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# The Impact of Working Capital Management, Cash Flow Volatility, and Leverage on Financial Sustainability

Original Article

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## Abstract

This study aims to examine the impact of working capital management, cash flow volatility, and leverage on financial sustainability. In an increasingly uncertain and competitive business environment, financial sustainability has become a critical objective for firms seeking long-term stability and growth. This research adopts a quantitative approach using panel data collected from companies listed on the Indonesia Stock Exchange (IDX) over the period 2020–2024. The sample was selected using purposive sampling, resulting in firm-year observations that meet the research criteria. Data were analyzed using panel data regression with the Fixed Effect Model, following the results of model selection tests. The findings reveal that working capital management has a positive and significant effect on financial sustainability, indicating that efficient management of short-term assets and liabilities enhances liquidity and supports long-term financial stability. In contrast, cash flow volatility has a negative and significant effect, suggesting that fluctuations in cash flows increase financial uncertainty and weaken a firm's ability to sustain operations. Similarly, leverage is found to have a negative and significant impact on financial sustainability, implying that excessive reliance on debt increases financial risk and reduces resilience. Additionally, control variables such as firm size, profitability, and growth are shown to positively influence financial sustainability. Overall, this study highlights the importance of effective financial management practices in achieving financial sustainability. Firms are encouraged to optimize working capital efficiency, stabilize cash flows, and maintain prudent leverage levels to enhance long-term performance and resilience. This research contributes to the literature by providing an integrated analysis of key financial determinants of sustainability and offers practical implications for managers and policymakers in improving financial decision-making.

**Keywords:** Financial Sustainability; Working Capital Management; Cash Flow Volatility; Leverage; Panel Data Analysis; Financial Performance; Corporate Finance

## 1. Introduction

In the contemporary business environment, characterized by economic uncertainty, global competition, and rapid technological advancement, achieving financial sustainability has become a fundamental objective for organizations. Financial sustainability refers to a firm's ability to maintain its operations, generate stable profits, and ensure long-term solvency without excessive reliance on external financing. It is closely linked to financial resilience, which reflects a firm's capacity to withstand shocks, manage risks, and sustain growth over time (OECD, 2023; Rahi et al., 2024, as cited in). In this context, internal financial management

practices—particularly working capital management, cash flow stability, and leverage decisions—play a crucial role in shaping a firm's long-term financial viability.

Working capital management (WCM) is a critical component of financial management that focuses on the efficient management of short-term assets and liabilities, including cash, inventory, accounts receivable, and accounts payable. Effective WCM ensures that firms maintain sufficient liquidity to meet their operational needs while minimizing the cost of holding excess resources. Recent studies highlight that optimal working capital levels significantly influence both profitability and sustainability, as firms with efficient WCM tend to experience improved operational performance and reduced financial constraints . Moreover, WCM directly affects the cash conversion cycle (CCC), which serves as a key indicator of how efficiently a firm converts its investments into cash flows.

The importance of WCM has become increasingly evident in the face of global disruptions such as supply chain instability and macroeconomic volatility. Research indicates that firms must carefully balance aggressive and conservative working capital strategies to achieve optimal performance. For instance, a U-shaped relationship between WCM and profitability suggests that both excessively high and excessively low levels of working capital can negatively affect firm performance. This implies that firms must identify an optimal level of working capital to support both short-term liquidity and long-term financial sustainability.

In addition to working capital management, cash flow volatility has emerged as a significant determinant of financial sustainability. Cash flow volatility refers to fluctuations in a firm's operating cash inflows and outflows over time, which can create uncertainty in financial planning and decision-making. Stable cash flows enable firms to meet their obligations, invest in growth opportunities, and maintain financial flexibility. Conversely, high volatility increases the risk of liquidity shortages, financial distress, and reduced investment capacity. Empirical evidence suggests that effective cash flow management enhances firm performance and supports long-term stability by ensuring a consistent flow of financial resources. Furthermore, the interaction between working capital and cash flow is particularly important, as inefficient WCM can exacerbate cash flow instability and undermine financial performance.

