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For

ONE DAY NATIONAL CONFERENCE

On

RESEARCH AND PRACTICES IN COMMERCE, ACCOUNTANCY, MANAGEMENT, HUMANITIES AND IT FOR SUSTAINABLE DEVELOPMENT

Jointly Organized
by
CITY C. U. SHAH COMMERCE COLLEGE
&
GUJARAT UNIVERSITY AREA ACCOUNTANCY TEACHERS' ASSOCIATION
AHMEDABAD - GUJARAT (INDIA)
(REG. NO.- F/636, DATED-29/10/1977)

Theme

Trends and Challenges in Business Accounting Frameworks

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(OFFLINE MODE)

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Research and Practices in Commerce, Accountancy, Management, Humanities and IT for Sustainable Development

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Jointly Organized by

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This is an International Refereed Monthly research journal which regularly appears in the every month. This multidisciplinary journal publishes research article on vast spectrum of areas including all the major subjects of Humanities, Commerce and Science.

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About the Conference

The conference on "Research Practices in Commerce, Management, Humanities and Information Technology for Sustainable Development" basically focuses on addressing global sustainable challenges by integrating insights from these disciplines. It emphasizes the importance of ethical business practices, corporate social responsibilities and efficient resource management to ensure financial stability, while also protecting the environment. Humanities contribute by promoting critical thinking, cultural awareness and moral responsibility, providing a foundation for sustainable effort. Information technology drives innovation through tools for resource management, data -driven decisions and green technologies. The present conference invites scholars, practitioners and policy makers to share their strategies and insights aiming to achieve a balance between economic growth, environmental conservation and social equity.

About GLS

Founded in 1927, Gujarat Law Society (GLS) is one of the most prominent and long-standing educational institutions in Gujarat. It was established by distinguished figures including Shri Sardar Vallabhbhai Patel, Shri Ganesh Mavlankar, the nation's first Speaker, and Shri I.M. Nanavati, with a commitment to educational excellence. GLS has been a trailblazer from the start, offering a diverse range of programs in fields such as Business Management, Computer Science, Engineering, and Applications, Commerce, Business Administration, Education, Law, and Humanities. The courses provided by GLS are highly regarded, both among students and within the corporate sector.

About the College

City Commerce College affiliated to Gujarat University, was founded in 1966. The college was given its name, City C.U. Shah Commerce College on the name of the donar Shri Chimanlal Ujamshibhai Shah in 1970. Since 2010, the College is known as CITY C.U.SHAH COMMERCE COLLEGE. We provide quality education to the students of middle class who choose the best education. The college with morning classes proves to be a real boon for the working class students.

About Gujarat University Area Accountancy Teachers' Association

GUAATA is registered association and is formed by the experts of the accountancy field 45 years back. The objective of the Association is exclusively confined to academic activities in the field of Taxation and Accountancy. This association has membership of more than 1000 members. The territory of members is spread out from Kutch district to Dahod district and from Ahmedabad district to Banaskantha district. The role of association is to form informal syllabus for university in the subjects of Taxation and Accountancy, to organise workshops for training of new syllabus formed, to organise state level, National level and International level Seminars and Conferences. In past quality based good numbers of seminars, Conferences and Workshops are organised by the association. This association has its own journal "Communique" were research papers of young and senior professors are published and best papers are awarded prize.

Themes & Sub-themes

Theme 1: Trends and Challenges in Business Accounting Frameworks

- Corporate Governance and Sustainability
- Digital Transformation in Accounting
- Cyber Security in Financial Reporting
- Risk Management and Reporting
- Reforms in Direct and Indirect Taxation
- Sustainable Supply Chain Accounting
- Cloud Accounting
- Environmental Accounting and Reporting
- Carbon Accounting and Reporting
- Forensic Accounting and Fraud Detection
- Sustainable Financial Instruments

Theme 2: Innovative Approaches to Sustainable Economic Administration

- Public-Private Partnerships for Sustainability
- Digital Transformation for Sustainable Economic Practice
- Climate Change Adaptation in Economic Policy
- Green Finance and Investment Strategies
- Sustainable Debt Financing and Green Bonds
- Development and Challenges of the GIG economy
- Sustainable Public Finance and Fiscal Policy

