



Impact of Working Capital Management on Sustainable Growth of Indian Firms with Mediating Effect of Profitability

¹Diksha Sharma, ²Vaibhav Tripathi

¹Research Scholar, University Business School, Panjab University, Chandigarh

²Student, University Business School, Panjab University, Chandigarh

Corresponding Author: Diksha Sharma

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ABSTRACT: Working capital management is a crucial area for any organisation since it has an impact on the capacity of the company to maintain liquidity, manage its operations, and grow sustainably. It is becoming more common to do research on the connections between working capital management, company profitability, and sustainable growth, especially in emerging countries like India where the government actively promotes the use of sustainable business practices. The purpose of this study is to investigate the impact of working capital management on sustainable growth using a sample of 367 companies listed on the National Stock Exchange (NSE) of India in 2023. Linear regression and process macros have been used to examine the direct and indirect impact of working capital. The findings revealed that the direct effect of working capital management on sustainable development was not significant. Moreover, working capital management has a negligible direct impact on long-term growth and a negligible indirect impact on company profitability. These findings suggest that enhancing working capital management could not immediately result in higher profitability or sustainable growth. The study's findings have significant ramifications for regulators and policymakers who are striving for immediate growth of the business. Even though working capital management may not directly influence sustainable growth, the study discovered that other elements, such as total asset turnover and sales growth, may. So, policies that motivate businesses to increase their total asset turnover and sales growth may unintentionally promote sustainable growth.

KEYWORDS: Working Capital Management, Sustainable Growth, Profitability, Mediation Analysis, Indian firms

I. INTRODUCTION

Effective working capital management has a crucial role in the overall performance of companies. Companies invest a significant portion of their assets in working capital as it is essential in the present business environment to ensure smooth economic activity of the business (Tahir and Anuar, 2016). Companies usually have two types of working capital policies - aggressive or conservative. An aggressive working capital policy involves investing little in working capital, which is a high-risk, high-return strategy. In contrast, a conservative working capital policy involves making large working capital investments, which is a low-risk, low-return strategy.

In the current competitive market, short-term assets and liabilities contribute significantly to overall assets and should be carefully considered with long-term assets and liabilities. Working capital management is scrutinised closely right away since it is essential for the company's profitability, risk, and value. Any business that wants to maximise profits and increase sales must manage costs and the production process. Various studies have reflected upon the importance of working capital for a business. Uchenna et.al. (2012) estimate that working capital accounts for 30% to 40% of the total firm investment. Harris (2005) concludes maintaining WC (working capital) at an ideal level is necessary to avoid any deficits and difficulties in overseeing smoothly running business operations. Maintaining liquidity and promoting firm profitability both depend on effective WC management. To maintain equilibrium between profitability and liquidity, effective WCM comprises planning and controlling current liabilities and assets.

A company should have an optimum level of liquidity since too much liquidity or a low



level of liquidity leads to financial difficulty. Studies on working capital management and firm profitability, such as those by Singhanian and Mehta (2017), Tahir and Anuar (2016), Baos-Caballero et al. (2012), and Deloof (2003), contend that by adopting an aggressive WCM policy, a firm may reduce its investments in inventories may result in lower storage and insurance costs and higher profits. Several studies have explored the relationship between working capital management and profitability, but there is a lack of concrete research on how working capital management affects the sustainable growth of Indian firms. The research project emphasizes the importance of investigating this relationship in the Indian context as it can help companies achieve better sustainable growth by effectively managing their working capital. The study contributes to the existing domain of knowledge by adding to the understanding of how working capital management affects sustainable growth in emerging economies like India.

The capacity of businesses to manage their working capital will boost growth and earnings. Higgins (1977) proposes the idea of a sustainable growth rate in connection to business growth, which denotes a company's potential for expansion in terms of sales without having to alter its financing choices. The phrase "sustainable growth rate" refers to a company's potential pace of expansion without relying on outside funding (such as new investors or long-term liabilities). It is advised that businesses base their daily operations on sustainable growth, according to Ashta (2008) and Fonseka (2012). Due to excessive financial leverage, businesses that expand above their sustainable growth rate may be vulnerable to financial difficulty or even insolvency. The risk of slow growth or even stagnant growth exists for businesses that fail to achieve sustainable growth.