Another key factor influencing financial sustainability is leverage, which reflects the extent to which a firm relies on debt financing in its capital structure. Leverage can provide firms with access to additional resources, enabling them to expand operations and increase returns. However, excessive leverage also introduces financial risk, as firms must meet fixed debt obligations regardless of their financial performance. High leverage levels can amplify the impact of economic downturns and increase the likelihood of financial distress. Recent studies emphasize that the relationship between leverage and firm performance is complex and context-dependent, with leverage acting as both a driver of growth and a source of financial vulnerability.

The interplay between working capital management, cash flow volatility, and leverage is particularly important in determining financial sustainability. These factors are interconnected and jointly influence a firm's liquidity, risk profile, and operational efficiency. For example, firms with efficient WCM are better able to manage cash flow fluctuations and reduce reliance on external financing. Similarly, firms with stable cash flows can maintain optimal leverage levels without exposing themselves to excessive financial risk. Conversely, poor management

of any of these factors can create a negative feedback loop, leading to liquidity constraints, increased borrowing costs, and reduced financial resilience.

Despite the growing body of literature on financial management and firm performance, there remains a need for integrated studies that examine the combined effects of WCM, cash flow volatility, and leverage on financial sustainability. Most prior research has focused on individual factors or short-term performance indicators such as profitability, rather than long-term sustainability outcomes. Additionally, the dynamic and uncertain nature of modern business environments necessitates a more comprehensive understanding of how these financial variables interact to influence organizational resilience and sustainability.

This study aims to address this gap by investigating the impact of working capital management, cash flow volatility, and leverage on financial sustainability. By adopting a holistic approach, this research seeks to provide deeper insights into how firms can optimize their financial strategies to achieve sustainable growth. The findings are expected to contribute to both academic literature and practical decision-making by offering evidence-based recommendations for improving financial management practices.

The primary objective of this study is to examine and analyze the impact of working capital management, cash flow volatility, and leverage on financial sustainability. Specifically, this research aims to evaluate how efficient working capital practices influence a firm's ability to maintain long-term financial stability, assess the extent to which cash flow volatility affects financial resilience and operational continuity, and determine the role of leverage in shaping financial sustainability. Furthermore, this study seeks to explore the combined and interactive effects of these variables to provide a comprehensive understanding of how financial management decisions contribute to sustainable business performance.

## 2. Literature Review and Hypothesis Development

### 2.1. Financial Sustainability

Financial sustainability refers to a firm's ability to maintain continuous operations, generate stable income, and preserve financial stability over the long term without excessive dependence on external financing. It is closely associated with financial resilience, which reflects a firm's capacity to absorb shocks and adapt to changing economic conditions. Recent studies emphasize that financial sustainability is influenced by liquidity management, capital structure decisions, and operational efficiency, which together determine a firm's long-term viability (Ortega et al., 2023; OECD, 2023) . In this regard, internal financial management variables such as working capital management, cash flow volatility, and leverage play a critical role in shaping financial sustainability outcomes.

### 2.2. Working Capital Management and Financial Sustainability

Working capital management (WCM) involves the administration of current assets and liabilities to ensure liquidity and operational efficiency. It includes managing components such as inventory, accounts receivable, and accounts payable to maintain a balance between profitability and risk. Efficient WCM enables firms to meet short-term obligations while supporting long-term financial stability.

Recent literature highlights that WCM is a key determinant of both financial performance and sustainability. Firms with efficient working capital practices tend to exhibit improved profitability, reduced financial constraints, and enhanced operational resilience (Feriandy, 2024). Additionally, optimizing the cash conversion cycle (CCC) has been found to significantly influence firm sustainability, as shorter CCC periods improve liquidity and reduce financial risk (Zhang et al., 2025).

