Research Paper

Impact of Working Capital Management on Profitability in Spinning Mill, Trivandrum

[1]Dr.Sivakami S, [2]Dr.R.Dhaneesh, [3]Dr.P.Muthukumar

Assistant Professor, Department of Management Studies, Amrita College of Engineering & Technology, Nagercoil.
Assistant Professor, Department of Management Studies, Amrita College of Engineering & Technology, Nagercoil.
Professor, Department of Management Studies, Amrita College of Engineering & Technology, Nagercoil.

ABSTRACT: *Working capital management is a complex area in the field and thereby profitability. This paper focus on the Impact of working capital management on profitability of spinning mill situated in Trivandrum, involved in the manufacturing and circulation of yarn to various part of the country. The main objective of this study is to find out the correlation between working Capital Management and Profitability as well as to evaluate the impact of working capital on profitability in spinning mill over a period of five years from 2015 to 2019.The study is conducted based on secondary data and the analysis are carried out with the help of statistical tools, such as descriptive statistics, correlation analysis and regression analysis. The study finds that the return on asset deviates in the opposite direction to current ratio, average collection period, average payment period, inventory conversion period, cash conversion cycle and firm size but positively correlation with debt.*
KEY WORDS: *Working Capital Management, Current Ratio, Average Collection Period & Profitability.*

## I. INTRODUCTION

Working Capital management is the key aspect to success for every entity. It represents a company's strategy designed to monitor and develop the two components of working capital, say current assets and current liabilities to safeguard the financial effectiveness of the company. Working capital management is substantial in financial management due to the fact that it plays a vital role in keeping the wheel of the corporate running. Every business requires capital without which it cannot be succeeded. The investment decisions are connected with investments in current assets and fixed assets. The efficiency of business enterprises depends largely on their ability to manage their working capital. Working capital management is therefore one of the most important phases of a firm's overall financial management.

To determine the worth of investment, along with the analysis of a company's profitability it is necessary to understand how efficiently the firm is utilizing its resources and its capital. That is profitability is the ability of the company to utilize its resources in such a way that it can generate more revenue than what it must pay in expenses. A company generates profits through operations; if a company is not operating it will not make any money. There are different factors that working Capital management is the key aspect to success for every entity. It represents a company's strategy designed to monitor and develop the two components of working capital, say current assets and current liabilities to safeguard the financial effectiveness of the company. Working capital management is substantial in financial management due to the fact that it plays a vital role in keeping the wheel of the corporate running. Every business requires capital without which it cannot be succeeded. The investment decisions are connected with investments in current assets and fixed assets. The efficiency of business enterprises depends largely on their ability to manage their working capital. Working capital management is therefore one of the most important phases of a firm's overall financial management.

To determine the worth of investment, along with the analysis of a company's profitability it is necessary to understand how efficiently the firm is utilizing its resources to affect the profitability of a firm. A few of them are the degree of competition a firm faces, the strength of demand, state of the economy, economies of scale, etc. apart from these factors the one which can make a huge impact on profit earning capability is the

