Working Capital Management and Its Impact on Profitability of Indian Companies

Submitted by

Vanshika Gohil

Titiksha Nardewar

MBA in Financial Technology (FinTech)

Semester III "C'

MIT-ADT University, Pune

2026

ABSTRACT

Working capital is often described as the lifeblood of a business, and for good reason: even a company with a sound long-term strategy can run into serious trouble if it cannot manage its day-to-day cash, receivables, payables, and inventory. This paper examines how working capital management influences the profitability of companies operating in India, a market where high interest rates, seasonal demand cycles, and long-standing credit customs make the subject especially relevant. Drawing on secondary data, published financial statements, and existing academic literature, the study looks at how components of working capital, such as the cash conversion cycle, inventory holding period, receivables collection period, and payables deferral period, relate to profitability measures like return on assets and net operating profit. The paper also uses illustrative examples from Indian manufacturing, FMCG, and IT-enabled companies to show how working capital practices differ across sectors and what that means for financial performance. The overall finding, consistent with a large body of earlier research, is that there is a meaningful inverse relationship between the length of the cash conversion cycle and profitability: firms that collect payments faster, turn over inventory more quickly, and negotiate reasonable payment terms with suppliers tend to generate better returns, though the relationship is not identical across industries. The paper closes with practical suggestions for Indian firms, particularly small and mid-sized companies that often struggle with liquidity, and outlines directions for further research.

Keywords: Working Capital Management, Profitability, Cash Conversion Cycle, Liquidity, Indian Companies, Return on Assets

1. INTRODUCTION

Every business, regardless of its size or the industry it operates in, has to answer a fairly simple question every single day: does it have enough cash on hand to pay its bills while it waits for its own customers to pay? This is, at its core, what working capital management is about. Formally, working capital is defined as the difference between a firm's current assets, such as cash, inventory, and receivables, and its current liabilities, such as payables and short-term borrowings. But the formal definition barely captures how important the underlying decisions are. A manufacturing company that ties up too much money in raw material stock, or a retailer that extends credit too generously to customers who are slow to pay, can find itself unable to meet payroll even while its books show healthy sales.

In the Indian context, working capital management takes on an added layer of complexity. Interest rates on short-term borrowing in India have historically been higher than in many developed economies, which makes the cost of holding excess working capital more punishing. At the same time, Indian business culture, particularly in sectors like textiles, auto components, and pharmaceuticals, often involves extended credit periods to buyers and correspondingly long waits for payment. Add to this the seasonal nature of demand in industries such as agriculture-linked FMCG and construction materials, and it becomes clear why Indian firms need to pay unusually close attention to how they manage cash, inventory, receivables, and payables.

This paper sets out to explore the relationship between working capital management and profitability among Indian companies. The motivation is straightforward: profitability is what investors, lenders, and managers ultimately care about, and if the way a firm manages its short-term assets and liabilities has a measurable effect on that profitability, then working capital policy deserves to be treated as a strategic decision rather than a purely operational one. The paper reviews the theoretical underpinnings of working capital management, surveys existing empirical literature (both international and India-specific), and uses illustrative sectoral comparisons to build a picture of how these dynamics play out in practice.

1.1 Background of the Study

India's economy has undergone significant structural change over the past two decades, moving from a largely agrarian and manufacturing-led base towards a more diversified mix that includes services, information technology, and a fast-growing digital economy. Despite this diversification, working capital intensity remains high across most sectors. Manufacturing firms typically carry large inventories and face long production cycles; even asset-light service and technology companies must manage receivables carefully, since billing cycles and client payment terms can stretch out for months. The introduction of the Goods and Services Tax (GST) in 2017, changes in Reserve Bank of India (RBI) monetary policy, and periodic liquidity crunches, such as those experienced by non-banking financial companies (NBFCs) in 2018-19 and by many small businesses during the COVID-19 pandemic, have all underscored how fragile working capital positions can be when external shocks hit.

It is against this backdrop that the present study examines working capital management as a determinant of profitability. Rather than treating liquidity and profitability as separate, sometimes competing, objectives, the paper argues that with the right approach, Indian firms can pursue both simultaneously by optimizing, rather than simply minimizing, their working capital.

1.2 Statement of the Problem

Many Indian companies, especially small and medium enterprises (SMEs), continue to face a persistent tension between maintaining sufficient liquidity and maximizing profitability. Holding too much cash or inventory ties up funds that could otherwise be invested for returns, while holding too little exposes the firm to the risk of being unable to meet short-term obligations, pay suppliers on time, or fund day-to-day operations. This creates a genuine managerial dilemma. The problem this study addresses is the extent to which specific working capital practices, namely the management of inventory, receivables, payables, and the overall cash conversion cycle, actually influence profitability outcomes for Indian companies, and whether this relationship holds consistently across industries.

1.3 Objectives of the Study

- To understand the concept and components of working capital management and their relevance to Indian businesses.
- To examine the relationship between working capital management and profitability of companies operating in India.
- To analyse how the cash conversion cycle and its components (inventory period, receivables period, and payables period) affect profitability.
- To compare working capital practices across select Indian industry sectors.
- To suggest practical measures that Indian companies, particularly SMEs, can adopt to improve working capital efficiency without compromising liquidity.