Theme 3: Innovations and Challenges in Business and Management for Sustainable Development

- Corporate Social Responsibility (CSR)
- Resilience in Business Management
- Sustainable Supply Chain Management
- Green Innovation and Technology
- Employee Engagement in Sustainability
- Green Human Resource Management
- Sustainable Business Models and Value Creation
- Hospitality Management Practices
- Sustainable Leadership
- Resilience in Business Management
- MSME and Start-up Environment
- Challenges for Businesses in Implementing Sustainable Supply Chains

Theme 4: Trends and Challenges in Humanities for Sustainable Development

- Cultural Heritage and Sustainability
- Environmental Ethics and Philosophy
- Language, Communication, and Sustainability

- Art, Aesthetics, and Ecological Consciousness
- Education for Sustainable Development
- Human Rights and Environmental Justice
- Narratives of Climate Change
- Urban Humanities and Sustainable Cities
- Globalization, Migration, and Sustainability
- Peace, Conflict Resolution, and Sustainable Development
- Digital Humanities and Environmental Change
- Religion, Spirituality, and Sustainability
- Public Policy, Governance, and Humanities

Theme 5: IT Practices and Challenges for Sustainable Development

- Green Fintech
- Cyber Security for Sustainable Innovations
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- Tech-Enabled Circular Economy
- Block chain for Supply Chain Transparency
- Cloud Computing for Sustainability
- Internet for things (IOT) for smart management
- Big Data Analytics for Sustainable Business Practices
- Cyber Security for Data Protection and Privacy
- Challenges in Promoting Digital education and training for Sustainable IT Practices

Theme 6: NEP 2020 and its relevance, challenges and remedies for Commerce Education

- A comparative study of different state universities on curriculum of commerce faculty
- A comparative study of different private universities on curriculum of commerce faculty
- A comparative study of state and private universities on curriculum of commerce faculty
- Role of Gujarat Government and its agencies on curriculum of commerce faculty
- Futuristic approach of research work in commerce faculty
- A critical analysis on UG and PG structure of commerce faculty
- An evaluative study on implementation of NEP in commerce faculty by universities
- Role of universities for successful implementation of NEP in commerce faculty
- NEP and Skill development in Commerce education: Opportunities, challenges and remedies
- NEP and Multidisciplinary Education in Commerce: Opportunities, challenges and remedies

MESSAGE

It is a matter of great pleasure and pride for me to learn that City C. U. Shah Commerce College, one of our premiere colleges in the city area, is organizing a National Conference on "Research & Practices in Commerce, Management, Humanities, and Information Technology for Sustainable Development" on the 01st of March, 2025. Just as the world has been gifted with nine gems from Samudramanthan, I wish in the same way new directions and vistas of knowledge are opened from this national conference.

I wish all the very best to Dr. Prashant Jariwala, Administrative-in-Charge, and the entire team for the success of the conference.

Gujarat Law society has always encouraged and supported such academic endeavours in the past and will continue to support in future also.

Blessings,

Dr. Sudhir Nanavati
Executive Vice President
Gujarat Law Society, Ahmedabad

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CLOUD ACCOUNTING PRACTICES IN THE BANKING INDUSTRY IN INDIA

By
Dr. Bhavik P. Parmar
Adhyapak Sahayak (Commerce & Accountancy)
Smt. J.J. Kundalia Arts, Commerce College, Rajkot.

Abstract

This paper explores the evolution and adoption of cloud accounting practices in the banking industry in India. As the country experiences rapid technological advancements, the banking sector is leveraging cloud technologies to enhance operational efficiency, reduce costs, and improve service delivery. This paper examines how cloud accounting has transformed the banking industry in India, identifies challenges and opportunities, and provides an in-depth analysis of its impact on financial operations, security, and customer experience.

Key Words: Cloud Accounting, Banking Industry, Public Sector, Private Sector.

Introduction

The banking industry in India is undergoing significant transformation with the integration of advanced technologies such as cloud computing. Cloud accounting, a branch of accounting that involves the use of cloud-based software to record and manage financial transactions, has gained traction due to its numerous advantages, including real-time access, scalability, and cost-efficiency. As the Indian banking sector embraces digital transformation, cloud accounting practices are playing an essential role in reshaping the landscape of financial management.

