

EFFECT OF CASH MANAGEMENT ON PROFITABILITY OF TEXTILE AND APPAREL FIRMS IN KENYA

¹*Janet Jemutai Kibogo, ²Lawrence K. Kibet & ³Nehemiah Kiprop Kiplagat
^{1,2&3} Kabarak University, Kenya

*Email of the Corresponding Author: jkibogo@kabarak.ac.ke

September 2025

ABSTRACT

The textile and apparel industry in Kenya contribute significantly to the country's export earnings. However, it faces profitability challenges due to increasing competition both locally and internationally. This study investigated the effect of cash management on the profitability of textile and apparel firms in Kenya. The study was anchored on the Miller-Orr Model. Employing a correlational research design, data was collected from all 75 finance managers across Nairobi, Machakos, Mombasa, Nakuru, Uasin Gishu, Kiambu, Kilifi, Kitui, and Kisumu using structured questionnaires. Given the small population, a census approach was applied. Data was collected using a structured questionnaire, achieving an 84% response rate (n=63). The findings revealed a strong positive and statistically significant relationship between cash management and profitability ($r=0.817$, $p<0.05$). Regression analysis further indicated that cash management accounts for 66.7% of the variance in profitability ($R^2=0.667$). The regression coefficient ($B=0.661$, $p<0.05$) confirmed that a one-unit increase in cash management practices leads to a 0.661 unit increase in profitability. The findings support the rejection of the null hypothesis, confirming a significant positive effect of cash management on profitability. The study concludes that effective cash management is a crucial determinant of profitability in the Kenyan textile and apparel sector. It was recommended that firms prioritize the adoption of advanced cash flow forecasting models and maintain adequate liquidity reserves to enhance financial performance and ensure long-term sustainability.

Keywords: *Cash Management, Profitability, Cash Forecasting, Liquidity Management.*

I. INTRODUCTION

1.1 Background of the Study

Profitability is a critical measure of financial health for textile and apparel firms, enabling them to sustain operations, invest in growth, and navigate economic volatility (Gitman & Zutter, 2019). In Kenya, the textile and apparel sector contribute 0.6% to GDP and 6% to manufacturing output but struggles with low profitability, with average net margins below 5% compared to regional benchmarks of 10–15% (KAM, 2023; KNBS, 2024). Cash management, a core component of working capital management, involves forecasting cash flows, monitoring balances, managing liquidity, controlling debt, and maintaining reserves to ensure operational efficiency and financial stability (Ross *et al.*, 2018). Effective cash management minimizes idle funds, reduces borrowing costs, and ensures timely payments, directly enhancing profitability (Shin & Soenen, 2019).

Globally, textile firms in Bangladesh have increased profitability by 20% through automated cash forecasting, while Vietnam's apparel sector improved margins by 15% via real-time monitoring (ILO, 2021; UNIDO, 2023). In the United States, cash management strategies reduced financing costs by 18% for manufacturing firms (Thompson & Lee, 2020). In Africa, Nigeria's textile firms improved profitability by 12% through forecasting, and Uganda's small businesses enhanced performance by 10% via cash budgeting (Adebayo & Okeke, 2023; Omyango, 2020). In Kenya, rising production costs, exchange rate volatility, and delayed receivables disrupt cash flows, with interest rates at 13% increasing borrowing costs (CBK, 2023; EPZA, 2024).

Firms like Rivatex East Africa Ltd reported losses exceeding KSh 300 million due to liquidity shortages (Business Daily, 2023). Despite policy efforts like the Draft Cotton, Textile, and Apparel Policy (MoITED, 2024), manual cash tracking persists, necessitating this study to examine the effect of cash management on profitability in Kenya's textile and apparel sector. Cash management is defined as optimizing cash inflows and outflows, measured by forecasting accuracy, monitoring efficiency, liquidity adequacy, debt management, and reserve reviews (Gitman & Zutter, 2019). Profitability, measured by return on assets (ROA) and net profit margin, reflects a firm's ability to generate earnings (Brigham & Houston, 2021). The study targets 75 KAM-registered firms across nine counties, selected for their economic significance and diverse operational contexts.