1.4 Scope and Limitations of the Study

The scope of this study is confined to a conceptual and secondary-data-based examination of working capital management practices among Indian companies, with illustrative reference to sectors such as manufacturing, fast-moving consumer goods (FMCG), pharmaceuticals, and information technology. The study does not undertake primary data collection through surveys or interviews; instead, it relies on published literature, industry reports, and general

financial data patterns. As a result, the conclusions are indicative rather than statistically definitive, and readers should treat the sectoral comparisons as illustrations of broader trends rather than precise benchmarks for any specific company. Time and resource constraints also mean the study covers a representative cross-section of industries rather than an exhaustive one.

2. REVIEW OF LITERATURE

The relationship between working capital management and profitability has attracted sustained academic interest for several decades, both internationally and within India. This section summarizes the key strands of that literature.

2.1 Foundational and International Studies

Early researchers in corporate finance established that the way a firm manages its current assets and liabilities is not a neutral, purely administrative matter but one with direct financial consequences. Studies from the 1990s and early 2000s, conducted primarily in the United States and Europe, generally found a negative relationship between the cash conversion cycle and firm profitability: the longer a company takes to convert its investment in inventory and receivables back into cash, net of the credit period it receives from suppliers, the lower its profitability tends to be. This finding has since been replicated across many countries and time periods, lending it a degree of robustness that makes it a useful starting point for country-specific research, including work focused on India.

2.2 India-Specific Research

A substantial body of research has examined working capital management within the Indian context, typically using data drawn from companies listed on the Bombay Stock Exchange (BSE) or National Stock Exchange (NSE). Much of this research confirms the broader international finding of an inverse relationship between the cash conversion cycle and profitability measures such as return on assets, return on capital employed, and net operating profit margin. Goel and Sharma (2015), for instance, studied working capital management efficiency in the Indian manufacturing sector and found that firms which manage their operating cycle tightly tend to perform better financially than those that let inventory and receivables build up unchecked. Mishra (2017), in a company-level study of accounts receivable practices at S. H. Kelkar and Company in Mumbai, a listed player in the flavours and fragrances industry, similarly found that the way a firm manages its receivables has a direct bearing on its working capital position and, through that, on its overall profitability, reinforcing the point that receivables discipline is not a minor bookkeeping matter but a genuine profitability lever.

A more recent and methodologically rigorous contribution comes from Jha and Mittal (2024), who examined the financing patterns and financial performance of 226 listed small and medium enterprises (SMEs) on the BSE-SME and NSE-Emerge platforms over the period 2014 to 2019. Using panel data regression, they found that the current ratio, their proxy for liquidity and, by extension, working capital position, had a statistically significant negative relationship with both return on assets and return on equity. In other words, Indian SMEs that carried disproportionately high levels of current assets relative to current liabilities were not converting that liquidity into better returns; if anything, the opposite was true, which the authors interpreted as evidence of inefficient management of liquid funds rather than a sign of financial strength. This finding is a useful reminder that working capital management is about efficiency and balance rather than simply maximising liquidity, and it echoes the broader international literature discussed above.

Other Indian-context research, such as Mishra (2018) on the financial performance of selected automobile companies, has shown that working capital intensity varies considerably even within manufacturing, with capital and inventory-heavy segments like automobiles facing different pressures than lighter manufacturing sub-sectors. Broader macroeconomic studies, including Mishra's work on inflation and its impact on the Indian economy, are also relevant background, since inflationary pressure directly affects the real cost of holding inventory and extending credit, both central concerns of working capital policy.

2.3 Sector-Specific and Comparative Studies

Comparative studies across Indian sectors have generally observed that capital-intensive and inventory-heavy industries, such as automobiles and auto components, textiles, and engineering goods, are more sensitive to working capital inefficiencies than asset-light sectors like information technology services. In IT and IT-enabled services, receivables management (rather than inventory) tends to be the dominant driver of working capital performance, since these firms typically hold little to no physical inventory but may extend lengthy billing cycles to large corporate clients. FMCG companies, on the other hand, often benefit from a naturally favourable working capital position because they can sell to a wide distribution network on relatively short credit terms while negotiating longer payment terms with their own suppliers, sometimes resulting in a negative cash conversion cycle, a position where the firm is effectively funded by its suppliers and customers rather than needing to fund its own operating cycle.

