# The Impact of Working Capital Management on Profitability:

Evidence from Non-Financial Firms Listed in NEPSE

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# Abstract:

Efficient working capital management (WCM) is expected to contribute positively to the firm's profitability. With the aim of analyzing the impact of WCM on the profitability of non-financial firms listed in NEPSE, this paper has used current ratio (CR), debt ratio (TDTA), current assets to total assets (CATA), current liabilities to total assets ratio (CLCA) and inventory conversion period (ICP), receivable conversion period (RCP), payable deferral period (PDP), and cash conversion cycle (CCC) as the measures of WCM. This paper has used annual panel data of 12 non-financial NEPSE-listed firms from 2005/06 to 2019/20. Based on the result of the Breusch and Pagan Lagrangian multiplier and Hausman tests, the study found the Random Effect model as the appropriate regression model. Using the Random Effect regression model, this paper has found the significant impact of WCM on profitability. Likewise, this paper found a significant negative impact of the current ratio (CR) and debt ratio (TDTA) and a significant positive impact of the ratio of current assets to total assets (CATA) on profitability. Further, the finding also reveals that there is an insignificant negative impact of the inventory conversion period (ICP) and receivable conversion period (RCP) and an insignificant positive impact of the payables deferral period (PDP). Thus, this paper concludes that Nepalese non-financial firm can increase their profitability by decreasing the current ratio (CR) and debt ratio (TDTA) and increasing the ratio of current assets to total assets (CATA).

Keywords: working capital management, profitability, current ratio, debt ratio.

# **Introduction:**

Working capital management (WCM) is a crucial facet of any firm. Generally, working capital refers to the capital needed to finance current assets (Deloof, 2003). Current assets are the firm's essential elements to fulfill the daily requirements. Thus, the WCM refers to managing the firm's current assets required for the business organization's smooth operation. A firm should maintain the optimum level of current assets because inadequate investment in current assets makes it difficult to carry out the regular course of the business smoothly (Bhattacharya, 2021). The efficient management of working capital is an essential aspect of the growth and sustainability of small firms (Grablowsky, 1984). On the other hand, many business failures have been found as the result of improper planning and control of current assets and liabilities of the financial manager (Smith, 1980). Filbeck and Krueger (2005) also stated that a firm's success mainly depends on efficiently managing receivables, inventories, and liabilities. Thus, a firm can create value by reducing the number of days in accounts receivable and inventories and shortening the cash conversion cycle (Teruel & Solano, 2007).

Therefore, the cash conversion cycle should be handled correctly, and accounts receivable, inventory, and accounts payable should be kept at an optimum level to create the firm's profitability (Lazaridis & Tryfonidis, 2006). Ganesan (2007) also documented an inverse association of working capital days with corporate profitability. It is also apparent that high investment in inventories and receivables is associated with lower profitability (Padachi, 2006). Similarly, a firm should reduce the length of the cash conversion cycle and debt ratio to increase profitability (Pouraghajan & Emangholipourarchi, 2012; Hoang, 2015; Aldubhani et al., 2022) because larger the cash conversion cycle higher would be the financing in working capital (Deloof, 2003). The firm can increase its profitability by decreasing the collection period, payment period, and net trade cycle (Vahid et al., 2012; Bhatia & Srivastava, 2016; Yakubu, Alhassan & Fuseini, 2017). Therefore, efficient working capital management can improve a firm's performance (Kusuma & Dhiyaullatief Bachtiar, 2018).

Intending to analyze the impact of WCM on the performance of a small manufacturing firm in Mauritius, Padachi (2006) used return on assets as the measures of profitability and inventory days, accounts receivable days, accounts payable days, and accounts payable days, and cash conversion cycle as the key measures of WCM. Further, the study used firm size measured by the natural logarithm of sales, gearing ratio measured by the ratio of debt to total assets, gross working capital turnover ratio measured by the ratio of sales to current assets, and financing policy measured by the ratio of current liabilities to total assets as the control variables. It was based on the panel data of 58 small manufacturing firms from 1998 to 2003. Using the regression analysis, the study established a strong relationship between WCM and profitability. Padachi (2006) concluded that the higher the amount of investment in inventories and receivables lower would be the profitability.