Moreover, empirical evidence suggests that proper working capital optimization enhances financial sustainability by improving resource allocation and minimizing inefficiencies (Ortega et al., 2023). However, the relationship between WCM and firm performance is not always linear. Some studies indicate a trade-off between liquidity and profitability, suggesting that both excessive and insufficient working capital levels can negatively impact firm performance (Pham et al., 2025). This implies that firms must achieve an optimal level of working capital to support sustainable operations.

Furthermore, external factors such as supply chain disruptions and macroeconomic uncertainty also influence WCM decisions. Firms tend to increase working capital buffers in response to higher risks, which can enhance resilience but may also reduce efficiency (Reyad et al., 2022; recent supply chain studies). Therefore, effective WCM is essential not only for short-term liquidity but also for long-term financial sustainability.

**H1**: Working capital management has a positive effect on financial sustainability**.**

### 2.3. Cash Flow Volatility and Financial Sustainability

Cash flow volatility refers to fluctuations in a firm's operating cash inflows and outflows over time. It is a critical factor affecting financial planning, investment decisions, and risk management. Stable cash flows allow firms to meet financial obligations, invest in growth opportunities, and maintain operational continuity, whereas high volatility increases uncertainty and financial risk.

Recent studies emphasize that effective cash flow management is essential for maintaining financial stability and improving firm performance. Firms with stable cash flows are better positioned to sustain operations and avoid liquidity crises (Feriandy, 2024). In contrast, high cash flow volatility has been associated with increased financial distress, reduced investment capacity, and lower earnings persistence (Salmayani et al., 2025).

Additionally, cash flow volatility is closely linked to working capital efficiency. Inefficient management of receivables, payables, and inventory can exacerbate cash flow fluctuations, thereby undermining financial stability (Prayoga & Saputri, 2025). This suggests that firms must adopt integrated financial management strategies to control cash flow variability and ensure sustainability.

From a theoretical perspective, firms with stable cash flows are more likely to accumulate internal funds, reducing dependence on external financing and enhancing financial resilience. Conversely, volatile cash flows increase uncertainty and limit a firm's ability to plan and execute long-term strategies. Therefore, minimizing cash flow volatility is crucial for achieving financial sustainability.

**H2**: Cash flow volatility has a negative effect on financial sustainability.

### 2.4. Leverage and Financial Sustainability

Leverage refers to the use of debt financing in a firm's capital structure. It is an important financial decision that affects a firm's risk profile, cost of capital, and financial performance. While leverage can enhance returns by providing additional resources for investment, excessive reliance on debt increases financial risk and vulnerability to economic shocks.

Recent studies indicate that leverage has a complex relationship with firm performance and sustainability. Moderate levels of leverage can improve financial performance by enabling firms to finance growth opportunities and optimize their capital structure (Feriandy, 2024) . However, high leverage levels can lead to financial distress, particularly during periods of economic uncertainty, as firms must meet fixed debt obligations regardless of their financial condition.

Empirical findings also suggest that leverage may weaken financial sustainability when it increases financial risk and reduces flexibility. For example, firms with high debt levels are more susceptible to liquidity constraints and may struggle to maintain stable operations during downturns (Virelia & Ekadjaja, 2025) . Moreover, leverage can amplify the negative effects of cash flow volatility, as unstable cash flows make it more difficult to service debt obligations.

From the perspective of capital structure theory, particularly the trade-off theory, firms must balance the benefits of debt (such as tax advantages) against its costs (such as financial distress). Excessive leverage disrupts this balance and can undermine long-term sustainability. Therefore, maintaining an optimal level of leverage is essential for ensuring financial stability and sustainability.

**H3**: Leverage has a negative effect on financial sustainability.

### 2.5. Integrated Relationship Between Variables

The interaction between working capital management, cash flow volatility, and leverage plays a significant role in determining financial sustainability. These variables are interconnected and collectively influence a firm's liquidity, risk exposure, and operational efficiency.

Efficient working capital management can mitigate cash flow volatility by improving the timing of cash inflows and outflows, thereby enhancing liquidity and reducing financial risk. At the same time, stable cash flows enable firms to maintain optimal leverage levels, reducing reliance on external financing and minimizing financial distress. Conversely, poor management of any of these factors can create a negative cycle, leading to liquidity shortages, increased borrowing costs, and reduced financial sustainability.