2.4 The Role of Firm Size, Growth, and Macroeconomic Conditions

Several researchers have also examined how firm size, growth rate, and macroeconomic conditions interact with working capital management. Jha and Mittal (2024) found that firm size and sales growth were both positively and significantly associated with financial performance among Indian SMEs, suggesting that larger and faster-growing firms are better placed to convert their working capital investment into returns, likely because they have easier access to formal credit and stronger bargaining power with both suppliers and customers. Smaller firms, which typically face tighter access to formal credit and higher borrowing costs, tend to be more vulnerable to working capital mismanagement than larger firms with easier access to capital markets. Periods of tight monetary policy or credit contraction, such as India experienced during the NBFC liquidity crisis of 2018-19 and the early phase of the COVID-19 pandemic in 2020, have been shown to increase the importance of working capital discipline, since firms with inefficient cash conversion cycles found themselves particularly exposed when short-term credit became harder to access. Broader financial-system studies, such as Raje, Panicker, and Mishra's (2020) CAMEL-based analysis of Indian public sector banks, also point to a similar theme at the institutional level: sound short-term asset-liability management is consistently linked to stronger overall financial health, whether the unit of analysis is a manufacturing company or a bank.

2.5 Research Gap

While there is no shortage of empirical literature confirming a general inverse relationship between the cash conversion cycle and profitability in the Indian context, much of this research is either dated, sector-specific, or confined to a narrow set of large listed companies. There remains room for research that draws together these findings into a more accessible, sector-comparative discussion, particularly one that can help students, practitioners, and smaller company managers understand the practical implications rather than only the statistical ones. This paper attempts to address that gap by combining a review of the existing literature with illustrative, sector-wise discussion aimed at practical understanding rather than complex econometric modelling.

3. RESEARCH METHODOLOGY

3.1 Research Design

This study adopts a descriptive and analytical research design based entirely on secondary data. It does not involve primary data collection through questionnaires or interviews. Instead, it synthesises findings from existing academic literature, industry publications, and publicly available financial information relating to Indian companies, and uses this synthesis to build an analytical discussion of the relationship between working capital management and profitability.

3.2 Sources of Data

- Peer-reviewed academic journal articles and research papers on working capital management, both international and India-specific, including recent panel-data research on listed Indian SMEs (Jha & Mittal, 2024) and manufacturing-sector studies (Goel & Sharma, 2015).

- Company- and sector-specific finance research, such as Mishra's (2017) study of accounts receivable practices at S. H. Kelkar and Company and Mishra's (2018) analysis of the financial performance of selected automobile companies, used illustratively rather than as a formal statistical sample.
- Reports and commentary from recognised industry and financial bodies, including RBI publications on corporate sector performance.
- Textbooks and reference material on corporate finance and financial statement analysis, including Pandey's Financial Management and Lalkar, Mishra, Tejwani, and Rayate's (2013) Accounting for Business Decisions.

3.3 Variables Considered

The study draws on the following commonly used variables in working capital and profitability research:

Variable	Description	Typical Measure
Cash Conversion Cycle (CCC)	Time taken to convert investments in inventory and receivables into cash, net of the payables period	Days Inventory + Days Receivables − Days Payables
Inventory Conversion Period	Average number of days inventory is held before sale	(Average Inventory / Cost of Goods Sold) × 365
Receivables Collection Period	Average number of days taken to collect payment from customers	(Average Receivables / Credit Sales) × 365
Payables Deferral Period	Average number of days taken to pay suppliers	(Average Payables / Purchases) × 365
Current Ratio	Measure of short-term liquidity	Current Assets / Current Liabilities
Return on Assets (ROA)	Profitability relative to total assets employed	Net Profit / Total Assets
Net Operating Profitability	Core operating profitability before financing effects	Operating Profit / (Total Assets − Financial Assets)

3.4 Method of Analysis

The analysis in this paper is primarily qualitative and comparative in nature. Where illustrative figures are used, they are drawn from typical industry patterns reported in existing literature and are intended to demonstrate the direction and nature of relationships rather than to serve as precise statistical estimates for any individual company. Readers interested in a rigorous statistical treatment, involving regression analysis of panel data drawn from company-level financials, are encouraged to treat this paper as a conceptual foundation for that further quantitative work.

4. WORKING CAPITAL MANAGEMENT: CONCEPTUAL FRAMEWORK

4.1 Meaning and Components

Working capital management refers to the set of policies and decisions that govern a firm's current assets and current liabilities, with the objective of ensuring that the firm has enough liquidity to meet its short-term obligations while not tying up excessive funds that could otherwise be deployed for growth or returned to shareholders. The main components are inventory management, receivables (debtors) management, payables (creditors) management, and cash and bank balance management.

Gross working capital refers to the total investment in current assets, while net working capital is the difference between current assets and current liabilities. A positive net working capital position generally indicates that a firm can comfortably meet its short-term obligations, while a negative position, though sometimes deliberately engineered by firms with strong bargaining power over suppliers and customers (as is common in large retail and FMCG businesses), can indicate either operational efficiency or financial distress, depending on the underlying cause.

4.2 The Cash Conversion Cycle

The cash conversion cycle (CCC) is one of the most widely used measures in working capital research because it captures, in a single number, the net time a company's cash remains tied up in its operating cycle. It is calculated as the sum of the inventory conversion period and the receivables collection period, less the payables deferral period. A shorter cash conversion cycle generally means that a company converts its resources into cash more quickly, reducing its reliance on external financing to fund day-to-day operations. Conversely, a long cash conversion cycle typically means the company must borrow more, or forgo more investment opportunities, to bridge the gap between paying its own suppliers and collecting from its own customers.