performance of management. More precisely, we can call it working capital management. Successful management of working capital is crucial for the long-term growth and profitability of the firm. Firms need working capital to begin their business operations to carry out their activities efficiently and meet their short-term obligations. Working capital management is concerned with day-to-day activities rather than long-term investment decisions. But it is obvious that these short-term actions taken by the firm will definitely affect the long-term decisions and hence on profitability.
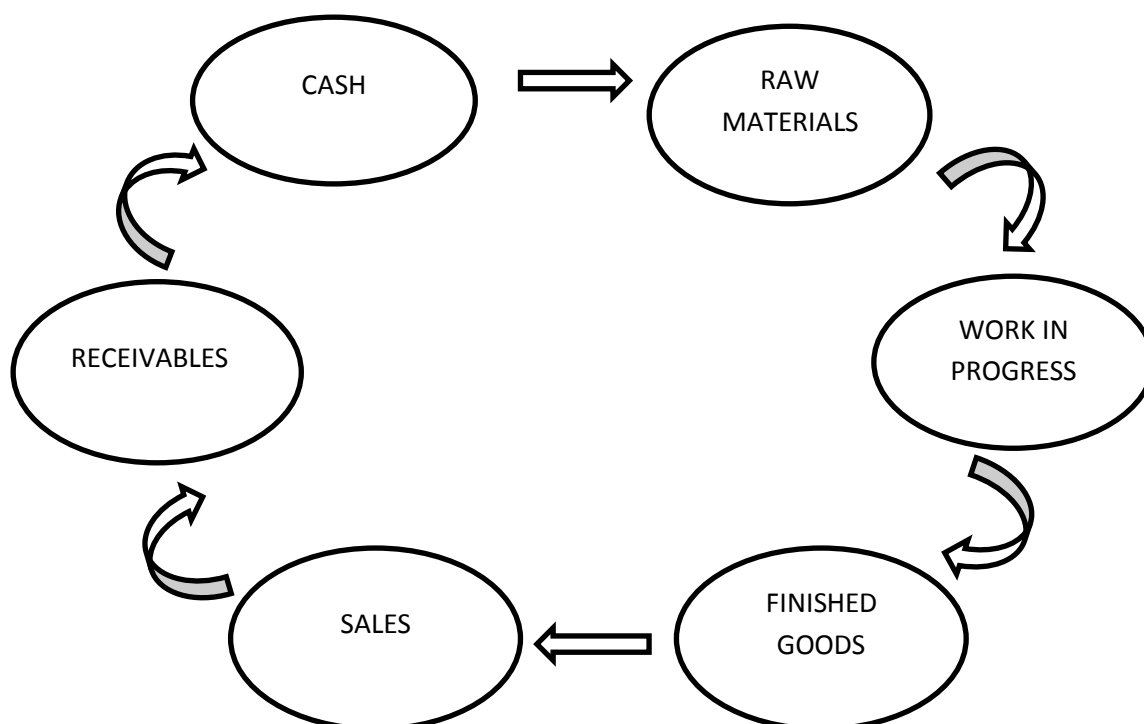
Figure: 1Operating Cycle Concept of Working Capital

II.   REVIEW OF LITERATURE

[4] Examined the thematic influence of working capital management on the profitability of Hindalco Industries Limited. This study is based on secondary data and the data comes from annual reports of the companies for the period of 17 years, ie. The regression results of the study show that the current ratio, the liquidity ratio, the accounts receivable turnover ratio and the ratio of working capital to total assets have a statistically significant impact on the profitability of Hindalco Industries Limited. [2] analyzed the effects of working capital management on the profitability of manufacturing companies. The study period of the work was five years, i. H. 2005 - 2010. The research methodology used by the author is the correlation and regression analysis (two different methods of the fixed effects model and the ordinary least squares model). The result of the correlation analysis shows that there is a negative relationship between profitability and customer days, warehouse days, and supplier days. The results of the regression analysis show that cash in circulation, company size, and working capital debt are important for both methods.[5]analyzes the effects of working capital management on the profitability of ACC Cement Company. The study is based on secondary data, the data is collected from Money Control websites as well as company websites, and the study periods are 10 years, that is, 19992000 to 20092010. The methodology of Research used in this document is Correlation Coefficient, Multiple Correlation Analysis, and Multiple Regression Analysis. In this work, few variables show a strong and positive correlation with profit, while others do not. The results show that there is a moderate correlation between working capital efficiency and profitability. Analysis by [6] on the influence of working capital management on profitability and market valuation: evidence from the Tehran Stock Exchange. The results show that there is a significant relationship between the management of working capital and the profitability of the company, and there is no significant relationship between the market value of the company. [3] examined the effects of working capital management on the profitability of Indian manufacturing companies. The study period was from 200506 to 200910, that is, H. for 5 years, and the methodology used in this study was the correlation and regression analysis. Research shows that in correlation analysis, profitability has a negative relationship between profitability and debtor day, storage day, and credit location day. And a regression analysis result