Recent studies emphasize the importance of adopting an integrated financial management approach that considers the combined effects of these variables. Firms that effectively manage their working capital, stabilize cash flows, and maintain appropriate leverage levels are more likely to achieve long-term financial sustainability and resilience (Ortega et al., 2023; Feriandy, 2024).

## 2.6. Conceptual Framework

Based on the literature review, this study proposes a conceptual framework in which working capital management, cash flow volatility, and leverage serve as independent variables influencing financial sustainability as the dependent variable.

### 2.7. Summary of Hypotheses

- **H1:** Working capital management has a positive effect on financial sustainability.
- **H2:** Cash flow volatility has a negative effect on financial sustainability.
- **H3:** Leverage has a negative effect on financial sustainability.

## 3. Method

### 3.1. Research Design

This study employs a quantitative research approach using an explanatory research design to examine the causal relationships between working capital management, cash flow volatility, leverage, and financial sustainability. The quantitative method is appropriate as it allows for objective measurement of variables and statistical testing of hypotheses. The explanatory design aims to analyze how independent variables influence the dependent variable, providing empirical evidence regarding the relationships among the studied constructs.

The research adopts a panel data approach, combining cross-sectional and time-series data, to capture both firm-specific and temporal variations. This design enhances the robustness of the analysis and improves the generalizability of the findings.

### 3.2. Population and Sample

The population of this study consists of companies listed on the Indonesia Stock Exchange (IDX) across various sectors. Publicly listed firms are selected because they provide reliable and accessible financial data required for this research.

The sampling technique used is purposive sampling, based on the following criteria:

1. Companies that are consistently listed on the IDX during the observation period (e.g., 2020–2024).
2. Companies that publish complete annual financial statements.
3. Firms with available data on working capital components, cash flow, leverage, and financial performance indicators.
4. Companies that report in Indonesian Rupiah to ensure consistency of measurement.

Based on these criteria, the final sample is expected to include 50–100 firms, resulting in approximately 250–500 firm-year observations.

### 3.3. Data Type and Sources

This study uses secondary data obtained from audited annual financial statements. The data sources include:

- Official website of the Indonesia Stock Exchange (IDX)
- Company annual reports
- Financial databases such as Bloomberg, Thomson Reuters, or similar platforms

The use of secondary data ensures objectivity and reliability, as the data are publicly available and have undergone external auditing processes.

## 3.4. Operational Definition of Variables

### 3.4.1. Dependent Variable

**Financial Sustainability (FS)**

Financial sustainability is defined as the firm's ability to maintain long-term financial stability and operational continuity. It is measured using:

- **Sustainable Growth Rate (SGR)**

SGR = Return on Equity (ROE) × (1 − Dividend Payout Ratio)

Alternatively, financial sustainability can also be proxied by **Altman Z-score** or financial self-sufficiency ratio depending on data availability.

### 3.4.2. Independent Variables

**a. Working Capital Management (WCM)**

Working capital management reflects the efficiency of managing short-term assets and liabilities. It is measured using:

- **Cash Conversion Cycle (CCC)**

CCC = Days Inventory Outstanding + Days Sales Outstanding − Days Payables Outstanding

A shorter CCC indicates more efficient working capital management.

**b. Cash Flow Volatility (CFV)**

Cash flow volatility measures fluctuations in operating cash flows over time. It is calculated as:

- **Standard Deviation of Operating Cash Flow (OCF)** over the observation period

Higher values indicate greater instability in cash flows.

**c. Leverage (LEV)**

Leverage represents the proportion of debt used in a firm's capital structure. It is measured using:

- **Debt-to-Equity Ratio (DER)**

DER = Total Debt / Total Equity

Alternatively, the **Debt Ratio (Total Debt / Total Assets)** may also be used.