Cloud accounting has revolutionized how banks handle data storage, reporting, auditing, and financial analysis. The increasing demand for efficient, secure, and accessible financial systems has prompted many banks to adopt cloud-based solutions to streamline their accounting operations. With the adoption of cloud technologies, banks can integrate accounting systems across various departments and branches, ensuring consistent and accurate financial information in real-time.

This paper delves into the current state of cloud accounting practices in the Indian banking industry, highlighting the benefits, challenges, and future prospects of this technological advancement.

Literature Review

Cloud Computing in the Banking Industry

Cloud computing involves the delivery of computing services such as storage, processing power, and software over the internet. It allows organizations to access these services on-demand without investing heavily in on-premise infrastructure. In the banking sector, cloud computing offers several advantages, including cost savings, scalability, flexibility, and improved disaster recovery. According to a study by Ghosh & Bhattacharya (2019), banks in India are increasingly adopting cloud-based solutions to enhance their operational efficiency and reduce costs.

Cloud accounting, specifically, involves the use of cloud-based software to manage financial transactions, maintain accounting records, and generate financial reports. The rise of cloud accounting has been driven by the need for automation, accuracy, and timely reporting in financial operations. According to Kumar (2020), the adoption of cloud accounting has led to improved financial management, reduced manual errors, and enhanced compliance in the banking sector.

Adoption of Cloud Accounting by Indian Banks

India’s banking sector has witnessed significant adoption of cloud computing over the last decade, especially with the introduction of initiatives like Digital India and the push for financial inclusion. Leading banks such as HDFC, ICICI, and State Bank of India (SBI) have begun migrating their financial operations to the cloud. As per a report by PwC India (2021), over 70% of Indian banks

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are either in the process of migrating or have fully migrated their accounting operations to cloud-based platforms.

The shift towards cloud accounting has been largely driven by the need for cost optimization, as traditional on-premise accounting systems require significant investments in hardware, software, and maintenance. Cloud-based accounting platforms, such as QuickBooks, Xero, and SAP, offer subscription-based pricing, allowing banks to scale their services according to demand while minimizing upfront investments.

Benefits of Cloud Accounting in the Banking Industry

Cloud accounting offers several advantages to banks, including:

- Cost Efficiency: Cloud accounting reduces the need for banks to maintain expensive IT infrastructure and servers. Banks can pay for only the resources they use, thus optimizing operational costs.
- Real-Time Data Access: With cloud accounting, financial data can be accessed in real-time, enabling banks to make quick and informed decisions.
- Scalability: Cloud platforms allow banks to scale their accounting operations as needed, making them more adaptable to changing business requirements.
- Security and Disaster Recovery: Many cloud providers offer enhanced security features, such as encryption and multi-factor authentication, ensuring that sensitive financial data is secure. Furthermore, cloud-based systems are equipped with disaster recovery mechanisms, reducing the risk of data loss.
- Integration with Other Systems: Cloud accounting allows seamless integration with other banking systems, such as payment platforms, CRM systems, and regulatory compliance tools.

Challenges in Implementing Cloud Accounting in Indian Banks

While cloud accounting presents numerous benefits, several challenges must be addressed for successful implementation in the banking sector:

- Data Privacy and Security: The sensitive nature of financial data in the banking industry requires stringent security protocols. There are concerns regarding data breaches and unauthorized access to financial records stored on the cloud.
- Regulatory Compliance: Indian banks must adhere to several regulatory requirements, including those set by the Reserve Bank of India (RBI) and the Securities and Exchange Board of India (SEBI). Compliance with these regulations can be complex when adopting cloud accounting solutions.
- Integration with Legacy Systems: Many banks in India still rely on legacy systems for their accounting operations. Migrating from these systems to cloud-based platforms can be a time-consuming and costly process.
- Technical Expertise: Successful adoption of cloud accounting requires skilled professionals with expertise in cloud technologies and accounting practices. There is a shortage of such talent in the Indian banking sector.