shows that there is a positive relationship between the number of days of inventory and the number of days of trade accounts payable. [1] examined the effects of working capital management on the profitability of Indian Oil Corporation. The study was based on secondary data and the study period was from 2009-10 and 2013-14. The research methodology used was Pearson's correlation, descriptive statistics and INM SPSS. The results show that there is a significant negative correlation between working capital management and net income, and also indicates a negative relationship between liquidity and profitability. [7] examine the effects of working capital management on the profitability of Bharti Airtel Telecom Company. The research period was from 2007-08 and 2014-15 and statistical and econometric instruments were used for the research. The results show that there is a significant negative relationship between the liquidity and profitability of the company, and also shows that the company's rapid ratio, the inventory turnover ratio, the debtor turnover ratio behave satisfactorily and the debt ratio. The company's liquidity has been found unsatisfactory.

III.   OBJECTIVES OF THE STUDY

The main objective of this study is to find out the correlation between working Capital Management and Profitability as well as to evaluate the impact of working capital on profitability in the company over a period of five years from 2015 to 2019. In order to obtain main objective following are the specific objectives of the study.
- To study the profitability position of the company.
- To analyse the effectiveness of working capital management
- To statistically infer the relationship between working capital management and profitability.

IV.   RESEARCH METHODOLOGY

This study is based on secondary data collected from the annual reports for a period of five years from 2015 to 2019. To measure the profitability and working capital management of the company various variables such as Average Collection Period (ACP), Inventory Conversion Period (ICP), Average Payment Period (ACP) and Cash Conversion Cycle (CCC), Return on Assets (ROA), Debt Ratio, Current Ratio and Firm Size are used.

Variables	Definition	Measurement
Dependent Variable		
Return on Assets (ROA)	It indicates the cost effectiveness of firm in relation with total assets	Net income/ Total Assets
Independent Variable		
Average Collection Period (ACP)	It is the average time period taken by the firm to collect the receivables.	(Account Receivables/Net Sale)* 365
Inventory Conversion Period (ICP)	It is the total time period essential for converting the whole inventory into sales	(Inventory/ Cost of Sales)*365
Average Payment Period (APP)	It is the average time period taken by the firm for paying off its dues with respect to purchases of material that are bought on the credit basis.	(Account Payables/Cost of Sales)*365
Cash Conversion Cycle (CCC)	It is the time takes for a company to convert its investments in inventory and other resources into cash flows from sales.	ACP+ICP-APP
Debt Ratio (DR)	It shows the proportion of a company's assets that are financed by debt.	Total Liabilities/Total Assets
Current Ratio CR	Measures a company's ability to pay short term obligations.	Current Assets/Current Liabilities
Control Variable		
Firm Size	It indicates the worth of the company in terms of assets.	Natural Logarithm(Total Assets)

Table: 1: Dependable variables

V.   SCOPE OF THE STUDY

The geographical scope of this study extends to Spinning Mills in Trivandrum. The study aims to get a clear picture about how the company manages its working capital to maximize the profit.

VI.   HYPOTHESIS

Hypothesis 1: There is no relation between Return on Assets and Current ratio
Hypothesis 2: There is no relation between Return on Assets and Average Collection Period
Hypothesis 3: There is no relation between Return on Assets and Inventory Conversion Period
Hypothesis 4: There is no relation between Return on Assets and Average Payment Period
Hypothesis 5: There is no relation between Return on Assets and Debt ratio
Hypothesis 6: There is no relation between Return on Assets and Cash Conversion Cycle

VII. RESULTS AND FINDINGS

7.1 Descriptive Analysis

Variable	Mean	Median	SD	Min	Max
ROA	2.615	2.387	0.579	1.893	3.537
ACP	16.298	20	9.45	3	26
ICP	52.6	41	16.81	39	82
APP	22.6	21	11.74	10	41
CCC	46.2	53	18.28	17	67
Debt ratio	6.411	6.497	2.235	3.590	9.864
Current ratio	0.063	0.054	0.0326	0.015	0.107
Firm size	18.699	18.707	0.207	18.42	18.951

