

## AN EMPIRICAL STUDY ON DETERMINANTS INFLUENCING WORKING CAPITAL MANAGEMENT IN CONSTRUCTION SECTOR

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### Abstract

Effective working capital plays a vital role in maintaining liquidity, operational efficiency and overall financial stability, especially in the construction sector where the cash flows are often irregular and project duration are long. The study investigates the key factors influencing working capital management from a managerial perspective used primary data collection method which taken from 367 respondents who were in managerial position with structured questionnaire. Factor analysis was applied to identify the underlying dimensions that shape working capital management practices. The findings found that the cash flow planning, control on receivables and payables, optimal inventory management and external environment and internal operations influence the working capital. The study offers practical insights for construction companies to raise the liquidity minimize the operational risk and to enhance the overall financial efficiency.

**Keyword:** Working Capital Management, Cash Management, Internal Operation, External Environment, Liquidity.

### Introduction

Working capital is the important part of the financial management that significantly affects the company's liquidity and profitability and overall operational efficiency. Working capital management is main for the financial health of business across all sectors. In case of manufacturing, services, retail or construction, managing the working capital is needed. It involves the systematic planning, monitoring and control of current assets and current liabilities like cash, receivables, inventories and payables to know whether there is smooth continuity of business operation. Effective working capital management aids the firms to meet the short-term financial obligations promptly while operational stability. In big industries like the construction where projects are characterized by irregular cash flows extended payment cycles and substantial upfront investments, efficient working capital management becomes critical for the organizational sustainability and long term growth. From the managerial perspective working capital management look beyond financial function and represents a key strategic and operational responsibility. Despite the universal importance of working capital management many companies continue to face challenges in optimizing it due to lack of strategic alignment or insufficient data driven decision-making. Managers are required to make continuous day-to-day decisions related to the cash utilization, credit terms, inventory procurement, and supplier payments which these influence the working capital. Poorly informed or delay decisions can lead to liquidity shortages increased dependence on external financing, strained supplier relationship and disruptions will occur in project. A sound working capital management practices helps to stable cash flows, reduces financial risk, improves operational efficiency, and enhance overall organizational performance. The managers must continuously balance the cash inflows and cash outflows while project is ongoing. Effective working capital management in this sector also requires a both sound financial planning efficient interdepartmental coordination and adaptability to changing external conditions.

## Review of Literature

Altaf and Shah (2023) pointed out sound working capital management plays a key role for financially constrained firms by enabling operational stability and improving profit performance. Sanyetal (2023), investigated whether Working Capital Management (WCM) and leverage affect firm profitability the 79 companies are taken as purposive sampling used for period from 2014 to 2020. The study concluded that Manager must manage the Cash Conversion Cycle days, by managing Days Sales Outstanding, Days Inventory Outstanding and Days Payable Outstanding. Mandipa and Sibindi(2022), examined the relationship between the working capital management and financial performance of South African retail firms. The sample of 16 South retail firms are taken from Johannesburg Stock Exchange for the period 2010-2019. Using fixed effects estimators found that the cash conversion cycle ,average receivable period, average inventory conversion period ,average payable period has the negative relationship with the profitability. Thus result found that the working capital components influences the financial performances of South African retail firms. Alvarez (2020) examined the impact of working capital management on the profitability of Argentine manufacturing SMEs using a sample of 117 firms overs the period 2016-2018. The results revealed that inventory days, receivable days, payable days, the cash conversion cycle, and the current ratio had significant positive influence on profitability, measured through both return on asset and return on equity. Venuprahlaad and Aruna (2019) analysed effect of working capital management on the financial performance of selected trading firms listed on the Colombo Stock Exchange. The regression results indicated that excessive investment in inventories and accounts receivable negatively influenced financial performance. Nastit et al.(2019) examined the impact of working capital management on firm profitability and its influence on the sustainable growth. The study concluded that working capital management has a significant relationship with firms profitability. Ojha (2019) found that profitability was negatively associated with days sales outstanding and days payable outstanding while showing a positive relationship with the current ratio. Similary Maheshwari (2017) longitudinal analysis of HPCL confirmed a positive association between liquidity and profitability, along with a significant link between risk and returns.

**Objective:** To Analyse The Factors influencing working capital management in managerial perspective in construction firms.

**Research Methodolgy:** The study used the descriptive research design to identify the various factors influencing the working capital management from the managerial perspective in infrastructure firm. The primary data was collected from 367 managerial persons with the help of structured questionnaire, convenience sampling technique was adopted. Percentage analysis and factor analysis was applied to find the factors influencing working capital management.

**Need For The Study:** Efficient working capital management is crucial for the financial stability and growth of any business. Managers play a key role in making day to day decision that directly impact cash flow, inventory and payment. However the specific factors to consider when managing working capital are not always clearly understood. This study needed to gather direct insights from managers through primary data using structured questionnaires. By analysing their response the research aims to identify common pattern and key influencing factors. Understanding these can help organizations improve financial planning, reduces the risk overall operational efficiency.

**Analysis & Interpretation:** The following tables shows the analysis for the objective factors influencing working capital.