On the other hand, Abuzayed (2012) documented that the profitability of Jordanian firms is positively affected by the cash conversion cycle. The study was based on the annual data of 53 non-financial firms listed on the Amman Stock Exchange from 2000 to 2008. The OLS, Fixed Effect, and Random Effect regression model showed the positive influence of cash conversion cycle, days in receivable, days in inventory, and the positive influence of days in payable on profitability measured by gross operating profit and Tobin's Q ratio in all models. Thus, the author concluded that more profitable firms pay less attention to managing working capital.

In another paper, Pouraghajan and Emamgholipourarchi (2012) analyzed the impact of WCM on the profitability of the firm listed on the Tehran Stock Exchange from 2006 to 2010. It has used return on assets and return on invested capital to measure the profitability and Tobin's Q ratio to measure the market value of the companies. On the other hand, the cash conversion cycle, current ratio, current assets to total assets, current liabilities to total assets, and debt ratio were used to measure the WCM. Using the regression analysis, the authors found a significant relationship between WCM and profitability. The study further concluded that firms should reduce the cash conversion cycle and debt ratio length to increase profitability.

To scrutinize the impact of WCM on the performance of firms listed in Tehran Stock Exchange, Vahid et al. (2012) used the data of 54 companies from 2006 to 2009. The study used various measures of working capital, such as days of inventory turnover, average collection period, cash conversion cycle, and net trade cycle. Using the multiple regression analysis, a significant negative relationship between all components of WCM except the cash conversion cycle and firm performance has been detected. Similarly, the linkage between WCM and corporate profitability of UK non-financial companies was investigated by Baños-Caballero et al. (2014). Using the unbalance panel data of 258 non-financial firms between 2001 and 2007 in the United Kingdom, the authors found a U-shaped relationship between working capital investment and corporate profitability. Thus, the study concluded that the firm should maintain the optimum level of investment in working capital.

Using the panel data of 98 manufacturing companies listed on the stock market of Ho Chi Minh City, Hoang (2015) scrutinized the relationship between WCM and profitability. The study covered the period from 2009 to 2014. Hoang (2015) found a significant negative relationship between the average collection period, inventory conversion period, average payment period, net trade cycle, and cash conversion period with the firm's profitability. The study also found a significant impact of control variables such as leverage, liquidity, firm growth, and firm size on profitability. Thus, the study concluded that the firm should shorten its cash conversion and net trade cycles to increase profitability. In another study, Bhatia and Srivastava (2016) found a negative relationship between WCM with the financial performance of Indian firms. The authors used the data of 179 non-financial firms listed on the Bombay Stock Exchange from 2002 to 2014. Based on the result of OLS, fixed-effect, and random-effect regression model, the author found a significant negative impact of the cash conversion cycle, accounts receivable days, and inventory days and a significant positive impact of accounts payable days measured by gross operating profit and Tobin's Q ratio in all models. Similarly, Eya (2016) found a significant favorable influence of the current ratio and quick ratio and a significant negative influence of cash ratio on the profitability of Food and Beverage industries operating in Nigeria from 2003 to 2013.

Hingurala et al. (2017) also scrutinized the effect of WCM on the value of Sri Lankan firms. The study measured the efficiency of working capital by the cash conversion cycle and its components and firm value by Tobin's Q ratio. Using the pooled OLS and fixed effect regression, Hingurala et al. (2017) found the inverse effect of the cash conversion cycle on the firm's value. The significant role of WCM in explaining the firm performance was also verified by Yakubu et al. (2017). The study used five non-financial firms listed on the Ghana Stock Exchange from 2010 to 2015. The result documented the positive impact of the current ratio and the negative impact of the average collection period, inventory turnover, cash conversion cycle, and firm size on profitability. The positive influence of WCM measured by CCC on corporate profitability was also verified by Moussa (2018). Based on the annual panel data of 68 Egyptian firms from 2000-2010, the author found a significant positive coefficient of CCC in all regression models. Thus, the author concluded that the firms with high performance pay less attention to WCM.