1.2 Statement of the Problem

Kenya's textile and apparel industry, valued at \$330 million, is vital for economic growth but faces low profitability, with net margins below 5% in 2023, compared to 10–15% in competitive regional markets (EPZA, 2024; KNBS, 2024). Inefficient cash management, including poor forecasting and inadequate liquidity reserves, leads to cash shortages, operational disruptions, and reliance on costly financing, exacerbated by 13% interest rates (CBK, 2023). Order delays and extended cash conversion cycles affected 30% of firms in 2022, hindering growth (KNBS, 2025). While studies like Gateri *et al.* (2019) and Hamida *et al.* (2020) suggest cash management enhances profitability, they lack focus on Kenya's textile sector, which faces unique challenges like seasonal cash flows and import reliance. This study investigated the effect of cash

management on profitability, addressing these contextual gaps to inform strategies for financial sustainability.

1.3 Objectives of the Study

To examine the effect of cash management on the profitability of textile and apparel firms in Kenya.

1.4 Research Hypotheses

H₀: There is no statistically significant effect of cash management on the profitability of textile and apparel firms in Kenya

II. LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Miller-Orr Model

The Miller-Orr Model, developed by Merton Miller and Daniel Orr in 1966, is a stochastic framework for managing cash balances under uncertain cash flows (Samadzadeh, 2021). It assumes cash flows fluctuate randomly, requiring firms to maintain balances between an upper and lower control limit. Excess cash above the upper limit is invested in marketable securities, while balances below the lower limit trigger borrowing or asset liquidation to restore the target return point (Michalski, 2023). The model minimizes transaction and opportunity costs, with the optimal cash balance spread calculated as:

$$Z = \left(\frac{4 \cdot i \cdot b \cdot \sigma^2}{3} \right)^{1/3}$$

Where:

- b is the transaction cost,
- σ^2 is the variance of cash flows, and
- i is the daily interest rate.

Where b is transaction cost, σ^2 is cash flow variance, and i is the daily interest rate. The model's simplicity and adaptability suit volatile environments, but it assumes random cash flows and overlooks credit constraints, limiting applicability in Kenya's textile sector (González-Díaz *et al.*, 2022). The model's focus on forecasting and monitoring aligns with the study's objective, as it supports maintaining liquidity while optimizing profitability in firms with seasonal cash flows.

2.2 Empirical Review

Dhruba (2019) studied cash management in Nepal's small manufacturing firms ($n=80$, correlational design), finding a positive but insignificant effect on profitability. Hamida *et al.* (2020) analyzed 317 Pakistani listed firms from 2010 to 2019, reporting a significant positive effect, which was moderated by family ownership. Omyango (2020) found that cash budgeting in

Ugandan small businesses (n=80) enhanced performance. Wesonga (2019) reported that cash budgeting in Kenyan small enterprises (n=150) predicted performance. Gateri *et al.* (2019) found that cash budgeting in Kenyan schools (n=184) improved performance. Motende (2019) noted that cash management in Nairobi’s manufacturing firms enhanced profitability. Olunja (2022) reported that cash flow management in Kenyan banks improved profitability. These studies highlight the importance of cash management but lack a focus on Kenya’s textile sector, where seasonal cash flows and high borrowing costs prevail, necessitating this study.

2.3 Conceptual Framework

The framework is developed from existing literature and theories, providing a theoretical foundation for the study (Saunders, Lewis & Thornhill, 2019). It defines the study's scope by identifying the independent, dependent, and any mediating or moderating variables. The independent variables are the factors that are believed to influence the dependent variable, which is the outcome the researcher aims to measure or explain. Figure 1 presents the conceptual framework of the study. This framework illustrates the direct relationship between the independent variable, Cash Management, and the dependent variable, Profitability of the Textile Industry. The figure breaks down these two key concepts into their measurable components, showing how effective practices in cash forecasting, monitoring, and debt and liquidity management are hypothesized to drive profitability metrics such as profit growth, margin sustainability, and the ability to reinvest and expand.