Methodology

This research utilizes a qualitative approach, including an extensive review of existing literature, industry reports, and case studies of Indian banks that have implemented cloud accounting practices. Additionally, interviews with banking professionals and experts in cloud computing and accounting were conducted to gain insights into the practical challenges and benefits of cloud accounting in the Indian banking industry.

The study focuses on examining the adoption process, key drivers, and barriers to implementing cloud accounting within banks, as well as its impact on operational efficiency, security, and customer experience.

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Findings and Discussion

Adoption Trends in Indian Banks

The research reveals that the adoption of cloud accounting in Indian banks is accelerating, with both private and public sector banks investing heavily in cloud infrastructure. Banks are adopting cloud accounting to improve financial reporting, streamline operations, and enable better compliance with regulatory requirements.

Larger banks like ICICI and HDFC have integrated cloud-based accounting systems across their operations, allowing for enhanced reporting, better risk management, and more efficient handling of large volumes of financial transactions. Smaller banks, however, face challenges related to budget constraints and technical expertise, slowing their cloud adoption.

Benefits Realized by Banks

Indian banks that have adopted cloud accounting practices report significant improvements in operational efficiency. Real-time access to financial data has allowed for quicker decision-making and enhanced collaboration across different departments. Additionally, the scalability of cloud platforms has enabled banks to manage peak loads, especially during periods of high transaction volume.

For example, the State Bank of India has integrated cloud accounting with its core banking system, which has reduced the time taken to prepare financial statements and improved accuracy in accounting processes.

Challenges in Adoption

Despite the clear advantages, several banks have faced challenges in fully transitioning to cloud accounting systems. The primary challenges include concerns over data privacy and security. The shift to the cloud requires banks to trust third-party service providers, which raises questions about how secure their financial data is.

Additionally, compliance with RBI guidelines and the integration of cloud accounting with existing legacy systems remain significant hurdles. Many smaller banks are also grappling with the lack of technical expertise required to manage complex cloud environments.

Conclusion

Cloud accounting is revolutionizing the banking industry in India, offering numerous benefits such as improved efficiency, cost reduction, and real-time data access. While the adoption of cloud accounting practices is gaining momentum, there are challenges that need to be addressed, including data security, regulatory compliance, and technical expertise.

The future of cloud accounting in Indian banks appears promising, as financial institutions increasingly realize the potential of cloud technologies to drive innovation and enhance customer experience. As the Indian banking sector continues to digitize, cloud accounting will likely play a crucial role in shaping the future of financial management.

Recommendations

Based on the findings of this research, the following recommendations are made for Indian banks considering the adoption of cloud accounting practices:

- Strengthen Data Security Protocols: Banks should invest in robust data security measures to mitigate concerns related to cloud data breaches.
- Improve Regulatory Frameworks: Regulatory bodies like the RBI should create clear guidelines and standards for cloud accounting adoption to ensure that banks remain compliant.
- Invest in Talent Development: Banks should focus on training and developing in-house expertise in cloud accounting systems and technologies.
- Collaborate with Trusted Cloud Providers: Banks should collaborate with reputable cloud service providers that comply with local regulations and have a track record of providing secure and scalable solutions.

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NAVIGATING IFRS IMPLEMENTATION: INSIGHTS INTO CHALLENGES AND OPPORTUNITIES FOR INDIAN BUSINESSES

By
CA Vatsal Jayeshbhai Shah
Ph.D. Scholar
JG University, Ahmedabad, Gujarat

Abstract

The adoption of International Financial Reporting Standards (IFRS) has become a pivotal step for Indian businesses seeking to align their financial reporting practices with global standards. As companies expand their operations beyond national borders, IFRS provides a unified framework that enhances transparency, comparability, and consistency in financial statements. However, the transition from Indian Generally Accepted Accounting Principles (Ind AS) to IFRS presents several challenges, including differences in accounting policies, system upgrades, and the need for specialized knowledge. This paper explores the significance of IFRS for Indian businesses, examining both the challenges and opportunities presented by its implementation. It also provides actionable recommendations for a smooth transition, emphasizing the importance of training, external expertise, phased implementation, and robust governance frameworks. By adopting IFRS, Indian businesses can not only enhance their financial reporting practices but also improve their global competitiveness, foster investor confidence, and gain access to international markets.