Likewise, Vijayakumaran (2019) used the net trade cycle to measure the efficiency of working capital and Tobin's Q ratio to measure the value of the firm of the Chinese stock market. The study found the adverse effect of the number of days in inventories and accounts receivable on the firm's value. In the context of Malaysia, Sim et al. (2019) found a significant negative influence of the working capital component, i.e., CCC, on corporate profitability measured by ROA. In contrast, the author found no influence of CCC on corporate profitability measured by Tobin's Q. Thus; the authors concluded that Malaysian firms should shorten CCC to increase their profitability. In the same way, using the annual panel data of 136 Indonesian manufacturing firms, Nastiti et al. (2019) found the significant influence of working capital on profitability. On the other hand, the author found no influence of working capital on sustainable growth.

On the other hand, the relationship between working capital and firm profitability of the firm listed on the Warsaw Stock Exchange, Poland, was evaluated by Anton and Afloarei Nucu (2021). They verified that working capital has a positive effect up to the break-even point, and after the break-even point, it negatively impacts profitability.

To sum up, it is evident from the above literature that WCM significantly influences the firm's value creation by maximizing profitability. Thus, there is a need to explore whether a similar influence of the WCM exists on the profitability of Nepalese non-financial firms.

## **Methodology:**

#### **Research Design:**

The impact of working capital management on the profitability of non-financial firms listed in the Nepal Stock Exchange (NEPSE) from 2005/06 to 2019/20 has been analyzed using the descriptive and causal-comparative research design. Twelve firms are selected as a sample based on the availability of the data. The annual report of the sample firms was used to obtain the required data for the study. Descriptive research design is used to evaluate the fact and behavior of the variables of the study, and causal-comparative research design is applied to analyze the impact of WCM on profitability using regression analysis.

#### Variables and Measures:

Similar to the previous literature (Vahid et al., 2012; Pouraghajan & Emamgholipourarchi, 2012; Hoang, 2015; Anton et al., 2021; Aldubhani et al., 2022), this paper has also used return on assets (ROA) as the measures of profitability. ROA is obtained by dividing operating income by total assets. Similarly, current ratio (CR), i.e., the ratio of current assets to current liabilities, and debt ratio, i.e., the ratio of total debt to total assets (TDTA) is used as the measures of working capital (Bhatia & Srivastava, 2016; Kusuma & Dhiyausllatief Bachtiar, 2018; Vijayakumaran, 2019; Nastiti et al., 2019). Likewise, the ratio of current assets to total assets (CATA) is used to measure working capital investment policy, and the ratio of current liabilities to current assets (CLCA) is used to measure working capital financing policy (Padachi, 2006; Pouraghajan & Emamgholipourarchi, 2012). Furthermore, the inventory conversion period (ICP), receivable conversion period (RCP), payable deferral period (PDP), and cash conversion cycle (CCC) is used to measure WCM (Vahid et al., 2012; Abuzayed, 2012; Hingurala et al., 2017; Vijayakumaran, 2019; Aldubhani et al., 2022). A detailed description of the variables is presented in Table 1.