4.3 Approaches to Working Capital Policy

Firms generally choose, whether explicitly or by default, one of three broad approaches to working capital policy:

- Conservative approach: The firm maintains high levels of current assets relative to current liabilities, prioritising liquidity and reducing risk, but often at the cost of lower profitability because idle cash and excess inventory earn little to no return.
- Aggressive approach: The firm minimises investment in current assets and relies more heavily on short-term financing, which can boost profitability but increases the risk of liquidity shortfalls if cash flows do not arrive as expected.
- Moderate (matching) approach: The firm attempts to match the maturity of its assets and liabilities, funding permanent working capital needs with long-term sources and only temporary or seasonal needs with short-term borrowing, seeking a balance between risk and return.

Most well-managed Indian companies, particularly larger, listed firms, tend to gravitate towards a moderate approach over time, adjusting more aggressively or conservatively depending on the broader credit environment and the seasonality of their specific industry.

4.4 Why Working Capital Matters More in the Indian Context

- Relatively higher cost of short-term borrowing compared to many developed markets, making inefficient working capital more expensive to carry.
- A business culture in several traditional sectors that favours extended credit terms to distributors and customers, lengthening receivables periods.
- Seasonal demand patterns in agriculture-linked industries and construction materials, requiring careful inventory planning.
- A large base of MSMEs with limited access to formal banking credit, making internally generated working capital especially valuable.
- Periodic liquidity shocks, such as the 2018-19 NBFC crisis and the COVID-19 pandemic, which have repeatedly tested the resilience of Indian corporate balance sheets.

5. SECTORAL ANALYSIS AND DISCUSSION

This section discusses how working capital dynamics typically play out across a few illustrative Indian industry sectors, drawing on patterns commonly reported in existing literature and industry commentary.

5.1 Manufacturing and Auto Components

Manufacturing firms in India, particularly in the automobile components and engineering goods space, typically operate with relatively long cash conversion cycles. These businesses often need to hold significant raw material and work-in-progress inventory to guard against supply chain disruptions, and it is common for original equipment manufacturers (OEMs) to negotiate long payment terms with their component suppliers, effectively pushing working capital strain down the supply chain. For these firms, profitability tends to be closely linked to how efficiently they manage inventory turnover and how effectively they negotiate credit terms both upstream (with suppliers) and downstream (with buyers).

5.2 Fast-Moving Consumer Goods (FMCG)

FMCG companies in India, especially larger, well-established players, generally enjoy a more favourable working capital position. Because their products sell relatively quickly through extensive distribution networks, they tend to have shorter inventory holding periods, and because of the strength of their brands and market position, they are often able to negotiate short credit periods with distributors while securing longer payment terms from their own suppliers. In some cases, this results in a negative cash conversion cycle, meaning the company effectively collects cash from its distribution chain before it needs to pay its own suppliers. This structural advantage tends to support stronger and steadier profitability, all else being equal.

5.3 Pharmaceuticals

The pharmaceutical sector in India occupies something of a middle ground. Domestic formulation businesses typically maintain moderate inventory levels due to regulatory requirements around shelf life and quality testing, and receivables periods can be lengthy, particularly for firms that supply to government hospitals and public procurement programmes, which are often slow to release payment. Export-oriented pharmaceutical companies, on the other hand, tend to face different working capital pressures linked to international regulatory approval timelines and longer shipping and documentation cycles.

5.4 Information Technology and IT-Enabled Services

IT services companies represent something of a special case because they are largely asset-light and carry little to no physical inventory. For these firms, working capital management is almost entirely a matter of receivables management: how quickly they can bill clients and collect payment. Large IT services firms serving global clients often extend 30 to 90-day payment terms, and delays in collection, whether due to disputes, currency conversion processes, or simply large client bureaucracy, can meaningfully affect short-term cash flow even when the underlying business is highly profitable on paper. This illustrates an important point: profitability on the income statement does not automatically translate into strong cash positions if working capital, in this case receivables, is not managed with discipline.

5.5 Comparative Summary

Sector	Typical Working Capital Characteristic	Primary Profitability Driver
Manufacturing / Auto Components	Long inventory and receivables periods	Inventory turnover efficiency
FMCG	Short or negative cash conversion cycle	Distribution speed and supplier terms
Pharmaceuticals	Moderate inventory; variable receivables (public sector delays)	Receivables management with institutional buyers
IT / IT-Enabled Services	Minimal inventory; receivables-driven cycle	Billing and collection discipline

6. FINDINGS

- A shorter cash conversion cycle is consistently associated with stronger profitability across the sectors examined, reinforcing findings from the broader academic literature on this topic.
- Recent Indian panel-data evidence supports this: Jha and Mittal (2024) found a statistically significant negative relationship between the current ratio and both return on assets and return on equity among 226 listed Indian SMEs, indicating that excess liquidity, if not actively deployed, drags on rather than boosts profitability.
- The relationship between working capital components and profitability is not uniform: inventory management matters most in manufacturing, receivables management matters most in services, and a combination of both matters in sectors like pharmaceuticals.
- Indian companies with strong bargaining power over their supply chains, notably in FMCG, are able to convert working capital efficiency into a genuine structural profitability advantage.
- Smaller Indian firms, particularly MSMEs, tend to be disproportionately affected by working capital inefficiency because of their limited access to low-cost external financing to bridge cash flow gaps.
- External shocks, such as credit crises or pandemics, tend to expose weaknesses in working capital management that may not be visible during stable economic periods.
- Working capital efficiency and profitability, while generally positively linked, must be balanced against liquidity risk; an overly aggressive reduction in working capital can improve short-term profitability ratios while increasing the risk of operational disruption.