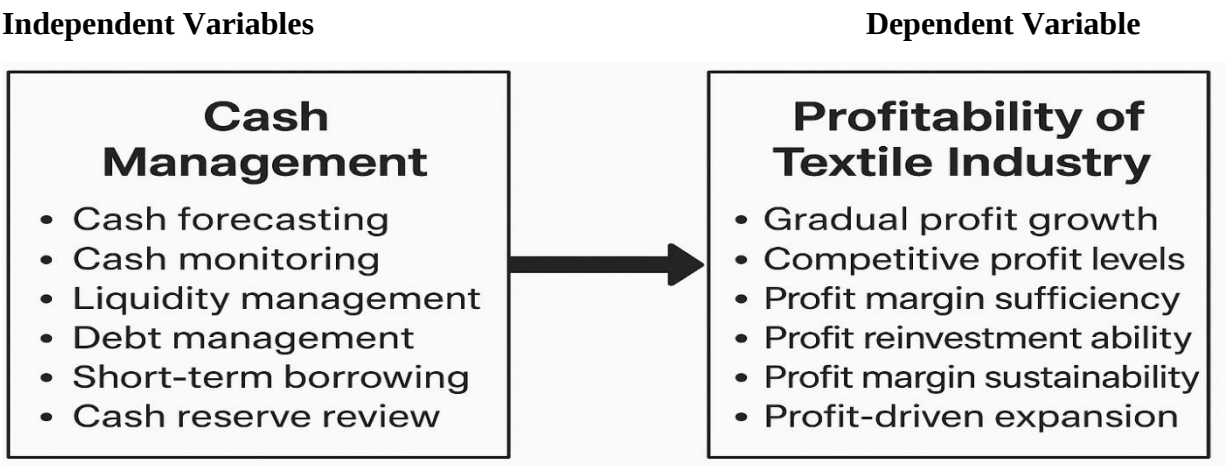


Figure 1: Conceptual Framework

The framework illustrates that cash management influences profitability through forecasting, monitoring, liquidity, debt control, and reserve management, supported by the Miller-Orr Model.

2.4 Research Gaps

The table provides a concise summary of the empirical review, highlighting key studies on cash management. It outlines each study's purpose, main findings, and identified gaps in the literature. Crucially, the table explains how the current research addresses these gaps by focusing specifically on the unique challenges within Kenya's textile sector.

Table 1: Summary of Research Gaps

Authors	Main Purpose	Empirical Findings	Study Gaps	How This Study Fills Gaps
Dhruba (2019)	To examine cash management in Nepal's small firms.	Found a positive, but insignificant, effect on profitability.	Did not focus on the textile industry.	This study targets Kenya's textile sector, isolating the effects of cash management components within that specific context.
Hamida <i>et al.</i> (2020)	To assess the effect of cash management on Pakistani firms.	Found a significant positive effect on profitability.	Focused on large, listed firms.	This study examines local textile firms in Kenya, addressing constraints and practices relevant to smaller, unlisted businesses.
Gateri <i>et al.</i> (2019)	To evaluate cash management in Kenyan schools.	Found a positive effect on performance.	Did not focus on the textile industry.	This study applies the principles of cash management to textile firms, specifically focusing on challenges unique to this sector.

III. RESEARCH METHODOLOGY

Research Design

A correlational research design was adopted to examine the relationship between cash management and profitability without manipulating variables. This design is suitable for assessing the strength and direction of associations (Kothari, 2014), aligning with the objective of quantifying cash management's effect on profitability.