#### Table1

#### Variables and measures

Sn	Variables	Acronyms	Measurement	Туре
1	Profitability	ROA	Operating income total assets	Dependent
2	Current ratio	CR	Current assets , current liabilities	Independent

3	Debt ratio	TDTA	Total debt
			Total assets
4	Working capital investing	CATA	Current assets
-			Total assets
5	Working capital financing	CLTA	Current liabilities
			Total assets
6	Inventory conversion period	ICP	Inventory x days in a year
			Cost of goods sold
-	<b>Receivable conversion</b>	DCD	Receivable x days in a year
7	period	RCP	Sales
0	Payable deferral period	PDP	Payable x days in a year
8			Cost of goods sold
9	Cash conversion cycle	CCC	ICP+RCP – PDP

### Nature and Sources of Data:

This study is solely based on a secondary source of data. The required data for the study is obtained from the sample firms' balance sheets and income statements. Further, the data related to the dependent and independent variables are generated using the equations presented in Table 1. This study used unbalanced panel data of 12 non- non-financial firms listed in the Nepal Stock Exchange (NEPSE) over the period of 2005/06 to 2019/20.

## **Model Specification:**

The following econometric model is estimated to analyze the impact of WCM on the profitability of non-financial firms listed in NEPSE.

 $ROA_{it} = \alpha_0 + \alpha_1 CR_{it} + \alpha_2 TDTA_{it} + \alpha_3 CATA_{it} + \alpha_4 CLTA_{it} + \alpha_5 ICP_{it} + \alpha_6 RCP_{it} + \alpha_7 PDP_{it} + \alpha_8 CCC_{it} + \varepsilon_{it}$ Where,

 $ROA_{it}$  = the return on assets of the bank i for year t,

 $\alpha_i$  = the coefficient of the variable to be estimated,

 $CR_{it}$  = the ratio of current assets to current liabilities of firm i for year t,

 $TDTA_{it}$  = the ratio of total debt to total assets of firm i for year t,

CATA<sub>it</sub> = the ratio of current assets to total assets of firm i for year t,

 $CLTA_{it}$  = the ratio of current liabilities to total assets of firm i for year t,

 $ICP_{it}$  = the inventory conversion period of firm i for year t,

 $RCP_{it}$  = the receivable conversion period of firm i for year t,

PDP<sub>it</sub>= the payable deferral period of firm i for year t,

 $CCC_{it}$  = the cash conversion cycle of firm i for year t, and

 $\varepsilon_{it}$  = the residual error term.

## **Model Selection:**

This paper aims to analyze the impact of WCM on profitability by using panel data of nonfinancial firms listed in NEPSE. Panel data regression analysis may be based on Pooled OLS, Random Effect, or Fixed Effect models. Among these three models of panel data regression, the best model should be applied to analyze the data based on the appropriate selection criterion. Therefore, this paper has used Breusch and Pagan Lagrangian multiplier test and the Hausman test to select the appropriate regression model. The results of these tests are presented in Table 2 and 3. The chibar<sup>2</sup> value 4.38 (p=0.0182<0.05) of the Breusch and Pagan Lagrangian multiplier test presented in Table 2 rejects the null hypothesis, i.e., the Pooled OLS model is appropriate. It indicates that the regression model should be estimated using Random Effect or Fixed Effect. Thus, the Hausman test is used to select the appropriate model between these two models. The chi<sup>2</sup> value 8.43 (p=0.3930>0.05) of the Hausman test presented in Table 3 failed to reject the null hypothesis, i.e., the Random Effect model is appropriate. Thus, this paper used the Random Effect model to analyze the impact of WCM on profitability.

#### Table 2

#### **Result of Breusch and Pagan Lagrangian Multiplier Test for Random Effects**

	Var	sd = sqrt(Var)
ROA	118.9236	10.9052
E	64.1831	8.1353
U	26.6533	5.1627
Test: $Var(u) = 0$	$chibar^{2}(01) = 4.38$	$Prob > chibar^2 = 0.0182$

