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Impact of Working Capital Management On Profitability of Companies Evidence from Food Sector Firms of Pakistan

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Abstract

This study uses 99 firm-level observations to examine how working capital management affects corporate performance. The descriptive analysis reveals that there is a considerable variation in profitability amongst firms, with Return on Assets (ROA) averaging 6.55 with a standard deviation of 9.98, ranging from –22.09 to 27.49. Due to variations in how businesses collect receivables and settle supplier obligations, the Average Payment Period (APP) is 49.07 days and the Average Collection Period (ACP) is 21.14 days. With an average of 87.55, inventory (INV) records show a variety of inventory management techniques. When combined, these metrics imply that effective management of inventory, payables, and receivables improves liquidity and boosts profitability. Businesses that keep these working capital components in the best possible balance experience reduced financial risk and increased operational effectiveness. On the other hand.

Keywords: working capital management, corporate performance, liquidity, profitability, financial risk, inventory turnover, credit policy

Introduction

Effective working capital management (WCM) is important for all organizations since it reflects financial health by showing the current assets' status in the balance sheet. For financial managers, WCM acts as a critical tool for planning and controlling internal operations. According to Eljelly (2004) and Gitman, Juchau, and Flanagan (2015), WCM is a core aspect of internal management practices utilized to analyze and manage a firm's financial performance. WCM efficiency is of special concern in manufacturing companies in which a large share of the total assets consists of short-term assets (Van Horne &Wachowicz, 2008). Empirical research conducted by Raheman& Nasr (2007) verifies that WCM has direct implications for profitability and liquidity and thus sustaining a trade-off between the two is critical. Inability to strike such a balance could result in liability distress or even bankruptcy (Kargar& Blumenthal, 1994; Shah & Khan, 2017). Working capital management (WCM) assumes a very significant function in sectors like food and personal care products, whose current assets form a significant percentage of the total asset base. Nevertheless, such a sector has not drawn many academic studies despite its financial significance. Current assets normally include cash and cash equivalents, inventories, marketable securities, receivables, prepaid expenses, and other easily convertible resources. Net working capital—obtained by subtracting current liabilities from current assets—is a key determinant of financial flexibility. Businesses that have an ideal balance of current liabilities and assets can effectively service short-term liabilities and ensure smooth operations, while inefficient WCM can result in negative net working capital and lower levels of operational effectiveness. The main objective of WCM Is to match day-to-day activities, optimize profitability, and reduce liquidity risk. Working capital shortages hamper business operations, and too much working capital

involves opportunity costs, particularly when it is externally financed. Firms should thus keep working capital at the optimum level. As Raheman& Nasr (2007) point out, not paying suppliers promptly may enhance liquidity but then becomes expensive if early payment discounts are offered. While there have been many studies of capital structure, early findings by Modigliani and Miller (1958) demonstrated—assuming no taxes—that firm value is not dependent on debt level. In their follow-up study (1963), Modigliani and Miller took corporate taxes into account and found interest deductibility raises the value of a firm and theoretically enables 100% debt financing. Additional work by Drobetz and Fix (2003) determined that asset tangibility and firm size were positively related to leverage, whereas profitability and growth were negatively related. Bradley, Jarrell, and Kim (1984) also discovered that earnings volatility, R&D expenditure, and advertising have a negative impact on leverage, whereas non-debt tax shields positively affect it. Shah and Khan (2007), in a study of non-financial companies quoted on the Karachi Stock Exchange, concluded that profitability was the most important lever with a negative coefficient, whereas tangibility had a positive significant relationship with debt. Based on this literature, WCM becomes a central performance driver for firms. This paper aims to examine the relationship between profitability and WCM in Pakistan's FPCP industry, which has been under-explored. As firms within this industry hold a significant percentage of current assets, effective WCM should be the central factor in enhancing working performance and financial health. The study focuses on FPCP firms that are listed on the Pakistan Stock Exchange (PSX) for a period of eleven years (2014–2024), and covers eight companies. According to past research studies (Shah &Qayyum, 2015), five variables are chosen to investigate the relationship between WCM and profitability. Proper liquidity management is necessary to continue the operations, to fulfill the obligations, and to raise internal funds without compromising the profitability. Companies that have good liquidity management are better placed to manage risk, minimize short-term debt commitments, and deploy resources more efficiently to improve overall performance.

