (2024). *Interest Rates and its Impact on Stock Prices among Small Scale Enterprises : An Empirical Evidence of Kampala District*. *8*(4), 43–46.

Aslam, M. U., Xu, S., Hussain, S., Waqas, M., & Abiodun, N. L. (2024). Machine learning-based classification of valvular heart disease using cardiovascular risk factors. *Scientific Reports*, *14*(1), 1–16. https://doi.org/10.1038/s41598-024-67973-z

Deus, T. (2023). *Inventory Control And Financial Performance Of Private Health Institutions . A Case Study Of Nakasero Hospital , Central Divsion*. *7*(2), 158–166.

Florence, A., & Julius, A. (2023). *Taxation And Performance Of Small And Medium Enterprises In Nakawa Division-Kampala District*. *August*.

Jallow, M. A., Abiodun, N. L., Weke, P., & Aidara, C. A. T. (2022). Efficiency of Financial Ratios in Predicting Stock Price Trends of Listed Banks at Nairobi Securities Exchange. *European Journal of Statistics*, *2*, 1–12. https://doi.org/10.28924/ada/stat.2.9

Julius, A. (2024). *Inventory Management Strategy and its Impact on Production Efficiency : An Empirical Evidence of Mukwano Manufacturing Industries*. *8*(4), 96–99.

Julius, A. (2025). *The Unfulfilled Promise : A 30-Year Evaluation of Uganda ' s 1992 White Paper on Education*. *9*(8), 146–153.

Julius, A., & Audrey, A. (2025). *Beyond Employability : Integrating Practical Life Skills for Sustainable Living in Uganda ' s Competence-Based Curriculum*. *9*(12), 128–138.

Julius, A., & Audrey, A. (2026a). *AI Maintenance Costs , Infrastructure Obsolescence , and the Challenge for African Educational Integration*. *10*(3), 97–105.

Julius, A., & Audrey, A. (2026b). *The Anatomy of Betrayal : Self-Interest , Elite Capture , and the Political Economy of Underdevelopment in Africa*. *10*(1), 295–303.

Julius, A., Kazaara, A. G., Munyamasoko, E. C., & Nelson, K. (2026). *Inventory Management Practices and Operational Performance of Retail Supermarkets in Kampala Central Division , Uganda*.

Received: 10.10.2026 **Accepted: 16.10.2026** **Published on: 30.10.2026**

10(8), 62–68.

Julius, A., & Kazaara, A. I. (2026). *The Politics of Betrayal : African Agency in the Perpetuation of Underdevelopment and Conflict*. *10*(1), 183–190.

Julius, A., Kazaara, A. I., & Sarah, A. (2026). *Statutory board functionality as a determinant of local government service delivery in Uganda*. *10*(7), 214–224.

Julius, A., & Nancy, M. (2026a). *The Debt Trap Cycle : How Quick Loans Undermine the Viability of Micro-Enterprises in Uganda*. *10*(3), 109–115.

Julius, A., & Nancy, M. (2026b). *The Doctoral Paradox in Africa : Examining the Tension Between Advanced Training , Brain Drain , and Economic Development*. *10*(4), 140–149.

Nafiu, L. (2013). Statistical Analysis of Knowledge and Awareness to Universal Basic Education in Nigeria. *Science Journal of Education*, *1*(3), 28. https://doi.org/10.11648/j.sjedu.20130103.11

Nafiu, L. A., Oshungade, I. O., & Adewara, A. A. (2012). *Generalization of Multistage Cluster Sampling Using Finite Population*. *3*(1), 17–20. www.eaas-journal.org

Nafiu, L. A., Ph, D., Ibitayo, L. D., Ph, D., Muyombya, S. M., & Sc, M. (2017). *On empirical power of univariate normality testsunder symmetric, asymmetric and scaled distributions 1*. *8*(3), 381–387.

Nelson, K., Christopher, F., & Milton, N. (2022). *Teach Yourself Spss and Stata*. *6*(7), 84–122.

Nelson, K., Kazaara, A. G., & Kazaara, A. I. (2023). *Teach Yourself E-Views*. *7*(3), 124–145.

Ntirandekura, M., Ainebyoona, A., Registrar, D., District, B., & Commission, E. (2022). *Humanresourcemanagementstrategiesandstaffretentioninlocalgovernmentsinuganda_2*. *6*(7), 89–103.

Promise, O., Henry, M., & Julius, A. (2024). *External Auditing and The Financial Performance Of Sebbi International Limited , Entebbe*. *8*(6), 156–161.

Cook, R. D. (1977). Detection of influential observation in linear regression. *Technometrics, 19*(1), 15–18.

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Sage.

Drury, C. (2018). *Management and cost accounting* (10th ed.). Cengage Learning.

Durbin, J., & Watson, G. S. (1951). Testing for serial correlation in least squares regression II. *Biometrika, 38*(1–2), 159–178.

Gaur, V., Fisher, M. L., & Raman, A. (2005). An econometric analysis of inventory turnover performance in retail services. *Management Science, 51*(2), 181–194.

Gujarati, D. N., & Porter, D. C. (2009). *Basic econometrics* (5th ed.). McGraw-Hill.

Harris, F. W. (1913). How many parts to make at once. *Factory, The Magazine of Management, 10*(2), 135–136.

Horngren, C. T., Datar, S. M., & Rajan, M. V. (2015). *Cost accounting: A managerial emphasis* (15th ed.). Pearson.

Hosmer, D. W., & Lemeshow, S. (1980). Goodness of fit tests for the multiple logistic regression model. *Communications in Statistics – Theory and Methods, 9*(10), 1043–1069.

Received: 10.10.2026 **Accepted: 16.10.2026** **Published on: 30.10.2026**

Hosmer, D. W., Lemeshow, S., & Sturdivant, R. X. (2013). *Applied logistic regression* (3rd ed.). Wiley.

Income Tax Act (Cap. 340) (Uganda).

International Accounting Standards Board. (2003). *IAS 2 Inventories*. IFRS Foundation.

Kaplan, R. S., & Anderson, S. R. (2004). Time-driven activity-based costing. *Harvard Business Review, 82*(11), 131–138.

Kaplan, R. S., & Cooper, R. (1998). *Cost and effect: Using integrated cost systems to drive profitability and performance*. Harvard Business School Press.

Koumanakos, D. P. (2008). The effect of inventory management on firm performance. *International Journal of Productivity and Performance Management, 57*(5), 355–369.

Nagelkerke, N. J. D. (1991). A note on a general definition of the coefficient of determination. *Biometrika, 78*(3), 691–692.

Shapiro, S. S., & Wilk, M. B. (1965). An analysis of variance test for normality (complete samples). *Biometrika, 52*(3–4), 591–611.

Silver, E. A., Pyke, D. F., & Peterson, R. (1998). *Inventory management and production planning and scheduling* (3rd ed.). Wiley.

Waters, D. (2003). *Inventory control and management* (2nd ed.). Wiley.

Received: 10.10.2026 **Accepted: 16.10.2026** **Published on: 30.10.2026**