7. SUGGESTIONS AND RECOMMENDATIONS

7.1 For Indian Companies in General

- Adopt a moderate, matching approach to working capital financing, using long-term sources for permanent working capital needs and short-term facilities only for genuinely seasonal or temporary requirements.
- Invest in inventory management systems and demand forecasting tools to reduce excess stock without risking stockouts, particularly relevant for manufacturing and FMCG firms.
- Strengthen receivables management through clearer credit policies, regular ageing analysis, and, where appropriate, the use of trade credit insurance or bill discounting facilities to convert receivables into cash sooner.
- Negotiate supplier payment terms thoughtfully, balancing the benefit of extended payables against the risk of straining important supplier relationships.

7.2 For Small and Medium Enterprises

- Make greater use of government-backed and bank-led supply chain finance and invoice discounting platforms, such as the Trade Receivables Discounting System (TReDS), to unlock cash tied up in receivables.
- Build simple, regular cash flow forecasting practices, even where formal financial planning resources are limited, to anticipate liquidity gaps before they become urgent.
- Where possible, diversify the customer and supplier base to reduce dependence on a small number of counterparties whose payment behaviour can disproportionately affect the firm's cash position.

7.3 For Policymakers and Financial Institutions

- Continue to expand access to affordable short-term credit for MSMEs, given their outsized vulnerability to working capital shocks.
- Encourage wider adoption of digital invoicing and receivables financing platforms to shorten collection cycles across supply chains.

- Support sector-specific working capital financing schemes for industries with structurally long operating cycles, such as textiles and capital goods.

8. CONCLUSION

Working capital management is not a peripheral, back-office function; it is a genuine determinant of profitability, and the evidence reviewed in this paper, consistent with a wide body of prior research, points clearly towards an inverse relationship between the length of a firm's cash conversion cycle and its profitability. For Indian companies operating in a market characterised by relatively high short-term borrowing costs, seasonal demand patterns, and a business culture that often favours extended trade credit, the stakes attached to working capital decisions are particularly high.

The sectoral discussion in this paper illustrates that there is no single formula for optimal working capital management; the right approach depends heavily on the nature of a firm's operating cycle, its bargaining power with suppliers and customers, and the broader macroeconomic environment. What is consistent, however, is that firms which manage inventory, receivables, and payables with discipline tend to generate stronger and more resilient profitability than those that treat working capital as an afterthought. As India's economy continues to grow and diversify, and as digital financing tools make working capital optimisation increasingly accessible even to smaller firms, there is a genuine opportunity for Indian companies across sectors to treat working capital management as a source of competitive advantage rather than merely a compliance or accounting exercise.

Future research building on this paper would benefit from a more rigorous, quantitative approach, using panel data regression across a larger and more current sample of listed Indian companies, to more precisely estimate the strength of these relationships across industries and over different phases of the economic cycle.

9. REFERENCES

Bhunia, A., & Das, A. (2012). Affiliation between working capital management and profitability. Interdisciplinary Journal of Contemporary Research in Business, 3(9), 957-968.

Deloof, M. (2003). Does working capital management affect profitability of Belgian firms? Journal of Business Finance & Accounting, 30(3-4), 573-588.

Goel, U., & Sharma, A. K. (2015). Working capital management efficiency in Indian manufacturing sector. International Journal of Economics and Business Research, 10(1), 30-45.

Jha, P., & Mittal, S. K. (2024). The nexus between financing pattern, firm-specific factors, and financial performance: Panel evidence of listed SMEs in India. IIMB Management Review, 36, 71-82.

Khan, M. Y., & Jain, P. K. Financial Management: Text, Problems and Cases. McGraw Hill Education.

Lalkar, P., Mishra, U., Tejwani, N., & Rayate, B. (2013). Accounting for business decisions.

Mishra, U. (2017). A study on impact of accounts receivable on working capital and profitability at S. H. Kelkar Ltd Company, Mumbai. International Journal of Research in Finance and Marketing (IJRFM), 7(6), 1-6.

Mishra, U. (2018). Financial performance of selected automobile companies. International Journal of Research in Finance and Marketing (IJRFM), 8(8), 51-58.

Mishra, U. (n.d.). Inflation and its impact on India economy. International Journal of Multifaceted and Multilingual Studies.

Gupta, M., & Mishra, U. (2014). Financial regulatory framework.

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.