#### Table 3

	(b)Fixed Effect	(B)Random Effect	(b-B) Difference	<pre>sqrt(diag(V_b-V_B))</pre>
CR	-0.8781	-0.6218	-0.2563	0.0864
TDTA	-24.3891	-15.4698	-8.9192	5.2477
CATA	34.0425	31.2515	2.7910	7.8801
CLTA	-28.0311	-14.3246	-13.7035	6.2224
ICP	-126.6467	-111.756	-14.8907	-
RCP	-126.5913	-111.7759	-14.8154	-
PDP	-126.5982	111.7597	14.8384	-
CCC	126.5926	111.7624	14.8302	-
$\chi^2(8) = 8.43$	3	<b>Prob</b> > $\chi^2 = 0.3930$	)	

#### **Result of Hausman Test**

## **Empirical Results:**

This section presents the result obtained from the analysis of data collected from the 12 nonfinancial forms listed in the Nepal Stock Exchange for the period of 2005/06 to 2019/20. The result of descriptive statistics is presented in the first part, and in the second part, the impact of working capital on firm performance is presented.

#### **Summary Statistics:**

The summary statistics, such as mean, standard deviation, and minimum and maximum values of the variables under the study, are presented in Table 4. As evident from the result presented in Table 4, the wide range of the profitability of the selected firm has been observed. It ranges from

a minimum value of -31.91 percent to a maximum value of 64.76 percent, with an average value of 12.7746 percent. Similarly, the selected firm has also been found widespread regarding their current ratio (CR). It ranges from a minimum value of 0.4110 to a maximum value of 33.6307, with an average value of 3.349. Likewise, the average value of the ratio of current assets to total assets (CATA) and current liability to total assets (CLTA) is 0.3293 and 0.3375, respectively.

The table exhibits the variable's mean, standard deviation, and minimum and maximum values from 2005/06 to 2019/20 for the 12 non-financial firms listed in NEPSE with 97 observations. ROA is the return on assets at the end of year t. CR is the current ratio end of year t, TDTA is the ratio of total debt to total assets end of year t, CATA is the ratio of current assets to total assets end of year t, CLTA is the ratio of current liabilities to total assets end of year t, ICP is the inventory conversion period end of year t, RCP is the receivable conversion period end of year t, PDP is the payable deferral period end of year t, and CCC is the cash conversion cycle end of year t.

		Std.			Ν
`	Mean	Deviation	Minimum	Maximum	
ROA	12.7746	10.9052	-31.9100	64.7600	97
CR	3.3490	4.6771	0.4110	33.6307	97
TDTA	0.3293	0.1906	0.0101	0.7679	97
CATA	0.3375	0.2217	0.0344	0.9401	97
CLTA	0.1870	0.1771	0.0138	0.7266	97
ICP	46.2958	37.1278	0	133.33	97
RCP	53.9683	36.0409	0.27	168.83	97
PDP	43.2341	40.4219	1.06	188.41	97
CCC	57.0291	42.2415	-98.45	157.77	97

Table 4 Summary statistics

Furthermore, the measures of WCM, i.e., inventory conversion period (IC), receivable conversion period (RCP), payable deferral period (PDP), and cash conversion cycle (CCC) shows the average value of 46.2958 days, 53.9683 days, 43.2341 days, and 57.0291 days respectively. It is also observed that the sample firms are widely spread in working capital management too. The result shows the ICP ranges from 0 days to 133.33 days, RCP ranges from 0.27 days to 168.83 days, PDP ranges from 1.06 days to 188.41 days, and CCC ranges from - 98.45 days to 157.77 days.

## **Impact of WCM on Profitability:**

The impact of working capital management on the profitability of NEPSE-listed non-financial firms has been evaluated through the Random Effect model. Table 5 presents the result of multivariate regression analysis using the Random Effect model. The result shows the negative coefficient for the current ratio (CR), debt ratio, i.e., the ratio of total debt to total assets (TDTA), working capital financing ratio, i.e., the ratio of current liabilities to total assets (CLTA) and inventory conversion period (ICP) and receivable conversion period (RCP), and a positive coefficient for working capital investing ratio, i.e., the ratio of current assets to total assets

# (CATA) and two measures of WCM, i.e., payable deferral period (PDP), and cash conversion cycle (CCC) on the profitability of Nepalese non-financial firm listed in NEPSE.