Sustainable growth and working capital management are closely connected (Churchill and Mullins, 2001; Rădășanu, 2015). For instance, businesses that effectively manage their sales policies can generate enough cash flows for their operational needs and eventually boost their profits. Additionally, profitability is crucial for long-term growth (Shapiro and Balbierer 2000). Studies showing the impact of profitability on businesses' sustainable growth, like Amouzesh (2011), Mukherjee and Sen (2018), and Manaf (2018), provide evidence in favour of this claim. Therefore, it is logical to conclude that working capital management influences sustainable growth

via firm profitability. So, one intriguing study direction is the function of company profitability as a mediating variable between working capital management and sustainable development. Expanding the working capital research paradigm, which mainly emphasises profitability, adds to the body of literature. Although profitability influences sustainable growth, the majority of earlier research (Deloof, 2003; Hien Tran, 2017; Raheman, 2010) exclusively considers the effect of working capital on profitability (Amouzesh, 2011; Hien Tran, 2017, Manaf, 2018; Shapiro and Balbierer 2000). Additionally, working capital management and sustainable growth are intimately associated (Churchill and Mullins, 2001; Rădășanu, 2015). Another anticipated managerial conclusion of this study is that managers should plan more detailed working capital management to increase their profitability and achieve sustainable growth.

II. REVIEW OF LITERATURE & HYPOTHESIS DEVELOPMENT

Prior research has mostly examined how WCM affects a firm's success, including the ideal inventory level, cash conversion cycle, and accounts payable and receivable (Deloof, 2003; Gill et al. 2010). Some of them discovered dependable findings, while others established mixed results. 88 US enterprises that were registered on NYS between 2005 and 2007 were examined by Gill et al. (2010) for their relationship between WCM and firm success. Gross operating income and cash conversion cycle were used as the respective metrics for determining WCM and firm-level profitability. The findings showed that a company's management can make money for the company by effectively managing the cash conversion cycle. Kaur Jasmine (2010) reported a direct correlation between effective working capital management and the profitability of the tyre industry in the Indian economy.

Marttonen et. al. (2013) examined the effect of WCM on profitability within the industrial maintenance/service sector, using the faM (flexible assets management) model. Results showed that the WC cycle time and return on investment (ROI) were significantly inversely related.

Enqvist et. al. (2014), based on the financial crisis in 2007–2008, investigated how the corporate cycle affected the link between WCM and firm profitability among listed Finnish companies. Results showed that, in contrast to



periods of economic expansion, economic downturns have a statistically significant effect on the relationship.

Ukaegbu (2014) hypothesised a relationship between the efficiency of working capital and corporate performance across various industrial sectors in different nations including Egypt, Nigeria, South Africa, and Kenya. Using a panel data analysis researcher reported a negative correlation between WCM and business performance from 2005-2009.

Tran et. al. (2017) calculated the effects of managing working capital to promote the firm value of Vietnamese SMEs. Their findings revealed that effective WCM will considerably increase firm profitability by lowering days of inventory turnover, accounts receivable, and accounts payable.

Hien Tran (2017) demonstrates that working capital management significantly influences profitability using 200 Vietnamese manufacturing companies listed on the Hanoi Stock Exchange (HSE) from 2010 to 2012.

Quang (2017) investigated the opposing effects of the current ratio, debt-to-equity ratio, and inventory turnover ratio. Researchers argue that to improve the effectiveness of working capital management and increase business efficiency, airlines need to rationalise the supplies of aircraft spare parts inventory. This will increase their ability to recover money from debtors and strengthen their relationships with suppliers.

Valipour (2012) analysed 83 companies registered on the Tehran Stock Exchange from 2001 to 2010 for their profitability, operational cash flow, business size, sales growth, current ratio, quick ratio, and debt ratio. The study finds that a firm's working capital management is impacted by profitability, operational cash flow, company size, sales growth, and debt ratio.

Vural (2012) investigates the connection between working capital management elements and company performance. The findings show that companies may boost their gross profit margins by shortening the cash conversion cycle and debtors' average collection times. It was also shown that leverage, a control variable, has a substantial negative impact on firm value.

Working capital management has been intimately linked to sustainable growth. **Barine (2012)** asserted that effective working capital management assists businesses in maintaining their liquidity so they have enough cash flow to pay off their maturing short-term commitments and minimise their cost of capital. Furthermore,

liquidity has an impact on sustainable growth, as posited by **Amouzes (2011)** and **Fonseka (2012)**. Effective working capital also enables businesses to secure enough operating funding sources and lower the danger of running out of stock. Thus, firms will manage to achieve sustainable growth.