Pandey, I. M. Financial Management. Vikas Publishing House, New Delhi.

Raheman, A., & Nasr, M. (2007). Working capital management and profitability: Case of Pakistani firms. International Review of Business Research Papers, 3(1), 279-300.

Raje, H., Panicker, S., & Mishra, U. (2020). Financial analysis of select Indian public sector banks using CAMEL approach. Tathapi, 19(38), 193-212.

Reserve Bank of India. Various publications on corporate sector performance and MSME financing, RBI Bulletin (rbi.org.in).

Sahoo, D. R. (2018). Corporate governance: Need of the hour (Companies Act 2013). International Journal of Management Studies (IJMS), 4(ii).

Sharma, A. K., & Kumar, S. (2011). Effect of working capital management on firm profitability: Empirical evidence from India. Global Business Review, 12(1), 159-173.

Shin, H. H., & Soenen, L. (1998). Efficiency of working capital management and corporate profitability. Financial Practice and Education, 8(2), 37-45.

Ministry of Micro, Small and Medium Enterprises, Government of India. Annual Report and publications on TReDS and MSME credit access (msme.gov.in).

Deepa U. Mishra, P. W., Shwetambari A. Chiwhane, Kajal Adsul, Gauri Sawant, Swati Shende. (2016). Augmented Reality based multipurpose application for 3D interface. *International Engineering Research Journal*, *2*(6), 2211–2213.

Anand Mohan, Dr. U. M., M. Sundararajan. (2022). GREEN COMPUTING: IMPROVISED SUSTAINABILITY WITH LONG TERM VIABILITY. *Journal of Emerging Technologies and Innovative Research (JETIR) Www.Jetir.Org*, *9*(9), 6.

Chaurasiya, S., Shekhar, S., Shariq, S., Chavan, S., & Mishra, D. (n.d.). *ONLINE MARKET SYSTEM BASED ON BIDDING MECHANISM USING AN AI AUCTIONEER*.

Chiwhane, S., Deepa, M., & Shweta, K. (2017). IOT Based Fuel Monitoring for Future Vehicles. *International Journal of Advanced Research in Computer and Communication Engineering*, *6*, 295–297.

Dash, A. S., & Mishra, U. (2024a). Application of NLU based sentiment analysis in the hybrid stock price forecasting model using deep learning model. *2024 IEEE Pune Section International Conference (PuneCon)*, 1–6.

Dash, A. S., & Mishra, U. (2024b). Stock market trend prediction model using deep learning based sentiment analysis of financial data. *2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)*, 1–7.

Deepa Mishra, T. Y. (2017). Secure IOT Based HealthCare System with BSN. *International Engineering Research Journal*, *2*(9), 3208–3011.

Deepak Ranjan Sahoo, P. D. K. (2017). Emotional Intelligence: Managing Stress and Anxiety at work Place. *International Journal Of Multifaceted And Multilingual Studies*, *4*(10), 88–93.

Deepak Ranjan Sahoo, V. D. S. (2019a). A Study of Economic Literacy and sustainable development with context to India. *COSMOS Bi- Annual Referred Journal*, *10*(1), 47–53.

Deepak Ranjan Sahoo, V. D. S. (2019b). A Study of Economic Literacy and sustainable development with context to Pune city. *Scholarly Research Journal for Interdisciplinary Studies*, *7*(41), 382–389.

Deepak Ranjan Sahoo, V. K. J. (2017). DERIVATIVES: A device for Risk Management. *International Journal of Multifaceted and Multilingual Studies*, *4*(Issue: X,).

Dr. Gupta M, Dr. M. U. (2014). *Financial Regulatory Framework*.

Dr. Harshal Raje, Mr. S. P., Dr. Ujjwal Mishra. (2020). Financial Analysis of Select Indian Public Sector Banks using CAMEL Approach. *Tathapi*, *19*(38), 193–212.

Dr. Lalkar P, Dr. M. U., Dr. Tejwani N, Dr. Rayate B. (2013). *Accounting for Business Decisions*.

Dr. Ujjwal M. Mishra, Mr. C. B. (2017). A Comparative risk analysis of Kotak selected focus fund (G) Mutual fund scheme. *Https://Www.Ijrar.Org/Papers/IJRAR19UP003.Pdf*, *3*(3), 4.

Dr. Ujjwal M. Mishra, Mr. N. C. (2018). Financial Performance of Selected Automobile Companies. *International Journal of Research in Finance and Marketing (IJRFM)*, *8*(8), 51–58.

Dr. Ujjwal M. Mishra, Ms. A. K. R. (2019). Risk Analysis of Selected Mutual Fund Scheme. *International Journal of Research and Analytical Reviews (IJRAR)*, *6*(1), 13–19.

Dr. Ujjwal Mishra, A. G. (2017). A Study on Impact of Accounts Receivable on Working Capital and Profitability at S. H. Kelkar Ltd Company, Mumbai. *International Journal of Research in Finance and Marketing (IJRFM)*, *7*(6), 1–6.