This table shows the regression results based on the Random Effect model of panel data of 12 non-financial firms listed in NEPSE with 97 observations from 2005/06 to 2019/20.

The basic model is:  $ROA_{it} = \alpha_0 + \alpha_1 CR_{it} + \alpha_2 TDTA_{it} + \alpha_3 CATA_{it} + \alpha_4 CLTA_{it} + \alpha_5 ICP_{it} + \alpha_6 RCP_{it} + \alpha_7 PDP_{it} + \alpha_8 CCC_{it} + \epsilon_{it}$ The dependent variable is the return on assets denoted as  $(ROA)_{it}$  and the independent variables are current ratio  $(CR)_{it}$ , debt ratio  $(TDTA)_{it}$ , the ratio of current assets to total assets  $(CATA)_{it}$ , the ratio of current liabilities to total assets  $(CLTA)_{it}$ , inventory conversion period  $(ICP)_{it}$ , receivable conversion period  $(RCP)_{it}$ , payable deferral period  $(PDP)_{it}$ , and cash conversion period  $(CCC)_{it}$ .

#### Table 5

#### Average Slope Coefficients and Corresponding t-Value from Random-effects regression

Variable	Coefficient	Std. Error	t-statistics	p-value
CR	-0.6218	0.2762	-2.25	0.024
TDTA	-15.4698	8.0854	-1.91	0.056
CATA	31.2515	8.1027	3.86	0.000
CLTA	-14.3246	11.2714	-1.27	0.204
ICP	-111.756	168.6945	-0.66	0.508
RCP	-111.7759	168.6983	-0.66	0.508
PDP	111.7597	168.7021	0.66	0.508
CCC	111.7624	168.6955	0.66	0.508
Cons.	12.7564	4.2815	2.95	0.003
R <sup>2</sup> : within = 0.2217 Wald $\chi^2(8) = 22.58$			$Prob > \chi^2 = 0.0039$	

It is evident from the result that there is a significant negative impact of CR and TDTA, and a significant positive impact of CATA on profitability. The beta coefficient of CR -0.6218 with a t-value of -2.28 (p=0.024<0.05) implies a significant negative impact of the current ratio on profitability. This finding corroborates the findings of Kusuma and Dhiyaullatief Bachtiar (2018) and contradicts the findings of Yakubu et al. (2017), Pouraghajan and Emangholipourarchi (2012), and Vijayakumaran (2019). It is concluded that the higher the current ratio lower would be the profitability. Thus, the firm should maintain a lower current ratio level as far as possible.

Likewise, the beta coefficient of TDTA -15.4698 with a t-value of -1.91(p=0.056<0.10) implies a significant negative impact of debt ratio on profitability. This finding corroborates the finding of Bhatia and Srivastava (2016), Hingurala et al. (2017), Nastiti et al. (2019), Vijayakumaran (2019), and Anton and Afloarei Nucu (2021). In contrast, it contradicts the findings of Baños-Caballero et al. (2014). This result implies that firms should decrease the amount of debt to increase their profitability.

On the other hand, the beta coefficient of CATA 31.2515 with a t-value of 3.86 (p=0.000<0.01) implies a significant positive impact of the ratio of current assets to total assets on profitability. This result is well-matched with the findings of Padachi (2006) and contradicts the findings of Eya (2016) and Sim and Ming (2019).

Furthermore, an insignificant negative beta coefficient of CLTA is observed. It implies that CATA does not influence the profitability of Nepalese non-financial firms. This finding is similar to Padachi (2006) and Pouraghajan & Emangholipourarchi (2012) finding.