Target Population

The target population comprised 75 finance managers from KAM-registered textile and apparel firms, selected for their role in cash management decisions (KAM, 2024). The distribution is: Nairobi (36), Machakos (9), Mombasa (11), Nakuru (6), Uasin Gishu (5), Kiambu (5), Kilifi (1), Kitui (1), Kisumu (1).

Sample Size and Sampling Procedure

The study used census approach to include all 75 finance managers to ensure comprehensive data collection, given the small population size.

Research Instruments

Data was collected using a structured questionnaire with closed-ended items on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). The questionnaire covered cash management

(forecasting, monitoring, liquidity, debt management, reserve reviews), and profitability (ROA, net profit margin). Drop-and-pick method was used in Nairobi, Nakuru, Uasin Gishu, Kiambu, Machakos, and Mombasa, with Google Forms for Kilifi, Kitui, and Kisumu.

Pilot Study

A pilot study in Nairobi involved seven finance managers (10% of the population) to test questionnaire clarity and reliability. Revisions simplified complex terms (cash flow optimization to maintaining sufficient cash flow). Pilot respondents were excluded from the main study as recommended by Mugenda and Mugenda (2019).

Validity of Study Instruments

Face and content validity were ensured through supervisor reviews to confirm alignment with cash management indicators, as suggested by Taherdoost (2016). External validity was achieved by targeting a representative population.

Reliability of Study Instruments

Cronbach's Alpha for cash management was 0.754, exceeding the 0.7 threshold, indicating high reliability as recommended by Saunders and Lewis (2018).

Data Collection Procedure

Ethical clearance was obtained from Kabarak University Research Ethics Committee (KUREC) and Kenya, National Commission for Science, Technology and Innovation (NACOSTI). Informed consent was secured via signed forms. Questionnaires were distributed at firm headquarters, with data entered into SPSS Version 25, cleaned, and stored securely. Physical copies were shredded, and digital data deleted post-analysis as recommended by (Kombo & Tromp, 2019).

Data Analysis and Presentation

Data was analyzed using SPSS Version 25. Descriptive statistics (means, frequencies, standard deviations) summarized cash management practices, while Pearson correlation and multiple regression tested the relationship with profitability. The regression model: $Y = \beta_0 + \beta_1 X_1 + \varepsilon$. Where Y = Profitability, β_0 = Constant, β_1 = Cash management coefficient, X_3 = Cash management, ε = Error term. Results were presented in tables. Diagnostic tests (normality: $p = 0.080$; VIF = 1.637; Durbin-Watson = 2.021) confirmed model validity.

Ethical Considerations

Informed consent was obtained through signed forms, ensuring voluntary participation. Confidentiality was maintained via anonymized questionnaires and encrypted data storage. Physical questionnaires were shredded, and digital data deleted post-analysis. Accurate reporting ensured integrity.

IV. RESEARCH FINDINGS AND DISCUSSION

4.1 Response Rate

Of 75 questionnaires distributed, 63 were returned, yielding an 84% response rate, exceeding the 70–80% threshold for reliable survey data (Table 2).

Table 2: Response Rate

Response	Frequency	Percentage
Expected	75	100
Received	63	84
Difference	12	16
Source: Author (2025)		

4.2 Cash Management

Respondents' perceptions of cash management were assessed using a 5-point Likert scale.