Dr. Ujjwal Mishra, C. S. (2014). A Study on Preference of mobile brands among the students in Pune city India. *The International Manager*, *1*(IV), 08.

Dr. Ujjwal Mishra, Dr. I. S. (2015). A Study on HDFC Bank stock price performance for investment decision with the help of technical analysis. *International Journal for Engineering Applications and Technology ; ISSN:2321-8134*, *5*, 289–295.

Dr. Ujjwal Mishra, M. P. N. (2016). A Study on credit risk management and apprisal process at punjab national bank, Nagpur. *International Journal of Multifaceted and Multilingual Studies*, *3*(2), 1–8.

Dr. Ujjwal Mishra, Mr. A. D. (2023). sentiment analysis Using Machine learning for Forecasting Indian Stock Trend: A Brief Survey. *FINANCE: THEORY AND PRACTICE, Vol. 27, No. 6'2023 F I N A N C E T P.F A.R u*, *27*(6), 136–147.

Dr. Ujjwal Mishra, Mr. A. K. (2017). A Study of various ways of tax avoidance and tax envasion in agricultural sector and their effect. *Journal for Research*, *3*(04), 4–8.

Dr. Ujjwal Mishra, Mr. V. P. (2016). Comparative analysis of Birla Sun Life Mutual fund schemes with other asset management company schemes. *International Journal of Engineering and Management*, *6*(1), 241–244.

Mishra, D. (2013). Knowledge Based Context Awareness Network Security For Wireless Networks. *International Journal of Computer Trends and Technology (IJCTT)*, *4*(10), 3751–3757.

Mishra, D., Deshpande, S., Anna, M. G., & Tiwari, A. (2024). Exploring the Ethical Dimensions and Societal Consequences of Affective Computing. *Affective Computing for Social Good: Enhancing Well-Being, Empathy, and Equity*, 91–105.

Mishra, D., & Phansalkar, S. (2025). Blockchain Security in Focus: A Comprehensive Investigation into Threats, Smart Contract Security, Cross-Chain Bridges, Vulnerabilities Detection Tools & Techniques. *IEEE Access*.

Mishra, D. U. (n.d.). Inflation and its Impact on India Economy. *International Journal of Multifaceted and Multilingual Studies, ISSN (Online)*, 2350–0476.

Mishra, D. U., & Kadale, N. K. (2017). Mining Association Rules using R Environment. *International Journal of Computer Applications*, *157*(4).

Mishra, Dr. U. (2013). The role of human resources and the challenges on globalization. *Anveshan IMR's Management Research Journal*, *3*(1), 34–37.

mishra, Dr. U. (2014). A Study on Motivational level of Managers and its impact on performance in Insurance industry at Pune city. *Aarhat Multi Disciplinary Education Research Journal (AMIERJ) Bi Monthly Peer Reviewed Journal*, *2*(4), 103–111.

Mishra, Dr. U. (2015). A Study on Impact of Interest rates and the performance of stock market. *International Journal of Advances in Management, Technology and Engineering Sciences, ISSN 2249-7455*, *4*(12(III)), 28–33.

Mishra, Dr. U. (2016). A study of consumer buying behaviour in organized retail sector: Electronic Industry (Samsung Televisions). *International Journal of Engineering and Management Research*, *6*(2), 401–406.

Mishra, Dr. U. M. (2022). Comparative study on a branding strategy of online ordering and delivery platform of food industry with reference of Zomato and Swiggy. *Journal of Positive Psychology*, *6*(3), 09.

Mishra, U. (2012). Competition and its impact on life insurance corporation of India ltd. *Anveshan IMR's Management Research Journal, ISSN -0976-4186*, *3*(2), 80–82.

Mishra, U. (2013a). A study of work culture and its impact on Life Insurance Corporation of India with reference to Amravati region. *VIIT Research Journal Baramati*, *2*(1), 80–84.

Mishra, U. (2013b). Impact of performance of commodity market on Equity market. *National Conference on The Changing Trends in Indian Capital Market. Sponsored by Indian Council of Social Sciences and Research*, *1*(1), 311–317.

Mishra, U., & Dash, A. S. (2025). A novel approach of stock price forecasting model using NLU-based sentiment analysis and deep learning LSTM model. *Neural Computing and Applications*, 1–30.

Mishra, U. M., & Borole, M. C. (2017). A Comparative Risk Analysis of Kotak Select Focus Fund (G) Mutual Fund Scheme. *Imperial Journal of Interdisciplinary Research*, *3*(3), 4.

Mishra, U. M., & Dash, A. S. (n.d.). The Future of Healthcare Finance with Blockchain: Predictions and Trends. *Decentralized Healing*, 367–392.

Mishra, U. M., & Pawaskar, J. R. (2017). A study of non-performing assets and its impact on banking sector. *Journal for Research*, *3*(1).

Mishra, U. M., & Peerapur, V. (2016). Comparative Analysis of Birla Sun Life Mutual Fund Schemes with other Asset Management Company's Schemes. *International Journal of Engineering and Management Research (IJEMR)*, *6*(1), 241–244.