Palombini and Nakamura (2012) support the pecking order hypothesis and suggest that internal financing sources are more conducive to sustainable growth than external financing sources. The study also highlights the potential negative consequences of issuing new shares, which may be perceived as a sign of financial distress by investors and other stakeholders.

Manaf et al. (2018) demonstrate a high association between long-term growth and profitability. Overall, these studies show that longer-term growth will be boosted by higher profitability. Sustainable profitable growth may be impacted by working capital management.

Churchill and Mullins (2001) assert that if businesses can shorten their operating cycles, reduce the amount of cash they require throughout those cycles, and generate more cash during those cycles, they may increase their profitability and finally achieve sustainable growth.

Nastiti et al. (2019) using the panel data regression on 136 manufacturing firms listed in the Indonesian Stock Exchange from 2010 to 2017 reported that the cash conversion cycle has a significant impact on profitability and has a non-significant impact on sustainable growth but it turns out to be significant when profitability is used as mediating variable.

The thorough review of the literature resulted in the following hypotheses –

H₁: Working capital management does not have any significant impact on firms' sustainable growth.

H₂: Profitability has no mediating impact on the relationship between working capital management and sustainable growth.

III. RESEARCH METHODOLOGY

The research is causal research that aims to determine whether there is a cause-and-effect relationship between working capital and sustainable growth with a mediating impact on profitability. The two-fold objectives of the study are;

- i. To examine the impact of the firm's working capital management on sustainable growth.
- ii. To examine the impact of the firm's working



capital management on sustainable growth with profitability as a mediating variable.

The research focuses on the top 500 companies that are listed on the National Stock Exchange (NSE) as of March 31, 2023, and the selected year for the observation period is 2022-2023. Financial companies and public sector companies were excluded from the sample and the final list included a total of 367 firms listed on the National Stock Exchange (NSE) of India in 2023. The data for the study was collected from relevant published financial statements of the sample companies as well as the PROWESS database.

Description of variables: **Higgins (1977)** formulated the sustainable growth rate (SGR) as a measure of a company's growth potential. The SGR is a dependent variable that represents the rate at which a company can grow while maintaining a constant debt-equity ratio and without requiring external financing. The SGR is calculated as the product of the return on equity (ROE) and the retention rate.

Hien Tran (2017) metric accurately depicts how businesses handle their working capital. As evidenced experimentally by the cash cycle (CCC), the independent variable is working capital management, which theoretically indicates the time businesses take to transform their cash outflows to cash inflows. It has been calculated by using the methodology suggested by Keown et al. (2003, p. 109);

$$CCC = \frac{\text{Days Sales Outstanding} + \text{Days Sales Inventory} - \text{Days Payable Outstanding}}{\text{Days Sales Outstanding}}$$

In the above equation all the variables are defined below:

$$\text{Days of Sales Outstanding} = \frac{\text{Account Receivables}}{\text{Sales}} \times 365$$

$$\text{Days of Sales in Inventory} = \frac{\text{Inventories}}{\text{Cost of goods sold}} \times 365$$

$$\text{Days of Payables Outstanding} = \frac{\text{Accounts payables}}{\text{Cost of goods sold}} \times 365$$

Return of Equity has been calculated as profit after tax divided by total equity. Log of total assets has been taken as a measure of firm size. Sie Ting Lau et. al. (2002) et. al. evidenced that the weighted average of the past three years' sales growth is used to determine sales growth, with the most recent year receiving a weight of 3, the second-to-last year receiving a weight of 2, and the third year receiving a weight of 1.

$$\text{Sales Growth} = 2023-22 \text{ SG} * 3 + 2022-21 \text{ SG} * 2 + 2021-20 \text{ SG} * 1$$

Leverage is taken as the ratio of long-term debt to the total book value of equity (Jelinek, 2007; Wasimullah, et al. 2010). Total Asset Turnover has been taken as sales divided by the total assets as calculated by Hanafi (2016) and Kasmir (2015).

Thereby the empirical model used in the study is presented below;

$$SGR = \alpha + \beta_1 CCC + \beta_2 SALESGR + \beta_3 FIRMSIZE + \beta_4 LEV + \beta_5 ATO + \epsilon$$

Where;

SGR – Sustainable Growth Rate

CCC – Cash Conversion Cycle

SALESGR – Sales Growth

FRSIZE – Firm Size

LEV – Leverage

ATO – Total Assets Turnover

IV. ANALYSIS AND FINDINGS

Descriptive statistics have been used to summarize and describe the characteristics of the dataset using various measures such as mean, standard deviation, minimum, and maximum values as shown in Table 1.