Likewise, there are insignificant negative beta coefficients of ICP and RCP and insignificant positive beta coefficients of PDP and CCC. These findings are well-matched with the findings of Padachi (2006) and contradict the findings of Abuzayed (2012), Aldubhani et al. (2022), and Vijayakumaran (2019). The negative beta coefficient of ICP and RCP implies that increasing the length of ICP and RCP decreases the firm's profitability. Therefore, a firm should shorten the ICP and RCP to increase profitability. On the other hand, the positive beta coefficient PDP and CCC implies that increasing the PDP and CCC increases profitability. Thus, a firm should maintain optimum days in PDP and CCC to increase profitability.

Finally, the value of R<sup>2</sup> 0.2217 shows that the firm's profitability is explained by 22 percent from the WCM, and the value of  $\chi^2$  22.58 (p=0.0039<0.01) indicates that the model is best-fitted.

# **Conclusion and Recommendations**

This paper has analyzed the influence of WCM on the profitability of non-financial firms listed in NEPSE. Various measures of working capital, such as working capital ratio measured by a current ratio (CR), leverage ratio measured by the ratio of total debt to total assets (TDTA), working capital investing measured by the ratio of current assets to total assets (CATA), working capital financing ratio measured by the ratio of current liabilities to current assets (CLCA) and working capital management measured by inventory conversion period (ICP), receivable conversion period (RCP), payable deferral period (PDP), and cash conversion cycle (CCC) as used by previous studies (e. g. Vahid et al., 2012; Abuzayed, 2012; Hingurala et al., 2017; Vijayakumaran, 2019; Nastiti et al., 2019; Anton et al., 2021; Aldubhani et al., 2022;) are used as an independent variable.

The primary conclusion of this paper is that the efficiency of WCM has a significant impact on profitability which helps to maximize the value of the firm. The paper also concluded that a firm with a lower level of current ratio and debt ratio could increase higher level of profitability. On the other hand, the firm has a higher ratio of current assets to total assets (CATA). Thus, this paper concludes that Nepalese non-financial firms should maintain lower current and debt ratios and a higher ratio of current assets to total assets (CATA) to achieve higher profitability.

Furthermore, this paper also reveals that the firm can increase its profitability by decreasing the inventory conversion period (ICP) and receivable conversion period (RCP) and stretching the payable deferral period (PDP). Thus, the financial manager should be able to sell inventory as soon as possible and collect their debtor quickly, and should lengthen the payable deferral period.

The management of non-financial firms can implement the findings of this paper to achieve a higher level of profitability to increase their value through efficient management of working capital. Since this paper has used only ROA as corporate profitability and a very selected measure of working capital management, future studies should incorporate other measures of corporate profitability and working capital management.

# **References:**

- Abuzayed, B. (2012). Working capital management and firms' performance in emerging markets: The case of Jordan. *International Journal of Managerial Finance*, 8(2), 155-179. https://doi.org/10.1108/17439131211216620
- Aldubhani, M. A., Wang, J., Gong, T., & Maudhah, R. A. (2022). Impact of working capital management on profitability: Evidence from listed companies in Qatar. *Journal of Money and Business*, *2*(1), 70-81. https://doi.org/10.1108/JMB-08-2021-0032
- Anton, S. G., & Afloarei Nucu, A. E. (2021). The impact of working capital management on firm profitability: Empirical evidence from the Polish listed firms. *Journal of Risk and Financial Management*, 14(1), 9-14. https://doi.org/10.3390/jrfm14010009
- Baños-Caballero, S., García-Teruel, P. J., & Martínez-Solano, P. (2014). Working capital management, corporate performance, and financial constraints. *Journal of Business Research*, 67(3), 332-338. https://doi.org/10.1016/j.jbusres.2013.01.016
- Bhatia, S., & Srivastava, A. (2016). Working capital management and firm performance in emerging economies: Evidence from India. *Management and Labour Studies*, 41(2), 71-87. https://doi.org/10.1177/0258042X16658733
- Bhattacharya, H. (2021). *Working capital management: Strategies and techniques*. PHI Learning Pvt. Ltd.
- Deloof, M. (2003). Does working capital management affect profitability of Belgian firms? *Journal of Business Finance & Accounting*, *30*(3&4), 573–588.
- Eya, C. I. (2016). Effect of working capital management on the performance of food and beverage industries in Nigeria. *Arabian journal of business and management review*, 6(5), 1-7. https://doi.org/10.4172/2223-5833.1000244
- Filbeck, G., & Krueger, M. T. (2005). An analysis of working capital management results across industries. *Mid-American Journal of Business*, 20(2), 11-18.
- Ganesan, V. (2007). An analysis of working capital management efficiency in telecommunication equipment industry, *Rivier Academic Journal*, *3*(2), 1-10.
- Grablowsky, B. J. (1984). Financial management of inventory. *Journal of Small Business Management*, July, 59-65.
- Hingurala, A., Perera, W., & Vijayakumaran, R. (2017). The impact of working capital management on firm value: Evidence from a frontier market. *Asian Journal of Finance & Accounting*, *9*(2), 399-413.
- Hoang, T. V. (2015). Impact of working capital management on firm profitability: The case of listed manufacturing firms on Ho Chi Minh Stock Exchange. *Asian Economic and Financial Review*, 5(5), 779-789.
- Kusuma, H., & Dhiyaullatief Bachtiar, A. (2018). Working capital management and corporate performance: Evidence from Indonesia. *Central European Management Journal*, 26(2), 76-88. https://doi.org/10.7206/jmba.ce.2450-7814.229