Table: 2 Descriptive analysis of independent and dependent variables

Interpretation:

The mean value of company's return on assets is 2.615 with median value of 2.387 and standard deviation of ROA is 0.579. It shows that estimation of productivity can fluctuate from 2.615 to both sides by 57.9%. Its minimum value is 1.893 in the year 2015-2016 and maximum value is 3.537 in the next year.

Average collection period indicates the efficiency of the company in the collection of account receivables. Here the firm takes a minimum of 3 days to a maximum of 26 days in receiving money from the customers. The organization has to wait an average of 16.298 days to collect cash of credit sales. From 2015 to 2019 the average collection period doesn't show a consistent trend.

The inventory conversion period indicates the time invested in converting the raw materials to sales. Here the company required a minimum period of 39 days to a maximum period of 82 days in the conversion process. From 2016 to 2019 there are only slight changes in the inventory conversion period. The standard deviation of inventor holding period is 16.81days.

The average payment period indicates the number of days a company takes to pay off their credit purchases. Here it varies from 10 to 41 days with an average of 22.6 days. From the year 2015 we can see a visible decrease in the payment period. The standard deviation of account payable period is 11.74 days.

Cash conversion cycle shows the efficiency of the firm to convert its inventory into sales and then into cash. Here the minimum number of days taken by the company to generate cash flows is 17 days for the year 2016-2017. On the other hand the highest cash conversion period is 67 days which is a long period.

The standard value of Debt ratio is 2:1. Debt ratio of this company is very high and it shows an unbalanced trend. It means that the considerable portion of debts of the company is funded by assets. The year 2017-2018 has the highest debt ratio of 9.864 and the year 2015-2016 has the lowest ratio of 3.590.As per the descriptive analysis, mean value of debt ratio is 6.411 with a standard deviation value of 2.235. Debt ratio fluctuates from 3.590 to 9.864.

The standard value of Current ratio is 2:1. Current ratio of this company is very low and it shows an unsteady trend. It means that the company doesn't have enough liquid assets to repay its short term liabilities. The year 2015-2016 has the highest current ratio of 0.107 and the year2018-2019 has the lowest ratio of 0.015.

As per the descriptive analysis, mean value of current ratio is 0.063 with a standard deviation value of 0.0326 which shows that the company's ability to pay short-term obligations fluctuates to both side by 3.26%.

To check the firm size and its relationship with profitability, normal logarithm of assets is taken as control variable. The mean value is 18.69 while the standard deviation is 0.207. the maximum value is 18.951 whereas minimum value is 18.42.

7.2 Correlation Analysis

The Correlation Analysis is a bivariate analysis used to study the closeness of the relationship between two or more variables. The value of the correlation coefficient varies between +1 and -1. The type of the relationship is indicated by the sign of the coefficient; a + sign directs a positive relationship and a − sign implies a negative relationship. Before doing regression analysis it is important to check the correlation between variables on which analysis is conducted. The variables are said to be correlated when the changes in one variable make any kind of changes in other. The following data shows the correlation of variables:

	ROA	ACP ratio	ICP ratio	APP	CCC	Debt	Current	Firm size
ROA	1							
ACP	-0.31	1						
ICP	-0.73	0.59	1					
APP	-0.17	0.30	0.75	1				
CCC	-0.72	0.86	0.74	0.2	1			
Debt ratio	0.74	-0.14	-0.86	-0.61	-0.48	1		
Current ratio	-0.42	0.79	0.87	0.71	0.77	-0.63	1	
Firm size	-0.88	0.39	0.79	0.25	0.77	-0.87	0.63	1

Table: 3 Correlation of variables

Interpretation:

The above table shows that ROA is negatively related with ACP, ICP, APP, CCC, Current ratio and Firm size. The negative relation of ROA with ACP implies that less the time taken by the customers to pay their bills the more money can invest in the raw materials and in other resources which in turn covert into sales with an increase in profitability. The negative relationship between ROA and ICP shows that the companies which usually keep lower level of inventories have higher level of profitability. Similarly the negative relationship between ROA and APP indicates even though the company wait longer to pay their bills the lesser is the profitability. It may be due to the inappropriate use of cash or due to the accumulation of bills receivables. The negative relationship between ROA and CCC is due to the reason that the reduction in days to convert inventory to cash will lead to increase in the profits of the company. The negative relationship between ROA and Current ratio implies that profitability and liquidity are inversely proportional to each other. That is even though the current assets increases over constant current liabilities it can lead to a reduction in profit. Here ROA and firm size are negatively related and it may be due to the fact that it is not always necessary for a large firm to be profitable since there are other factors like disruptive technology, single focus on customer base, poor credit policies etc. which can result in the declination of profits. As per the correlation analysis ROA is positively related only with Debt ratio. It indicates that higher levels of debt ratio are beneficial to profitability of the organization. Thus if the debt ratio is higher it is good for the company.

7.3 Regression Analysis

The regression analysis is a powerful statistical method that helps to determine the relationship between two or more variables. It estimates which variables have impact on variables of interest.

Regression Statistics	
Multiple R	0.4173384
R Square	0.17417134
Adjusted R Square	-0.1011049
Standard Error	0.68034074
Observations	5

ANOVA					
	df	SS	MS	F	F
Regression	1	0.292860613	0.29286	0.63271	0.48448
Residual	3	1.388590587	0.46286		
Total	4	1.6814512			

	Coefficients	Standard Error	t Stat	P-value
Intercept	3.07970814	0.659145894	4.67227	0.01852
Current Ratio	-7.4298424	9.340617773	-0.7954	0.48448

Table: 4 Relationships between Current Ratio and ROA

Interpretation:
The above table shows that there is a negative relationship between Current ratio and ROA. P value is higher than significance level 0.05. So we will accept null hypothesis and reject alternative hypothesis. Thus there is no relationship between Current ratio and ROA

Regression Statistics	
Multiple R	0.316423205
R Square	0.100123644
Adjusted R Square	-0.199835141
Standard Error	0.710187341
Observations	5

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.168353022	0.168353	0.333791	0.603945241
Residual	3	1.513098178	0.504366		
Total	4	1.6814512			

	Coefficients	Standard Error	t Stat	P-value
Intercept	2.927118301	0.62727525	4.666402	0.018578
ACP	-0.019175255	0.033189722	-0.57775	0.603945

Table: 5 Relationships between ACP and ROA

Interpretation:
The above table shows that there is a negative relationship between ACP and ROA. P value is higher than significance level 0.05. So we will accept null hypothesis and reject alternative hypothesis. Thus there is no relationship between ACP and ROA.

Regression Statistics		
Multiple R		0.73495291
R Square		0.54015579
Adjusted R Square		0.38687438
Standard Error		0.50767628
Observations	5	

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.908246	0.908246	3.523949	0.157126787
Residual	3	0.773206	0.257735		
Total	4	1.681451			

	Coefficients	Standard Error	t Stat	P-value
Intercept	3.94337919	0.743365	5.30477	0.013078
ICP	-0.0252836	0.013469	-1.87722	0.157127

Table: 6 Relationship Between ICP and ROA

Interpretation:
The above table shows that there is a negative relationship between ICP and ROA. P value is higher than significance level 0.05. So we will accept null hypothesis and reject alternative hypothesis. Thus there is no relationship between ICP and ROA

Regression Statistics	
Multiple R	0.173846996
R Square	0.030222778
Adjusted R Square	-0.2930363
Standard Error	0.737254609
Observations	5

ANOVA

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	df	SS	MS	F	Significance F
Regression	1	0.050818127	0.050818	0.093494	0.779771202
Residual	3	1.630633073	0.543544		
Total	4	1.6814512			