Literature Review

Numerous scholars have investigated working capital management (WCM) across different countries, sectors, and economic settings, yielding both consistent and divergent findings. The following studies are particularly relevant to the present research.

Raheman and Nasr (2007) emphasized that firms must give adequate attention to WCM to maintain optimal liquidity and profitability, warning that neglect could lead to bankruptcy. Smith (1973) demonstrated that many organizational failures stem from managers' inability to allocate and control current assets and liabilities effectively, while Smith (1980) further noted that WCM directly affects profitability and, consequently, a firm's stock value. Raheman, Qayyum, and Afza (2011) reinforced the need for proper planning and control of WCM since it involves two crucial balance sheet components: current assets and current liabilities. To avoid insolvency, companies must maintain sufficient liquid resources to meet short-term obligations. Richards and Laughlin (1980) introduced the cash conversion cycle (CCC) as a key metric for assessing WCM efficiency. Yeager and Seitz (1989) observed that excessive reliance on short-term borrowings creates a trade-off between profitability and interest costs, with both overly high and extremely low liquidity levels carrying associated risks. Contrary to the traditional view, Blinder and Maccini (1991) argued that higher investment in working capital can boost profitability by preventing production stoppages, reducing price fluctuations, avoiding stock-out losses, and minimizing supply-chain disruptions.

Deloof (2003), analyzing 1,009 Belgian firms (1992–1996), found profitability to be inversely related to CCC, accounts receivable period, inventory turnover, and accounts payable period, suggesting that reducing collection and inventory holding times enhances WCM efficiency. Afza and Nazir (2007), studying 205 KSE-listed companies (1998–2005), concluded that aggressive

WCM policies negatively impact profitability. Similarly, Ganesan (2007), examining 349 firms in the telecommunications and equipment sector (2001–2007), found that WCM efficiency does not directly affect financial performance, though industry liquidity showed a strong negative link to profitability.

Chawla, Harkawat, and Khairnar (2010), using regression and correlation analysis on three Indian petrochemical companies (2004–2009), confirmed a significant inverse relationship between profitability, CCC, and its components. Gill, Biger, and Mathur (2010) analyzed 88 NYSE-listed firms (2005–2007) and found CCC positively associated with profitability, while accounts receivable period had a negative effect. Nobanee, Abdullatif, and Al-Hajjar (2010), investigating 34,771 Japanese firms (1990–2004), reported a strong negative relationship between accounts receivable, CCC, and profitability—except in service and consumer goods sectors—suggesting that managers should reduce CCC and receivables while extending supplier payment periods.

Ali (2011), studying 160 Pakistani textile firms (2000–2005) with fixed-effects panel data, observed negative associations between receivables, payables, inventory turnover, and return on assets (ROA), while CCC showed a positive correlation with ROA. Bieniasz and Gołaś (2011) analyzed food sector firms across Poland and the Eurozone (2005–2009) and concluded that minimizing CCC increases profitability. Their findings revealed that profitability is negatively affected by accounts receivable and inventory turnover but positively by current liabilities. Saghir, Hashmi, and Hussain (2011), studying 60 KSE-listed textile companies (2001–2006), reported that both accounts receivable and accounts payable periods negatively affect profitability.

Kulkanya (2012) evaluated 255 Thai firms (2007–2009) and found that reducing inventory conversion, receivable collection periods, and CCC enhances profitability. Muhammad, Ullah, and Jan (2012), analyzing Pakistani textile companies (2001–2006), showed profitability positively correlated with cash, inventory, and receivables, but inversely with payables. Ngwenya (2012), studying 69 Johannesburg Stock Exchange firms (1998–2008), reported a significant positive link between accounts payable and profitability, but a strong negative relationship between CCC and profitability. Pouraghajan and Emamgholipourarchi (2012), analyzing Tehran Stock Exchange firms (2006–2010), found a significant positive relationship between profitability and effective WCM, recommending reduced CCC and lower total debt ratios to enhance performance.

Sarbapriya (2012), assessing 311 Indian manufacturing firms (1996–1997 and 2009–2010), identified strong inverse relationships between profitability and WCM indicators such as ACP, APP, CCC, ITID, current ratio, debt ratio, and firm size. Usama (2012), extending Raheman and Nasr's (2007) work, examined 18 Pakistani food sector firms (2006–2010) and found WCM positively affects both liquidity and profitability. His study also showed that firm size and financial asset ratios positively influence profitability, whereas ACP has a negative effect. Vural, Sökmen, and Çetenak (2012), analyzing 75 Istanbul Stock Exchange firms (2002–2009), found inverse relationships between profitability, CCC, debt ratio, and receivable period, while firm size exerted a positive impact.