Table 3: Cash Management

Cash Management	SD	D	N	A	SA	Mean	Std Dev.
The firm has effective cash forecasting mechanisms	0%	8%	11%	35%	46%	4.1905	.93078
Cash monitoring is efficient and accurate	0%	11%	14%	33%	41%	4.0476	1.00689
Liquidity management practices ensure the firm maintains sufficient cash flow.	0%	8%	10%	40%	43%	4.1746	.90767
The firm's debt management practices are effective in controlling liabilities.	2%	6%	14%	22%	57%	4.2381	1.02728
Short-term borrowing helps to maintain smooth operations in times of cash shortages.	0%	10%	10%	38%	43%	4.1429	.94795
The firm regularly review cash reserves to handle unexpected expenses	2%	5%	6%	40%	48%	4.2698	.90173
Overall (Mean & SD)						4.1772	0.9537

Key: SD=Strongly Disagree, D=Disagree, N=Neutral, A=Agree, SA=Strongly Agree

Table 3 presents respondents' views on cash management practices. The findings indicate that the highest rated practice was regular reviews of cash reserves (mean = 4.2698, SD = 0.90173), with 48% of respondents strongly agreeing and 40% agreeing. This highlights a proactive risk management culture, where firms ensure preparedness for unexpected expenses. Similarly, debt management practices were rated highly (mean = 4.2381, SD = 1.02728), with 57% of respondents strongly agreeing that liabilities are effectively controlled, reflecting prudent financial discipline. Cash forecasting mechanisms also demonstrated strong effectiveness (mean = 4.1905, SD =

0.93078), though only 35% of respondents agreed that advanced forecasting tools were in place. This suggests a gap in technological adoption despite widespread recognition of forecasting importance. Liquidity management practices (mean = 4.1746, SD = 0.90767) were also positively rated, reinforcing firms' ability to maintain sufficient cash flow for operations.

Cash monitoring was evaluated as efficient and accurate (mean = 4.0476, SD = 1.00689), while short-term borrowing (mean = 4.1429, SD = 0.94795) was recognized as a practical tool for sustaining operations during cash shortages. Both practices received favorable perceptions, though their means were slightly lower compared to reserve reviews and debt management. Overall, the composite mean of 4.1772 (SD = 0.9537) underscores the presence of robust cash management practices across firms. These results align with the Miller-Orr Model, which emphasizes the importance of maintaining optimal cash balances to minimize liquidity risk while ensuring operational continuity. The results suggest that while firms exhibit strong cash management practices, there is room for improvement in the adoption of advanced forecasting systems to enhance precision in financial planning.

4.3 Profitability

The researcher sought to assess the effect of profitability of the textile and apparel firms in Kenya. The findings were as indicated in Table 4.

Table 4: Profitability

Profitability	SD	D	N	A	SA	Mean	Std Dev.
The firm has been recording a gradual growth in its profit levels	3%	11%	13%	25%	48%	4.0317	1.16354
The firm profit level is competitive compared to the profit level of other companies within the sector	2%	8%	10%	25%	56%	4.2540	1.03126
The firm's profit margins are sufficient to cover operational and production costs effectively.	0%	10%	6%	52%	32%	4.0635	.87755
The firm can re-invest a large amount of its profit back into the company	3%	19%	11%	35%	32%	3.7302	1.19416
There has been sustainable growth in profit margins over the years	0%	8%	10%	33%	48%	4.2381	.92831
The firm's profit levels have enabled it to expand and diversify its product offerings over time.	3%	11%	11%	49%	25%	3.8254	1.04016
Overall (Mean & SD)						4.0238	1.0391

Key: SD=Strongly Disagree, D=Disagree, N=Neutral, A=Agree, SA=Strongly Agree

The findings in Table 13 reveal that textile and apparel firms in Kenya generally demonstrate strong profitability, though with some variation across specific indicators. A majority of respondents (48% strongly agreed, 25% agreed) confirmed that their firms have been recording gradual profit growth, reflected in a mean of 4.0317 (SD = 1.16354). This indicates steady improvement in profit levels despite moderate variability in responses. The highest mean score was observed for the statement on competitiveness of profit levels (mean = 4.2540, SD = 1.03126), with 56% strongly agreeing and 25% agreeing. This suggests that most firms perceive themselves as competitive within the sector, consistent with Omyango (2020), who emphasized the role of financial management in sustaining competitiveness.