	Coefficients	Standard Error	t Stat	P-value	
Intercept	2.810980401	0.721940519	3.893645	0.030048	
Average payment period	-0.00865409	0.02830282	-0.30577	0.779771	

Table: 7 Relationships between APP and ROA

Interpretation:

The above table shows that there is a negative relationship between APP and ROA. P value is higher than significance level 0.05. So we will accept null hypothesis and reject alternative hypothesis. Thus there is no relationship between APP and ROA

Regression Statistics	
Multiple R	0.744916713
R Square	0.55490091
Adjusted R Square	0.406534546
Standard Error	0.499470519
Observations	5

ANOVA

	df	SS	MS	F	Significance F
Regression	1	0.9330388	0.933039	3.740072	0.14859316
Residual	3	0.7484124	0.249471		
Total	4	1.6814512			

	Coefficients	Standard Error	t Stat	P-value	
Intercept	1.375421882	0.678575286	2.026926	0.135746	
Debt ratio	0.193307456	0.099955941	1.933927	0.148593	

Table: 8 Relationship between Debt Ratio and ROA

Interpretation:

The above table shows that there is a positive relationship between Debt ratio and ROA. P value is higher than significance level 0.05. So we will accept null hypothesis and reject alternative hypothesis. Thus there is no relationship between Debt ratio and ROA

Regression Statistics	
Multiple R	0.72326575
R Square	0.52311334
Adjusted R Square	0.36415112
Standard Error	0.51699827

ANOVA

	df	SS	MS	F	Significance F
Regression	1	0.879589554	0.87959	3.2908	0.16731074
Residual	3	0.801861646	0.267287		
Total	4	1.6814512			

	Coefficients	Standard Error	t Stat	P-value	
Intercept	3.67463395	0.628423218	5.847387	0.00997	
Cash conversion cycle	-0.02294446	0.012648146	-1.81406	0.16731	

Table: 9 Relationships between CCC and ROA

Interpretation:

The above table shows that there is a negative relationship between CCC and ROA. P value is higher than significance level 0.05. So we will accept null hypothesis and reject alternative hypothesis. Thus there is no relationship between CCC and ROA

VIII. CONCLUSION

The study on impact of working capital management on profitability was conducted in Spinning Mill, Trivandrum. The study has identified and examined main elements of working capital. It is clear that working capital is a key to success of the every organization. The working capital management involves various activities like accounts management, cash management and inventory management. Shortage of working capital may lead to lack of liquidity and loss of sales hence it is necessary to maintain adequate level of working capital. The study helped to understand the significant relationship between variables and profitability along with the recognition of the fact that the companies with more debt have higher return on assets due to tax shields. Also it helped to track the variations in profitability with respect to other factors.

By correlation analysis it is clear that return on asset deviates in the opposite direction to current ratio, average collection period, average payment period, inventory conversion period, cash conversion cycle and firm size. It shows that any changes in these independent variables can have an opposite reaction on return on asset.

Return on asset has a positive relation with debt ratio which indicates that they both move in same direction, either increasing or decreasing.

With the help of regression analysis it is clear that the profitability of this company doesn't have kind of dependence with current ratio, debt ratio, and average collection period, average payment period, inventory conversion period and cash conversion period.

The objective of this study is achieved through ratio analysis, correlation analysis and regression analysis. From the study it is clear that the company has to concentrate more on working capital cycle and on credit management policy to increase the sales and hence the profitability.

IX. LIMITATIONS OF THE STUDY

- Data is mostly secondary in nature
- External factors that affect the performance of the company are not taken into account
- The area and scope of the study is limited to spinning mills.

X. SUGGESTION FOR FUTURE RESEARCH

A detailed study on relation between working capital management and profitability in a specific industry could add more value as the scope of this study is only limited to the respective company. Also by taking into consideration of more number of variables as proxy of profitability and working capital can give more accurate results.

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