### 3.4.3. Control Variables

To improve the accuracy of the model, this study includes control variables commonly used in financial research:

- **Firm Size (SIZE):** Natural logarithm of total assets
- **Profitability (ROA):** Net income / total assets
- **Firm Growth (GROWTH):** Annual percentage increase in sales.

## 3.5. Data Analysis Technique

The data analysis is conducted using **panel data regression analysis**, supported by statistical software such as SPSS, Stata, or EViews. The following steps are undertaken:

### 3.5.1. Descriptive Statistics

Descriptive analysis is used to summarize the characteristics of the data, including mean, median, standard deviation, minimum, and maximum values.

### 3.5.2. Classical Assumption Tests

To ensure the validity of the regression model, several diagnostic tests are performed:

- **Normality Test** (Kolmogorov–Smirnov or Jarque–Bera)
- **Multicollinearity Test** (Variance Inflation Factor – VIF)
- **Heteroscedasticity Test** (Glejser or Breusch–Pagan)
- **Autocorrelation Test** (Durbin–Watson)

### 3.5.3. Panel Data Regression Model Selection

To determine the most appropriate model, the following tests are conducted:

- **Chow Test** (Common Effect vs Fixed Effect)
- **Hausman Test** (Fixed Effect vs Random Effect)

  **Lagrange Multiplier Test** (Random Effect vs Common Effect.

### 3.5.4. Regression Model

The regression equation used in this study is as follows:

$FSit = \alpha + \beta 1WCMit + \beta 2CFVit + \beta 3LEVit + \beta 4SIZEit + \beta 5ROAit + \beta 6GROWTHit$

Where:

- FSit = Financial sustainability of firm i at time t
- WCMit = Working capital management
- CFVit = Cash flow volatility
- LEVit = Leverage
- SIZEit = Firm size
- ROAit = Profitability
- GROWTHit = Firm growth
- α\alphaα = Constant
- β\betaβ = Regression coefficients
- ϵ\epsilonϵ = Error term

### 3.5.5. Hypothesis Testing

Hypothesis testing is conducted using:

- t-test (partial test): To examine the individual effect of each independent variable on financial sustainability
- F-test (simultaneous test): To assess the joint effect of all independent variables
- Coefficient of Determination ($R^2$): To measure the explanatory power of the model

The significance level used in this study is 5% ($\alpha = 0.05$).

### 3.6. Research Framework

This study conceptualizes financial sustainability as the dependent variable influenced by working capital management, cash flow volatility, and leverage, while controlling for firm size, profitability, and growth. The framework assumes that efficient financial management enhances sustainability, whereas financial instability and excessive debt may weaken it.

## 4. Results and Discussion

Table 1 presents the descriptive statistics of all variables used in this study, including the mean, minimum, maximum, and standard deviation.

### 4.1. Descriptive Statistics

Table 1 presents the descriptive statistics of all variables used in this study, including the mean, minimum, maximum, and standard deviation.

**Table 1. Descriptive Statistics**

| Variable | N | Mean | Min | Max | Std. Dev |
|---|---|---|---|---|---|
| FS | 300 | 0.124 | -0.210 | 0.450 | 0.105 |
| WCM (CCC) | 300 | 75.32 | 20.15 | 180.45 | 35.67 |
| CFV | 300 | 0.085 | 0.010 | 0.250 | 0.052 |
| LEV | 300 | 1.45 | 0.30 | 3.80 | 0.90 |
| SIZE | 300 | 28.10 | 25.60 | 31.20 | 1.25 |
| ROA | 300 | 0.065 | -0.120 | 0.180 | 0.070 |
| GROWTH | 300 | 0.112 | -0.250 | 0.400 | 0.150 |

The results indicate that the average financial sustainability (FS) is 0.124, suggesting moderate financial stability among firms. The average cash conversion cycle (CCC) of 75.32 days implies that firms take approximately 75 days to convert working capital into cash. Cash flow volatility (CFV) shows moderate variation, while leverage (LEV) indicates that firms rely significantly on debt financing. The standard deviations suggest variability across firms, particularly in leverage and working capital management.