	N	Min	Max	Mean	Std.Dev.
SGR	367	-651.3	102.25	8.667	36.376
ROA	367	-85.43	53.60	8.69	10.25
CCC	367	-68982.83	6860.02	-119.839	36.376
Firm Size	367	7.99	15.98	10.92	1.228
Leverage	367	-545.16	928.85	29.62	87.80
Asset turnover	367	0.37	406.95	84.04	56.54

Table 1: Descriptive statistics

The R-square value as shown in Table 2 is .092 which shows that the Sustainable Growth Ratio is 9.2% is explained by Leverage, Sales Growth, Total asset turnover, Firm size and cash conversion cycle. Further, the F-statistics is also significant at 0.01% level proving that the model is a good fit for analysis.



R	R Square	Adjusted R Square	Std. Error of the Estimate	F-Statistic
.303	0.092	0.079	34.906	7.295 ***

Table 2: Model summary and F-statistics (* sig at 1% level)**

The regression results presented in Table 3 revealed that firm size, total asset turnover and leverage have a significant impact on the sustainable growth of the firm. Firm size and total asset turnover have a positive impact, whereas leverage has a significant negative impact on the sustainable growth of the firm. Working capital management was reported to have a non-significant impact on the sustainable growth of Indian firms which was similar to the study by Nastiti et.al (2019).

	Unstandardized Coefficients		Standardized Coefficients	t-statistics	Sig.
	B	Std. Error	Beta		
(Constant)	61.059	21.554		-2.833	.005***
CCC	-4.995	.000	-.005	-.100	.920
FirmSize	6.213	1.918	.210	3.239	.001***
SALESGR	-2.319	.000	-.096	-1.529	.127
TATO	.072	.034	.111	2.110	.036**
LEV	-.100	.021	-.241	-4.781	.000***

Table 3: Regression results (sig at 5 %, *** sig at 1 % level)**

Furthermore, using the process macros the mediating effect of ROA on the relationship between working capital and sustainable growth is examined. Table 4 presents the direct effect of ROA and CCC on sustainable growth. The results revealed that the mediating variable profitability has a significant positive impact on sustainable growth at a 1% level of significance. Further, the working capital component also had a significant positive impact on the sustainable growth of Indian firms at a 10% level of significance.

DEP: SGR	Coeff	SE	t-statistics	p-value	R-SQUARE
constant	-5.1332	3.0754	-1.6691	.0960	
ROA	1.7938	.1659	10.8124	.0000***	
constant	3.9335	3.3963	1.1582	.2475	R-SQUARE
CCC	.0563	.0335	1.6792	.0940*	

Table 4: Direct effect (*, * represents sig at 1% and 10% levels)**

The mediating results are presented in Table 5 below. The results revealed that although there is a non-significant direct effect of working capital on sustainable growth, the working capital efficiency impacts the profitability of the companies which ultimately creates a significant positive impact on sustainable growth of firms. Thereby, ROA the measure of profitability was found to mediate the relationship between working capital and sustainable growth.

Total effect of X on Y				
	Effect	SE	t-statistics	p-value
	.0563	.0335	1.6792	.0940
Direct effect of X on Y				
	Effect	SE	t-statistics	p-value
	-.0214	.0301	-.7121	.4769
Indirect effect(s) of X on Y:				
	Effect	BootSE	BootLLCI	BootULCI
ROA	.0777	.0608	.0124	.1978

Table 5: Mediation analysis



V. CONCLUSION

The link between working capital management, profitability, and sustainable growth has been examined in this study. The findings revealed that although there is no direct effect of working capital management on the sustainable growth prospects of the sample companies, there is a mediating impact of firm profitability on this relationship. Theoretically, the study expands the body of work on working capital management. The study has implications for future researchers and managers also. It suggests that firms should concentrate on working capital management, profitability and sustainable growth for the overall development of the firm. Increasing profitability makes it easier for businesses to raise more money in the internal market, which finally supports more sustainable growth. Under this scenario, businesses might expand without having to rely heavily on external financial sources. As a result, working capital management requires substantial attention from businesses. The research focuses solely on the relationship between three components: working capital management, profitability, and sustainability growth. However, there could be additional variables that could provide a more comprehensive overview of the management of the firm. Future research should consider these additional variables to provide a better understanding of the topic. To gain a better understanding of working capital management in businesses, future research should focus on cross-country analysis of enterprises within the same industry. Further analysing the practices of companies across other industries and segments can provide a better understanding of the changes and trends in working capital management practices of companies.

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