Regarding sufficiency of profit margins to cover operational and production costs, the mean of 4.0635 (SD = 0.87755) indicates strong agreement (52% agreed, 32% strongly agreed), implying that firms are generally able to meet expenses efficiently. However, reinvestment capacity yielded a relatively lower mean of 3.7302 (SD = 1.19416), with 32% strongly agreeing and 35% agreeing but 22% expressing disagreement or neutrality. This suggests variability in the ability of firms to channel profits back into growth opportunities, echoing Pandey (2020), who noted that reinvestment is a key growth driver but may not be consistently achievable across firms.

Sustainable profit margin growth over time also scored highly (mean = 4.2381, SD = 0.92831), supported by 48% strongly agreeing and 33% agreeing, reflecting long-term stability. Expansion and diversification enabled by profitability had a moderate mean of 3.8254 (SD = 1.04016), with 74% expressing agreement (49% agree, 25% strongly agree), though variability suggests not all firms leverage profitability for growth equally. This finding aligns with Makori & Simiyu (2021), who argue that profitability facilitates diversification and innovation in the textile industry.

The aggregated mean of 4.0238 (SD = 1.0391) confirms that profitability among textile and apparel firms in Kenya is perceived as strong. Nevertheless, inconsistencies in reinvestment and expansion highlight that while firms achieve competitive and sustainable profits, their strategic deployment of these profits differs, affecting long-term growth potential.

4.4 Correlation Analysis

Table 5: Correlation Analysis

Variable	Cash Management	Profitability
Cash Management	1	0.817**
Profitability	0.817**	1

*N = 63; **Correlation is significant at the 0.05 level (2-tailed).

Table 5 presents the correlation results between cash management and profitability. The study indicated a significant positive correlation between cash management and profitability (($r = 0.817$, $p < 0.05$). This outcome suggests that effective cash management practices, such as cash flow forecasting, liquidity management, and maintaining adequate reserves, contribute to the profitability of textile and apparel firms in Kenya. These results are consistent with the

observations of Gateri et al. (2019) and Hamida et al. (2020), who similarly noted that sound cash management strategies enhance profitability by minimizing liquidity risks and ensuring operational efficiency.

4.5 Regression Analysis

4.5.1 Model Summary

Table 6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.817	.667	.661	.383

*a. Predictors: (Constant), Cash Management (and other variables in the original model)

b. Dependent Variable: Profitability

The regression model summary reveals that the correlation coefficient (R) is 0.817, indicating a strong positive relationship between cash management and profitability of textile and apparel firms in Kenya. The coefficient of determination (R^2) is 0.667, which implies that approximately 66.7% of the variation in profitability can be explained by cash management practices. This highlights the critical role that effective cash management plays in influencing firm performance. The adjusted R^2 of 0.661 further confirms the robustness of the model by accounting for any potential bias that arises from the number of predictors used. Additionally, the standard error of the estimate (0.383) is relatively low, suggesting that the prediction errors of the model are minimal, thus enhancing the accuracy and reliability of the regression results. These findings underscore that cash management is a key determinant of profitability, with a substantial explanatory power over the financial outcomes of firms in the textile and apparel sector.

4.5.2 Analysis of Variance (ANOVA) Table 7: ANOVA

Table 7: ANOVA (Simple Linear Regression for Cash Management)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	17.967	1	17.967	122.224	.000
Residual	8.970	61	0.147		
Total	26.937	62			

*a. Dependent Variable: Profitability

b. Predictors: (Constant), Cash Management

The analysis of variance (ANOVA) further supports the significance of the regression model. The results show a regression sum of squares of 17.967 compared to a residual sum of squares of 8.970, yielding a high F-statistic of 122.224 with 1 and 61 degrees of freedom. The significance level (p-value = 0.000) indicates that the relationship between cash management and profitability is statistically significant at the 5% level. This means that cash management contributes meaningfully

to variations in profitability and that the likelihood of these results occurring by random chance is extremely low. The high F-value also demonstrates the model's explanatory strength, confirming that cash management practices, such as liquidity planning, cash flow forecasting, and monitoring, substantially influence the financial performance of textile and apparel firms.