Thuraisingam (2013) examined 47 Colombo Stock Exchange firms (2008–2011) and reported a significant positive association between WCM and profitability. Zubair and Muhammad (2013), studying 21 KSE-listed cement firms (2004–2010), found a negative link between WCM and profitability. Agha (2014), analyzing GlaxoSmithKline (1996–2011), observed that while current ratio had no impact on profitability, average inventory turnover, collection period, and payment period significantly influenced firm performance.

Iqbal and Zhuquan (2015) studied 85 KSE-listed firms (2008–2013) and confirmed that ACP, ITID, APP, and CCC have inverse relationships with ROA, whereas firm size and sales growth positively affect profitability. Muhammad, Jibril, Wambai, Ibrahim, and Ahmad (2015), researching seven Nigerian food product firms (2008–2012), found current ratio, firm size, and

ACP positively associated with profitability, while ITID and APP had negative effects, noting that excessive liquidity imposes unnecessary costs. Shah and Khan (2017), studying 14 Pakistani commercial banks (2007–2014), reported that equity-to-assets, debts-to-assets, deposits-to-assets, bank size, and asset management significantly influence banking sector profitability.

Research Methodology

This section of the research presents the hypotheses of the study, they conceptual framework they derived from existing literature, as well as the methodology and the model adopted to explore the influence of Working Capital Management (WCM) on the profitability of Food and Personal Care Product firms listed on the Pakistan Stock Exchange (PSX). Analysis is based on data drawn from the annual reports of 8 sample firms—selected based on availability of data out of a total of 20 listed companies, spanning a period of eleven years from 2014 to 2024 (Shah, 2014).

Based on previous studies and theory, this research develops the following hypotheses to answer its main research question:

- H_0: There is no significant relationship between WCM and Food and Personal Care Product companies' profitability in Pakistan.
- H_1: There is a significant relationship between WCM and profitability of Food and Personal Care Product companies of Pakistan.

For testing the above hypothesis, the following regression model will be employed:

$$ROA_{it} = \beta 0 + B1ACP_{it} + B2APP_{it} + B3ITID_{it} + B4CR_{it} + B5SG_{it} + \varepsilon_{it}$$

Where:

ROA is short for Return on Assets, ACP stands for Average Collection Period, ITID means Inventory Turnover in Days, APP is short for Average Payment Period, CR stands for Current Ratio, SG stands for Sales Growth, and ε represents the error term. All these variables are discussed elaborately below.

The performance of companies, as indicated by profitability, is gauged by Return on Assets (ROA). ROA determines the effectiveness of a company in utilizing assets to produce earnings and is extensively utilized in prior research as a prominent profitability measure. It is determined by dividing the net income of an organization by its total assets, thus showing asset utilization efficiency.

Average Collection Period (ACP) is used to calculate the average period a company takes in collecting short-term receivables from the debtors and is an indicator of working capital effectiveness. Average Payment Period (APP) indicates the average period a company takes in paying the debts due to the creditors and is usually higher than the ACP. Inventory Turnover in Days (ITID) determines how long it would take to turn inventory into cash or accounts receivable and therefore is a valuable measure for assessing inventory management performance.

Current Ratio (CR) is also taken as a control variable because it has a high degree of association with firm profitability since it is a measure of liquidity and the capability of paying short-term obligations using current assets. Sales Growth (SG) depicts the year-over-year rate of growth in firm sales, calculated by dividing the difference between the current year's sales and the last year's sales by the last year's sales.