- Lazaridis, I., & Tryfonidis, D. (2006). Relationship between working capital management and profitability of listed companies in the Athens stock exchange. *Journal of Financial Management and Analysis*, 19(1), 26-35.
- Moussa, A. A. (2018). The impact of working capital management on firms' performance and value: Evidence from Egypt. *Journal of Asset Management*, *19*, 259-273. https://doi.org/10.1057/s41260-018-0081-z
- Nastiti, P. K. Y., Atahau, A. D. R., & Supramono, S. (2019). Working capital management and its influence on profitability and sustainable growth. *Business: Theory and Practice*, 20, 61-68. https://doi.org/10.3846/btp.2019.06
- Padachi, K. (2006). Trends in working capital management and its impact on firms' performance: An analysis of Mauritian small manufacturing firms. *International Review of Business Research Papers*, 2(2), 45-58.
- Pouraghajan, A., & Emamgholipourarchi, M. (2012). Impact of working capital management on profitability and market evaluation: Evidence from Tehran Stock Exchange. *International Journal of Business and Social Science*, 3(10), 311-318.
- Sim, S. L., Ali, A., & Ming, W. W. P. (2019). Working capital management and firm performance: An empirical study for Malaysian public listed companies in property industry. *Borneo Journal of Social Science & Humanities*, 1(2), 1-15. https://doi.org/10.35370/bjssh.2019.1.2-06
- Smith, K. (1980). Profitability versus liquidity tradeoffs in working capital management. *Readings on the Management of Working Capital*, 42, 549-562.
- Teruel, P. J. G., & Solano, P. M. (2007). Effects of working capital management on SME profitability. *International Journal of Managerial Finance*, *3*(2), 164-177.
- Vahid, T. K., Elham, G., Khosroshahi Mohsen, A., & Mohammadreza, E. (2012). Working capital management and corporate performance: evidence from Iranian companies. *Procedia-Social and Behavioral Sciences*, 62, 1313-1318. https://doi.org/10.1016/j.sbspro.2012.09.225
- Vijayakumaran, R. (2019). Efficiency of working capital management and firm value: Evidence from Chinese listed firms. *International Journal of Financial Research*, 10(6), 133-144. https://doi.org/10.5430/ijfr.v10n6p1
- Yakubu, I. N., Alhassan, M. M., & Fuseini, A. A. (2017). The impact of working capital management on corporate performance: Evidence from listed non-financial firms in Ghana. *European Journal of Accounting, Auditing and Finance Research*, 5(3) 68-75.