Keywords: International Financial Reporting Standards (IFRS), Indian Businesses, Financial Reporting, Global Economy, Financial Transparency, Ind AS, Accounting Practices

Introduction

International Financial Reporting Standards (IFRS) are a set of globally recognized accounting standards developed to bring uniformity, transparency, and comparability to financial statements. These standards are issued by the International Accounting Standards Board (IASB), an independent organization based in London. IFRS is designed to provide a common accounting language that allows businesses and investors across different countries to understand and compare financial statements effectively. It aims to enhance global economic stability by fostering trust and consistency in financial reporting. The adoption of IFRS has been instrumental in bridging the gap between various national accounting standards, which often lead to discrepancies in financial interpretations. For companies operating across borders, IFRS eliminates the need to prepare multiple sets of financial statements to comply with different regulations in various jurisdictions. This standardization facilitates smoother cross-border investments, mergers, and acquisitions, allowing stakeholders to make informed decisions based on comparable financial information.

One of the key characteristics of IFRS is its principles-based approach. Unlike rigid rules, IFRS relies on broad principles that provide guidance for interpreting complex financial transactions. This approach offers flexibility for businesses to reflect their unique circumstances while maintaining transparency. However, it also requires accountants and auditors to exercise significant professional judgment, which underscores the need for expertise in its application. Currently, IFRS has been adopted or allowed in over 140 countries, including major economies such as the European Union, Australia, and Canada. While the United States uses Generally Accepted Accounting Principles (US GAAP), there has been ongoing collaboration between IASB and the Financial Accounting Standards Board (FASB) to achieve convergence between IFRS and US GAAP. This global adoption underscores IFRS's role as a cornerstone for financial reporting in a connected world economy.

In the Indian context, the adoption of IFRS has taken the form of Ind AS (Indian Accounting Standards), which are closely aligned with IFRS but adapted to reflect specific domestic requirements.

This alignment has enabled Indian businesses to present their financial results on a global platform, attracting foreign investment and boosting their competitiveness. Overall, IFRS represents a significant shift in the landscape of financial reporting, encouraging transparency and fostering trust among stakeholders. Its adoption signals a commitment to global best practices, paving the way for enhanced economic collaboration and growth.

Literature Review

Smith (2019) examined the transition challenges faced by developing countries in adopting IFRS. The study found that the complexity of IFRS standards posed a significant barrier for accountants and auditors who were accustomed to local GAAP. Additionally, the lack of sufficient training and expertise in IFRS created inconsistencies in financial reporting.

Brown and Taylor (2020) highlighted that one of the major challenges in IFRS adoption is the high cost of implementation. The study reported that businesses, especially small and medium enterprises (SMEs), struggle with costs related to system upgrades, consultancy fees, and employee training. The authors also noted that IFRS compliance often requires significant changes in accounting policies, which can lead to temporary disruptions in financial reporting.

Nguyen et al. (2021) studied IFRS adoption in Asian markets and found that cultural differences play a crucial role in hindering the uniform application of IFRS. The study revealed that countries with strong state-controlled economies found it difficult to implement fair value accounting principles as required by IFRS, leading to discrepancies in financial statements.

Kumar and Patel (2022) explored regulatory and legal challenges associated with IFRS adoption in India. The study found that the transition to IFRS was hindered by overlapping regulations, resistance from stakeholders, and the need for frequent amendments to the legal framework. Additionally, the authors pointed out that auditors faced difficulties in interpreting IFRS provisions in cases where there was a lack of precedent or guidance.

Hassan and Williams (2023) identified data comparability as a major challenge when transitioning from local GAAP to IFRS. Their research showed that differences in accounting estimates, depreciation methods, and financial statement structures created significant challenges in comparing financial performance across different jurisdictions.

Johnson (2019) emphasized the increased transparency and comparability of financial statements as one of the biggest advantages of IFRS. The study found that companies adopting IFRS experienced improved investor confidence due to enhanced disclosure requirements and standardization in reporting practices.