Data Analysis

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	99	6.55	9.98	-22.09	27.49
ACP	99	21.14	10.48	4.03	56.1
APP	99	49.07	37.07	8.0	187.0
INV	99	87.56	63.21	11.27	347.62
CR	99	1.52	0.66	0.34	3.87
SG	99	4.26	19.34	-60.3	123.8

Table 1: Descriptive Statistics

Financial performance evaluation is essential for understanding the operational efficiency and stability of firms. Descriptive statistical analysis serves as a foundational step in examining key financial indicators, offering insights into the central tendencies and variations within the dataset. This section focuses on six critical variables—Return on Assets (ROA), Average Collection Period (ACP), Average Payment Period (APP), Inventory (INV), Current Ratio (CR), and Sales Growth (SG). Analyzing these variables helps in identifying patterns, assessing financial health, and providing a basis for further empirical investigation into the relationship between working capital management and firm profitability. To understand the general behavior and distribution of the financial variables under consideration, descriptive statistics were conducted for all six key indicators: Return on Assets (ROA), Average Collection Period (ACP), Average Payment Period (APP), Inventory (INV), Current Ratio (CR), and Sales Growth (SG). The dataset consists of 99 observations for each variable. The average ROA was approximately 6.55%, indicating that, on average, the firms generated a modest return on their assets. However, the relatively high standard deviation of 9.98 and the wide range (from -22.09% to 27.49%) suggest considerable variability in profitability across firms. The Average Collection Period (ACP) had a mean of 21.14 days, implying that companies took around three weeks on average to collect receivables. The range, stretching from 4.03 to 56.1 days, along with a standard deviation of 10.48, reveals that credit policies and collection efficiency differed notably among firms. For the Average Payment Period (APP), the average value stood at 49.07 days, which reflects the time firms took to pay their suppliers. The variation is quite significant, with a standard deviation of 37.07 and a maximum period of 187 days, suggesting that some firms had extended payment terms or delayed payments. The Inventory (INV) level exhibited a mean of 87.56 days, indicating that inventory remained in stock for nearly three months on average. The wide spread (from 11.27 to 347.62 days) and high standard deviation (63.21) point to differences in inventory management practices across firms.
The Current Ratio (CR), a measure of liquidity, averaged 1.52, which implies that most firms could comfortably cover their short-term obligations. The minimum ratio of 0.34 indicates liquidity stress for some firms, while the maximum of 3.87 shows strong liquidity in others. Lastly, Sales Growth (SG) had a mean of 4.26%, showing moderate growth across the firms. However, the extreme values (ranging from -60.3% to 123.8%) and the high standard deviation (19.34) reflect large differences in growth rates, with some firms experiencing sharp declines and others substantial expansion.

Statistic	Value	p-value
Unadjusted t	-3.071	
Adjusted t*	-1.323	0.093

Note. Levin–Lin–Chu (LLC) test for ROA. Ho: Panels contain unit roots. Ha: Panels are stationary.

Table 2: Levin–Lin–Chu Unit Root Test Results

Testing the stationary of variables is an essential step in panel data analysis because non-stationary series can produce misleading or spurious regression results. To examine whether Return on Assets (ROA) is stationary, the Levin–Lin–Chu (LLC) unit-root test was applied to nine cross-sectional panels observed over eleven periods. The test was conducted with one lag in the ADF regressions, including panel means but excluding a time trend, and employed a Bartlett kernel with an average of seven lags for long-run variance correction.

The null hypothesis of the LLC test assumes that all panels contain a unit root, while the alternative hypothesis indicates that the panels are jointly stationary. The results show an adjusted test statistic of –1.3232 with a p-value of 0.0929. Since this p-value exceeds the conventional 5% significance level—and is only marginally near the 10% level—the null hypothesis cannot be rejected at the 5% level. This suggests that ROA is not strongly stationary, with only weak evidence of stationarity at best.

The test results indicate that ROA may exhibit unit-root behavior, meaning its statistical properties, such as mean and variance, could vary over time rather than remaining constant. The inability to reject the null hypothesis at the 5% level implies that ROA values may follow trends or fluctuations, which could affect the reliability of regression results if used without adjustment. While there is some weak indication of stationarity at around the 10% level, it is not strong enough to rely on without further processing. Therefore, differencing or other stationarity-inducing transformations may be necessary to ensure valid panel regression analysis.

Statistic	Value	p-value	1% CV	5% CV	10% CV
t-bar	-1.466		-2.24	-2.02	-1.9
t-tilde-bar	-1.205				
Z-t-tilde-bar	0.345	0.635			

Note. Im–Pesaran–Shin (IPS) test for ROA. Ho: All panels contain unit roots. Ha: Some panels are stationary.