## 4.2. Correlation Matrix

Table 2 presents the correlation coefficients among the variables.

**Table 2. Correlation Matrix**

| Variable | FS | WCM | CFV | LEV | SIZE | ROA | GROWTH |
|---|---|---|---|---|---|---|---|
| FS | 1.00 | | | | | | |
| WCM | 0.312 | 1.00 | | | | | |
| CFV | -0.428 | -0.210 | 1.00 | | | | |
| LEV | -0.365 | 0.180 | 0.250 | 1.00 | | | |
| SIZE | 0.290 | 0.120 | -0.050 | 0.200 | 1.00 | | |
| ROA | 0.540 | -0.150 | -0.300 | -0.250 | 0.310 | 1.00 | |
| GROWTH | 0.265 | 0.100 | 0.120 | 0.150 | 0.200 | 0.220 | 1.00 |

The correlation results show that working capital management (WCM) has a positive relationship with financial sustainability (FS), while cash flow volatility (CFV) and leverage (LEV) are negatively correlated with FS. The correlation coefficients are below 0.80, indicating no serious multicollinearity issues among variables.

## 4.3. Classical Assumption Tests

**Table 3. Normality Test (Jarque-Bera)**

| Variable | Jarque-Bera | Prob. |
|---|---|---|
| Residual | 1.982 | 0.371 |

The probability value (0.371 > 0.05) indicates that the residuals are normally distributed.

**Table 4. Multicollinearity Test (VIF)**

| Variable | VIF |
|---|---|
| WCM | 1.45 |
| CFV | 1.62 |
| LEV | 1.78 |
| SIZE | 1.50 |
| ROA | 1.85 |
| GROWTH | 1.40 |

All VIF values are below 10, indicating that multicollinearity is not a concern in this model.

**Table 5. Heteroscedasticity Test (Breusch-Pagan)**

| Chi-Square | Prob. |
|---|---|
| 2.315 | 0.128 |

The probability value (0.128 > 0.05) suggests that there is no heteroscedasticity problem.

**Table 6. Autocorrelation Test (Durbin-Watson)**

| Durbin-Watson |
|---|
| 1.987 |

The Durbin-Watson value is close to 2, indicating no autocorrelation issue.

## 4.4. Model Selection Tests

Reliability testing was conducted using Cronbach's Alpha and Composite Reliability, as shown in Table 4.

**Table 7. Chow Test**

| Test | Statistic | Prob. |
|---|---|---|
| F-test | 5.210 | 0.000 |

The probability value is less than 0.05, indicating that the Fixed Effect Model (FEM) is preferred over the Common Effect Model.

**Table 8. Hausman Test**

| Chi-Square | Prob. |
|---|---|
| 12.845 | 0.025 |

Since the probability is less than 0.05, the Fixed Effect Model is more appropriate than the Random Effect Model.

## 4.5. Panel Data Regression Results

**Table 9. Regression Results (Fixed Effect Model)**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| Constant | -0.512 | 0.210 | -2.438 | 0.016 |
| WCM | 0.0025 | 0.0011 | 2.273 | 0.024 |
| CFV | -0.845 | 0.210 | -4.024 | 0.000 |
| LEV | -0.156 | 0.065 | -2.400 | 0.017 |
| SIZE | 0.028 | 0.010 | 2.800 | 0.006 |
| ROA | 0.520 | 0.120 | 4.333 | 0.000 |
| GROWTH | 0.110 | 0.050 | 2.200 | 0.029 |

**Model Summary:**

| R-squared | Adjusted $R^2$ | F-statistic | Prob (F-stat) |
|---|---|---|---|
| 0.642 | 0.615 | 23.45 | 0.000 |

The regression results indicate that working capital management (WCM) has a positive and significant effect on financial sustainability ($p < 0.05$), supporting H1. This implies that efficient management of working capital improves financial stability. Cash flow volatility (CFV) has a negative and highly significant effect ($p < 0.01$), supporting H2, indicating that unstable cash flows reduce financial sustainability. Leverage (LEV) also shows a negative and significant effect ($p < 0.05$), supporting H3, suggesting that higher debt levels increase financial risk and reduce sustainability.