4.5.3 Coefficients

Table 8: Coefficients

Predictor	B	Std. Error	Beta	t	Sig.
(Constant)	0.847	0.411		2.062	0.044
Cash Management	0.661	0.161	0.465	4.094	0.000

*a. Dependent Variable: Profitability

Table 8 presents the regression coefficients that explain the influence of cash management on profitability. The unstandardized coefficient ($B = 0.661$, Std. Error = 0.161) indicates that for every one-unit increase in cash management, profitability increases by 0.661 units, holding other factors constant. The standardized coefficient ($\beta = 0.465$) further shows that cash management has a moderately strong positive effect on profitability when compared to other predictors in the model. The t-value of 4.094 with a significance level of $p < 0.05$ confirms that the effect of cash management on profitability is statistically significant. This demonstrates that improvements in cash management practices such as cash forecasting, monitoring, and liquidity management substantially contribute to enhancing financial performance. The constant term ($B = 0.847$, $p = 0.044$) is also statistically significant, suggesting that firms maintain a baseline level of profitability even in the absence of the predictors. This intercept highlights that while other factors contribute to financial performance, effective cash management significantly raises profitability above the baseline.

The study further sought to test null hypothesis (H_0) that stated that there is no statistically significant effect of cash management on the profitability of textile and apparel firms in Kenya. Since the p-value (0.000) is less than 0.05, the null hypothesis is rejected. This confirms that cash management has a significant positive effect on profitability. The results imply that effective cash practices such as forecasting, monitoring, and liquidity control play a crucial role in enhancing the financial performance of textile and apparel firms.

V. CONCLUSION

The study examined the effect of cash management on the profitability of textile and apparel firms in Kenya. The overall mean for cash management practices was 4.1772 (SD = 0.9537), indicating that effective cash management contributes significantly to firm profitability. A significant positive correlation was observed between cash management and profitability ($r = 0.817$, $p < 0.05$). Regression analysis showed that cash management explains 66.7% of the variation in profitability among the firms ($R^2 = 0.667$). The unstandardized coefficient ($B = 0.661$, $p = 0.000$) indicates that

a unit increase in cash management leads to a 0.661 increase in profitability. These results confirm that efficient cash management is a key driver of profitability in the textile and apparel sector.

The null hypothesis (H_0) was rejected, confirming that cash management significantly affects profitability. Practices such as cash flow forecasting, maintaining optimal cash balances, and avoiding idle cash were identified as key drivers of financial performance. Conversely, poor cash management may result in liquidity shortfalls, unmet obligations, or missed investment opportunities. Therefore, textile and apparel firms should prioritize strong cash budgeting and control mechanisms to improve efficiency, reduce financial strain, and support growth.

VI. RECOMMENDATIONS

In light of the findings, it is recommended that textile and apparel firms in Kenya strengthen their cash management practices to maximize profitability. Since the study established that cash management accounts for 66.7% of variations in profitability, firms should prioritize the adoption of advanced cash flow forecasting models that enable managers to predict inflows and outflows accurately and plan for future liquidity needs effectively. Additionally, organizations should maintain adequate liquidity reserves to cushion themselves against unforeseen shocks, such as delays in receivables or fluctuations in market demand, which could otherwise disrupt operations. The use of real-time digital financial dashboards is also encouraged, as such technologies allow firms to monitor their cash positions continuously and make quick, evidence-based decisions. Moreover, management teams should invest in continuous professional training for finance officers and procurement managers to build their capacity in applying modern cash management strategies. Finally, industry regulators and associations should support the sector by establishing policies and providing incentives that encourage innovation and the adoption of financial technologies, thereby improving overall competitiveness and sustainability in the textile and apparel industry.

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