Table 3: Im–Pesaran–Shin Unit Root Test Results

Assessing the stationarity of panel data variables is crucial to avoid spurious regression results. To examine whether Return on Assets (ROA) is stationary, the Im–Pesaran–Shin (IPS) unit-root test was applied to nine cross-sectional panels observed over eleven periods. The IPS test allows for heterogeneity in the autoregressive parameters across panels, making it suitable for data where different firms may exhibit different dynamic behaviors. The test was conducted including panel means but excluding a time trend, and no lags were included in the ADF regressions.

The null hypothesis of the IPS test assumes that all panels contain a unit root, while the alternative hypothesis posits that some panels are stationary. The results show a t-bar statistic of –1.4659, a t-tilde-bar of –1.2053, and a Z-t-tilde-bar of 0.3451 with a corresponding p-value of 0.6350. Compared with the fixed-N exact critical values at conventional significance levels (1%, 5%, and 10%), the t-bar statistic does not exceed the critical thresholds.

The IPS test results indicate that ROA**cannot be considered stationary,** as the null hypothesis of unit roots cannot be rejected at any conventional significance level. The high p-value (0.6350) suggests a strong likelihood that ROA exhibits non-stationary behavior in at least some panels. This implies that the statistical properties of ROA, such as mean and variance, may vary over time, potentially affecting the reliability of regression results if used directly in panel models. Unlike the LLC test, which assumes a common AR parameter, the IPS test accounts for panel-specific dynamics, confirming that even with heterogeneous behavior, ROA tends to remain non-stationary.

Variable	Coefficient	Std. Error	t	p	95% CI
ACP	0.127	0.045	2.85	0.022	[0.024, 0.230]
APP	-0.048	0.042	-1.14	0.287	[-0.145, 0.049]
INV	0.04	0.011	3.7	0.006	[0.015, 0.064]
CR	4.271	3.015	1.42	0.194	[-2.680, 11.223]
SG	0.084	0.074	1.14	0.287	[-0.086, 0.254]
Constant	-4.106	6.833	-0.6	0.565	[-19.863, 11.652]

Note. Dependent variable: ROA. Within $R^2 = 0.332$. $F(5,8) = 9.35$, $p = 0.0034$. $\rho = 0.697$.
***p<0.01, **p<0.05, *p<0.1

Table 4: Fixed-Effects Regression Results

To examine the relationship between firm performance and working capital components, a fixed-effects (within) panel regression was estimated using nine firms observed over eleven periods. This model accounts for time-invariant unobserved heterogeneity across firms, focusing on within-firm variations. The dependent variable is Return on Assets (ROA), while the independent variables include Average Collection Period (ACP), Average Payment Period (APP), Inventory (INV), Current Ratio (CR), and Sales Growth (SG). Robust standard errors clustered at the firm level were used to address potential heteroscedasticity and within-group correlation.

The regression results indicate that ACP has a positive and statistically significant effect on ROA(coefficient = 0.1273, p = 0.022), suggesting that longer collection periods are associated with higher firm profitability, potentially reflecting efficient credit management practices. Inventory (INV) also shows a significant positive impact(coefficient = 0.0397, p = 0.006), indicating that better inventory management contributes positively to ROA.

On the other hand, APP, CR, and SG are not statistically significant at conventional levels, implying that average payment periods, liquidity, and sales growth do not have a discernible effect on ROA in this sample. The overall within-group R-squared is 0.332, indicating that approximately 33% of the within-firm variation in ROA is explained by the model. The F-statistic of 9.35 (p = 0.0034) confirms the model is jointly significant. The variance decomposition shows that 69.7% of the total variation in ROA is due to differences across firms, highlighting the importance of accounting for firm-specific effects.

Robustness Check

Table 5 Robustness Check: Variable	Coefficient	Std. Error	t	p	95% CI
dACP	-0.043	0.036	-1.18	0.27	[-0.127, 0.041]
dAPP	-0.014	0.045	-0.31	0.764	[-0.119, 0.091]

dINV	0.007	0.019	0.36	0.727	[-0.037, 0.051]
dCR	3.043	1.819	1.67	0.133	[-1.151, 7.237]
dSG	0.077	0.075	1.03	0.333	[-0.095, 0.249]
Constant	-0.036	0.101	-0.35	0.734	[-0.269, 0.198]

Note. Dependent variable: ΔROA. Within $R^2 = 0.122$. $F(5,8) = 6.01$, $p = 0.0134$. $\rho = 0.015$.
***p<0.01, **p<0.05, *p<0.1

Table 5: First-Differenced Fixed-Effects Regression

To ensure the reliability of the baseline fixed-effects results, a robustness check was conducted using first-differenced variables. This approach mitigates potential biases arising from non-stationarity or unobserved time-invariant heterogeneity across firms. The dependent variable is the change in ROA (dROA), while the independent variables include the first differences of Average Collection Period (dACP), Average Payment Period (dAPP), Inventory (dINV), Current Ratio (dCR), and Sales Growth (dSG). Robust standard errors clustered at the firm level were used to account for within-group correlation.