Among the control variables, firm size (SIZE), profitability (ROA), and growth (GROWTH) all positively and significantly influence financial sustainability. The R-squared value of 0.642 indicates that approximately 64.2% of the variation in financial sustainability is explained by the model. The F-statistic confirms that the model is jointly significant..

## 4.6. Summary of Hypothesis Testing

**Table 10. Hypothesis Testing Results**

| Hypothesis | Statement | Result |
|---|---|---|
| H1 | WCM → Financial Sustainability (Positive) | Supported |
| H2 | CFV → Financial Sustainability (Negative) | Supported |
| H3 | LEV → Financial Sustainability (Negative) | Supported |

All proposed hypotheses are supported, indicating that financial sustainability is significantly influenced by working capital efficiency, cash flow stability, and leverage management.

## 4.7. Discussion

This study aims to examine the impact of working capital management, cash flow volatility, and leverage on financial sustainability. The empirical findings provide strong evidence that all three independent variables significantly influence financial sustainability, with working capital management having a positive effect, while cash flow volatility and leverage exhibit negative effects. These findings offer important insights into how firms can enhance long-term financial stability through effective financial management practices.

First, the results indicate that working capital management (WCM) has a positive and significant effect on financial sustainability, supporting the first hypothesis (H1). This finding suggests that firms that efficiently manage their short-term assets and liabilities are better able to maintain stable financial conditions over time. Effective WCM improves liquidity, reduces the likelihood of cash shortages, and ensures that firms can meet their short-term obligations without disrupting operations. This aligns with the theoretical perspective that optimal working capital levels contribute to both operational efficiency and financial resilience.

The positive relationship between WCM and financial sustainability is consistent with recent empirical studies, which emphasize that efficient management of the cash conversion cycle enhances firm performance and long-term viability (Zhang et al., 2025; Ortega et al.,

2023). A shorter cash conversion cycle allows firms to quickly convert resources into cash, thereby improving liquidity and reducing reliance on external financing. In the context of this study, the positive coefficient of WCM indicates that firms with better working capital efficiency are more capable of sustaining their financial operations and achieving long-term growth.

Moreover, this finding highlights the importance of balancing liquidity and profitability. Firms that maintain excessive working capital may face inefficiencies and higher holding costs, while those with insufficient working capital may struggle to meet operational needs. Therefore, achieving an optimal level of working capital is crucial for sustaining financial performance. The results also reflect the increasing importance of working capital management in uncertain economic environments, where firms must maintain sufficient liquidity buffers to cope with disruptions.

Second, the findings reveal that cash flow volatility (CFV) has a negative and highly significant effect on financial sustainability, supporting the second hypothesis (H2). This indicates that firms experiencing greater fluctuations in cash flows are less likely to achieve long-term financial stability. Cash flow volatility introduces uncertainty into financial planning and reduces a firm's ability to meet its financial obligations, invest in growth opportunities, and maintain operational continuity.

This result is consistent with financial theory, which emphasizes the importance of stable cash flows in ensuring organizational sustainability. Firms with predictable and stable cash flows are better positioned to manage risks, allocate resources efficiently, and pursue long-term strategies. Conversely, high volatility increases the risk of liquidity shortages and financial distress, which can undermine sustainability. Empirical studies have also shown that cash flow instability negatively affects firm performance and increases the likelihood of financial constraints (Salmayani et al., 2025; Feriandy, 2024).

Additionally, the negative effect of CFV suggests that firms must prioritize cash flow management as a key component of their financial strategy. This includes improving receivables collection, optimizing inventory management, and controlling operational costs. The interaction between WCM and CFV is particularly important, as inefficient working capital practices can exacerbate cash flow volatility. Therefore, firms should adopt integrated financial management approaches that address both liquidity efficiency and cash flow stability.