Mishra, U., & Raje, H. (2019). Fundamental Analysis of selected banks for Investment Decisions. *International Journal of Research in Social Sciences*, *9*(2).

Naik, D. T. (n.d.). *Knowledge Based Network Security Situation Awareness for Computer Networks*.

Phansalkar, S., Mishra, D., Chaube, N., & Sonkamble, R. (2023). Towards adoption of green blockchain with emphasis on blockchain type, consensus protocols, data sharding and smart contracts. *2023 IEEE International Conference on Blockchain and Distributed Systems Security (ICBDS)*, 1–8.

Pol, A., Raje, H., & Mishra, U. (2021). Comparative performance analysis of selected mutual fund schemes in tax saver category. *PalArch's Journal of Archaeology of Egypt/Egyptology*, *18*(7), 2325–2337.

Prof. Deepa Mishra, N. K., Manvi Singh, Mudit Maheshwari. (2023). A Comparative Study of Face Recognition Models for Smart Attendance. *International Journal For Research in Applied Science and Engineering Technology*.

Raje, H., & Mishra, U. (n.d.). *COMPARATIVE PERFORMANCE ANALYSIS OF SELECT MUTUAL FUND SCHEMES IN TAX SAVER CATEGORY*.

Sahoo, D. D. R., and Dr Vaishali Deepak Sahoo. (2026a). *Personal Finance for Millennials & Gen Z: From Broke to Building Wealth.*

Sahoo, D. D. R., and Dr Vaishali Deepak Sahoo. (2026b). *Wealth Begins Within: The Psychology of Money, Meaning, and the Mind.*

Sahoo, D. D. R., and Dr Vaishali Deepak Sahoo. n. d. (2026). *DERIVATIVES AND EQUITY MARKETS: A Comprehensive Academic Book*.

Sahoo, D. R. (2017a). Creative Accounting: A Critical Study. *International Journal of Multifaceted and Multilingual Studies*, *4*(IX).

Sahoo, D. R. (2017b). Emotional Intelligence: Managing Stress and Anxiety at work place. *International Journal of Multifaceted and Multilingual Studies*, *4*(IX).

Sahoo, D. R. (2018). Corporate Governance: Need of the Hour (Companies Act 2013). *International Journal of Management Studies (IJMS)*, *4*(ii).

Sahoo, D. R., & Deepak, S. V. (2024a). Exploring the Ethical Perspectives of Sustainable Finance: A Research Study. In *Advances in Business Strategy and Competitive Advantage* (pp. 119–142). IGI Global.

Sahoo, D. R., & Deepak, S. V. (2024b). Exploring the Nexus of Sustainable Finance: ESG Ethical Framework Practices. In *Ethical Quandaries in Business Practices: Exploring Morality and Social Responsibility* (pp. 253–280). IGI Global.

Sahoo, D. R., & Jagatp, V. K. (2017). IND AS 109: Its impact on Financial Statements. *International Research Journal Of Multidisciplinary Studies*, *3*(12), 1–5.

Sahoo, D. R., & Sahoo, V. D. (2026). Crypto Derivatives Markets: Price Discovery, Volatility Dynamics, Market Efficiency, and DeFi Risk: A Structural Analysis. *Journal of Engineering and Technology Management*, *80*(April-June), 774–799.

Sahoo, V. D., & Sahoo, D. R. (n.d.). Stablecoin Peg Stability, Systemic Risk, and the Architecture of Monetary Fragility: Evidence from Markov Regime-Switching, On-Chain Contagion Networks, and Algorithmic Collapse Dynamics. *Systemic Risk, and the Architecture of Monetary Fragility: Evidence from Markov Regime-Switching, On-Chain Contagion Networks, and Algorithmic Collapse Dynamics*.

Sahoo, V. D., & Sahoo, D. R. (2025a). Promoting inclusivity: Corporate social responsibility in game-based learning and professional employment. In *Game-based education approaches to inclusive business management* (pp. 101–126). IGI Global Scientific Publishing.

Sahoo, V. D., & Sahoo, D. R. (2025b). Prospective of Blockchain in Derivative Markets: An Empirical Review. *Innovations in Blockchain-Powered Intelligence and Cognitive Internet of Things (CIoT)*, 229–252.

Shekhar, S., Chaurasiya, S., & Mishra, D. (n.d.). *Smart Reselling: Leveraging MERN Stack and AI for Intelligent Bidding in E-Commerce*.

Shende, M. A., & Sahoo, D. R. (2021). Talent Management critical implications and Strategic approach reference to employer and employees prospective. *International Research Journal of Management Sociology & Humanities*, *12*(7), 165–174.

Shrihari Chaurasiya, D. U. M., Swarnim Shekhar. (2025). Smart Reselling: Leveraging MERN Stack and AI for Intelligent Bidding in E-Commerce. *International Journal of Advanced Research in Science, Communication and Technology*, *5*, 402–410.

Siddiqui, Dr. U. M., & Irfan, D. (2015). Motivational level of employees and its effects on overall performance in insurance sector. *International Journal of Innovative Research and Preactices*, *3*(2), 43–49.