The regression results indicate that none of the first-differenced explanatory variables are statistically significant at conventional levels. The coefficients for dACP (–0.0432), dAPP (–0.0141), and dINV (0.00698) suggest that short-term changes in working capital components have limited direct impact on the changes in ROA. The dCR (3.043) and dSG (0.0771) coefficients are positive but also not statistically significant.

The within R-squared of 0.1222 indicates that only about 12% of the variation in dROA within firms is explained by the model. The F-statistic of 6.01 ($p = 0.0134$) confirms that the model is jointly significant, although the low fraction of variance due to firm-specific effects (rho = 0.015) suggests that most variation in dROA comes from idiosyncratic changes rather than persistent firm-level differences. Overall, the results of the first-differenced regression support the robustness of the baseline findings, showing that short-term fluctuations in working capital and liquidity do not significantly affect changes in profitability.

Results and Discussion

The descriptive analysis highlights considerable variation across the study variables. The average return on assets (ROA) stands at 6.55 with a standard deviation of 9.98, indicating heterogeneity in firms' profitability levels. The average collection period (ACP) averages 21.14 days, while the average payment period (APP) is 49.07 days. Inventory turnover in days (INV) shows a mean of 87.55, reflecting differences in inventory holding practices, and the current ratio (CR) averages 1.52. Sales growth (SG) demonstrates substantial volatility, with a mean of 4.26 and a relatively large dispersion (standard deviation 19.34).

Stationarity of the variables was assessed using panel unit root tests. The Levin-Lin-Chu (LLC) test produced an adjusted t-statistic of –1.32 ($p = 0.0929$), and the Im-Pesaran-Shin (IPS) test yielded a t-bar statistic of –1.46, both suggesting weak evidence to reject the null hypothesis of non-stationarity for ROA.

The fixed-effects regression results indicate that ACP ($\beta = 0.127$, $p = 0.022$) and INV ($\beta = 0.039$, $p = 0.006$) are positively and significantly associated with ROA. This suggests that longer collection periods and higher inventory levels are linked to greater profitability among firms. APP, CR, and SG show no statistically significant impact on profitability. The model explains 33% of

within-firm variability in ROA ($R^2 = 0.332$), and the overall model fit is significant ($F = 9.35$, $p = 0.0034$).

A robustness test using first-differenced fixed-effects estimation shows no variable retains significance in explaining short-term changes in ROA, with the within R^2 dropping to 0.122. This implies that, while working capital components explain cross-sectional differences in profitability, they have limited ability to capture short-term dynamics.

The findings reveal that working capital management, particularly receivable collection and inventory policies play a significant role in determining firm profitability. However, payment policies, liquidity position, and sales growth do not exert consistent influence. Furthermore, evidence from panel unit root tests suggests caution in interpreting time-series dynamics, as profitability may contain non-stationary elements. While fixed-effects estimation supports long-run relationships, short-term fluctuations appear less predictable.

Companies should focus more on improving the efficiency of receivable collection processes and managing inventory levels to achieve higher profitability. Ongoing evaluation and refinement of working capital strategies are essential to maintain an optimal trade-off between liquidity and earnings. Additionally, policymakers and regulatory bodies can support this goal by promoting the adoption of industry benchmarks for working capital cycles, ensuring that firms align their practices with sector-wide standards and enhance overall operational performance.

Building on these findings, future studies could utilize dynamic panel estimation methods, such as the Generalized Method of Moments (GMM), to better address endogeneity concerns and account for potential lagged effects. Expanding the scope of the dataset by incorporating more firms or extending the time horizon would strengthen the reliability and applicability of the results. Additionally, including key macroeconomic factors—such as inflation, interest rates, and exchange rates—could provide deeper insights into the broader determinants of profitability. A sector-focused approach may also reveal whether the impact of working capital management on profitability varies across different industries, offering a more detailed understanding of these relationships.

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