**Table No. 1, Demographic Variables of Managers.**

Demographic	N	Percentage	Cumulative Percentage
Age			
Below 30	65	23.16	23.16
30-40	160	43.60	66.76
Above 40	122	33.24	100
Gender			
Male	210	57.22	57.22
Female	157	42.78	100
Education Qualification			
UG	110	29.97	29.97
PG	170	46.32	76.29
Professional	87	23.71	100
Experience			
Less than 5 years	95	25.89	25.89
5-10	140	38.15	64.03
Above 10	132	35.97	100
Position			
Senior Level	120	32.70	32.70
Middle Level	165	44.96	77.66
Executive Level	82	22.34	100

The demographic analysis of 367 managerial respondents provides age distribution reveals that the majority of managers fall with 30 to 40 age group indicating a strong mid career professionals .The presence of 33.24 % above 40 further supports a mature and seasoned decision – making base. Gender-wise males account for 57.22 % and females 42.78% reflecting moderate gender diversity in managerial roles.In terms of educational qualifications majority hold post graduates (46.32%) followed by undergraduates (29.97%) and professional 23.71 % of them.This indicate a well educated managerial workforce essential for strategic financial planning and execution. Experience level shows that 38.15% of managers have been between 5 to 10 years are experienced while 35.97 % have over 10 years demonstrating that most respondents are experienced professional with sufficient exposures to real time financial operations. The position levels indicate that 44.96 % are at the middle management level, 32.70% in senior roles and 22.34 % at executives levels. This spread reflects a balanced representation across organizational hierarchies ensuring the responses covers a wide range of strategic and operational perspectives in managing working capital effectively.

**Table No.2, Cronbach alpha and KMO and Barlett Test**

Cronbach's alpha	No of items
0.739	30
<b>KMO and Bartlett's Test</b>	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.836
Bartlett's Test of Sphericity	
Approx. Chi-Square	4529.240
Df	435
Sig.	.000

A cronbach's alpha of 0.739 for 30 items indicates acceptable internal consistency meaning the items reliable to run factor analysis. This suggest the overall scale is suitable for analysis. The KMO value of 0.836 indicates a high level of sampling adequacy suggesting that data is suitable for factors analysis. A KMO value above 0.8 is considered good with Bartlett's Test of Sphericity is highly significant with p value less than 0.05

**Table No.3, Factors Influence Working Capital Management**

Factor	Components	Items Description	Rotated Loadings	% of Variance	Eigen Value
1	Cash Management	Maintain Daily Cash flow	.828	12.761	3.828
		Forecast Cash Need	.821		
		Avoid Cash Shortages	.802		
		Control spending	.792		
		Maintain cash reserve	.792		
2	Receivable Management	Clear Credit Policy	.871	11.832	3.550
		Prompt Customer payment	.830		
		Manage Delay Payments	.799		
		Review the receivables regularly	.740		
		Track Outstanding Receivables	.736		
3	Payable Management	Utilize the supplier credit	.836	11.249	3.375
		Timely Supplier Payments	.831		
		Clear Payment Term	.763		
		Minimal Payment Delays	.761		
		Optimize Payable Management	.759		
4	Inventory Management	Monitor Inventory Level	.810	9.866	2.960
		Use forecasting Techniques	.804		
		Minimize Inventory Waste	.795		
		Maintain Optimal Stock	.786		
		Efficient stock reordering	.735		
5	External Environment	Market Fluctuations	.845	9.144	2.743
		Economic Trends Influence	.805		
		Tax Policy	.777		
		Customer demand varies	.733		
		Industry completion	.718		
6	Operational Decision Framework	Set working Goals	.819	8.385	2.516
		Regular Finance Monitoring	.800		
		TransperantDecsion	.749		
		Department Co-ordination	.745		
		Effective Financial Plan	.738		

In the above table shows the six factors that significantly influence the working capital management in construction industry. These components collectively explain the variation in managerial practices surrounding cash flow, operational efficiency, and external responsiveness:

**Factor 1:** Cash Management explains 12.76% of the total variance with strong eigen value 3.28 with factor loadings more than 0.79. Effectively cash flow forecasting and maintain reserves prevent liquidity crunches and ensure the obligations are met on time. Proper control over unnecessary spending preserves cash enhances the firm ability to invest in short-term opportunities in working capital management and this factor directly supports timely payments, inventory purchase and overall working capital cycle efficiency.

**Factor 2:** Receivable Management has 11.83% of variance with items like clear credit policy, prompt customer payment showing the loadings less than 0.73. A well managed receivable process ensures that credit extended to customers is recovered promptly, maintain steady cash inflow. Delay in collections or unclear credit policies tie to working capital reduce the liquidity and increase the borrowing needs. Effective receivable management helps the bad debts reduction and also strengthens cash flow, it supports operational continuity to make an effective working capital management.

**Factor 3:** This factor has the variance at 11.25% which shows the company's ability to manage its short term liabilities. Timely payments ensure good supplier relations and also lead to more favourable credit terms. Proper payable management helps to balance between the cash reserve and maintaining operational reliability.

**Factor 4:** 9.87% of the variance the factors has it shows the how well the inventory control on the working capital management. Inventory has a significant impact on the working capital thus the stock level plays crucial role. Effective control over inventory enhances the efficient working capital management.

**Factor 5:** External environment has the 9.14% of variance on working capital management. Business should adapt to the external conditions can adjust the working capital policies accordingly to external conditions.

**Factor 6:** Operational decision framework has 8.39% shows the importance of internal governance in managing working capital effectively. The internal managerial practice, monitoring helps to working capital management.

### Conclusion

Cash, receivable, payable, inventory, external and operational decision framework helps to shape the effective and efficient working capital management. The factors highlights that effective management of working capital required to be balanced by both internal and external environments. It has been found that these components captures in structuring the working capital process. Thus when firm when checks these components managers can have efficient and effective working capital management to optimize the liquidity, reduce the operational risks and enhance the overall financial efficiency of their organization. Efficient and effective working capital management helps the organization to run in market with proper management.

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