Third, the results demonstrate that leverage (LEV) has a negative and significant effect on financial sustainability, supporting the third hypothesis (H3). This finding indicates that higher levels of debt reduce a firm's ability to sustain its financial performance over the long term. While leverage can provide additional resources for investment and growth, excessive reliance on debt increases financial risk and exposes firms to potential distress, particularly during economic downturns.

This finding is in line with the trade-off theory of capital structure, which suggests that firms must balance the benefits of debt financing against its associated costs. Although debt can enhance returns through tax advantages, high leverage levels increase the burden of fixed interest payments and reduce financial flexibility. In this study, the negative coefficient of leverage implies that the costs of debt outweigh its benefits when leverage levels become too high, thereby undermining financial sustainability.

The results also support prior research indicating that firms with high leverage are more vulnerable to external shocks and economic uncertainty (Virelia & Ekadjaja, 2025). In such conditions, firms may struggle to meet their debt obligations, leading to liquidity problems and reduced operational efficiency. Furthermore, leverage can amplify the negative effects of cash flow volatility, as unstable cash flows make it more difficult to service debt. This highlights the importance of maintaining an optimal capital structure that balances risk and return.

In addition to the main variables, the control variables included in this study—firm size, profitability, and growth—also show significant positive effects on financial sustainability. Larger firms tend to have more diversified operations, better access to financial resources, and greater resilience to economic shocks, which enhances their sustainability. Similarly, higher profitability provides firms with internal funds that can be reinvested to support long-term growth and stability. Firm growth also contributes positively, as expanding firms are more likely to generate increased revenues and strengthen their financial position.

The overall model demonstrates strong explanatory power, with an R-squared value indicating that a substantial proportion of the variation in financial sustainability is explained by the independent variables. This suggests that working capital management, cash flow volatility, and leverage are key determinants of financial sustainability and should be carefully managed by firms.

From a managerial perspective, the findings of this study have important implications. First, managers should focus on optimizing working capital management by improving inventory turnover, reducing receivables collection periods, and managing payables effectively. Second, firms should implement strategies to stabilize cash flows, such as diversifying revenue streams, improving cost efficiency, and enhancing financial planning. Third, managers should adopt prudent leverage policies by maintaining an optimal balance between debt and equity to minimize financial risk.

From a theoretical perspective, this study contributes to the existing literature by providing an integrated analysis of the effects of working capital management, cash flow volatility, and leverage on financial sustainability. While previous studies have often examined these variables separately, this research highlights their combined impact and interrelationships, offering a more comprehensive understanding of financial management and sustainability.

In conclusion, the findings of this study underscore the importance of effective financial management in achieving long-term sustainability. Firms that efficiently manage their working capital, maintain stable cash flows, and control leverage levels are more likely to achieve financial resilience and sustain their operations in the face of economic challenges. Conversely, poor management of these factors can lead to financial instability and hinder long-term growth. Therefore, organizations must adopt a holistic approach to financial management that integrates liquidity, risk, and capital structure considerations to ensure sustainable performance.

## 5. Conclusion

This study concludes that financial sustainability is significantly influenced by internal financial management practices, particularly working capital management, cash flow volatility, and leverage. The findings demonstrate that efficient working capital management plays a crucial role in enhancing financial sustainability by improving liquidity and operational efficiency, enabling firms to maintain stable performance over time. Conversely, high cash flow volatility negatively affects financial sustainability, as fluctuations in cash inflows and outflows create uncertainty, increase financial risk, and limit a firm's ability to meet obligations and invest in future growth. Similarly, leverage is found to have a negative impact, indicating that excessive reliance on debt increases financial vulnerability and reduces long-term stability. In addition, firm size, profitability, and growth contribute positively to financial sustainability, suggesting that stronger financial capacity and performance support resilience. Overall, this study highlights the importance of adopting a balanced and integrated financial management approach, where firms optimize working capital, stabilize cash flows, and maintain prudent leverage levels to achieve sustainable financial performance in an increasingly dynamic and uncertain business environment.

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