Chen and Li (2020) explored the impact of IFRS on foreign direct investment (FDI) and found that countries with IFRS adoption experienced a 15% increase in FDI inflows. The authors attributed this to the greater trust that international investors place in IFRS-compliant financial statements, which offer more reliable and standardized financial information.

Alvarez and Gomez (2021) studied IFRS adoption in European firms and found that companies benefited from improved access to global capital markets. The research highlighted that firms listed on multiple stock exchanges found it easier to comply with international regulatory requirements due to IFRS adoption.

Singh and Mehta (2022) examined how IFRS affects earnings management and found that companies operating under IFRS showed reduced earnings manipulation compared to those using local GAAP. The authors noted that stricter disclosure requirements and fair value accounting principles made it more difficult for firms to engage in aggressive accounting practices.

Wilson and Carter (2023) focused on the role of IFRS in enhancing financial statement credibility for multinational corporations. Their study found that IFRS adoption facilitated smoother cross-border mergers and acquisitions due to standardized financial reporting, reducing the risks associated with financial misrepresentation.

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Importance of IFRS for global financial harmonization

The importance of IFRS (International Financial Reporting Standards) for global financial harmonization lies in its ability to bring consistency, transparency, and comparability to financial reporting across countries. As businesses and economies become more interconnected in a globalized world, having a unified set of accounting standards is essential to facilitate international trade, investment, and financial analysis. IFRS plays a central role in creating a standardized framework for financial reporting, making it easier for stakeholders to understand and compare financial statements regardless of geographic location. One of the core objectives of IFRS is to eliminate the discrepancies that arise from the use of different national accounting standards. Before the widespread adoption of IFRS, companies operating in multiple countries had to prepare multiple sets of financial statements in accordance with the specific accounting rules of each jurisdiction. This led to complexity, increased costs, and a lack of comparability in financial reporting. By adopting IFRS, companies now use a common language for financial reporting, reducing the need for adjustments when dealing with international transactions or consolidating financial statements across borders. This uniformity enhances the reliability and accuracy of financial data, which is crucial for making informed decisions in a global marketplace.

For investors and analysts, IFRS provides a level playing field by offering a consistent basis for evaluating companies worldwide. Global investors are often involved in portfolios with companies from different countries, and the ability to compare financial statements based on the same standards is a significant advantage. With IFRS, investors can make more accurate assessments of risk, profitability, and financial health, leading to better-informed decisions and increased investor confidence in international markets. This consistency helps attract global capital flows, as investors are more likely to invest in companies that adhere to widely accepted reporting standards.

IFRS also promotes transparency, which is essential for maintaining trust in the financial markets. The standards require companies to disclose detailed and clear information about their financial performance and position, making it easier for regulators, analysts, and investors to understand the risks and opportunities inherent in a business. The increased transparency provided by IFRS helps reduce the likelihood of financial fraud, manipulation, or misstatement, which in turn supports the stability of global financial markets.

Moreover, the harmonization of financial reporting standards through IFRS facilitates smoother cross-border transactions, mergers, and acquisitions. When companies engage in cross-border trade or consider entering new markets, they need to understand the financial health of potential partners. IFRS ensures that financial statements from companies in different countries are comparable, thereby simplifying the due diligence process. It also helps reduce the complexity and costs involved in cross-border mergers and acquisitions, as companies do not have to reconcile multiple sets of financial data using different accounting systems. In addition, IFRS enhances the overall stability of the global financial system. By ensuring that companies provide accurate and comparable financial information, IFRS reduces the chances of misrepresentations or accounting irregularities that could lead to financial crises. As global financial markets become increasingly integrated, the need for a harmonized reporting framework becomes more critical in fostering investor trust and maintaining market stability.

Challenges in IFRS Implementation for Indian Businesses

The implementation of International Financial Reporting Standards (IFRS) presents a range of challenges for Indian businesses, despite the significant benefits it offers in terms of financial transparency, comparability, and global competitiveness. Transitioning to IFRS requires not only technical adjustments but also changes in organizational culture, systems, and processes. These challenges can be broadly categorized into technical, financial, operational, and regulatory issues.

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Technical and Operational Challenges

One of the primary difficulties faced by Indian businesses in IFRS implementation is the complexity of the standards themselves. IFRS is principles-based, requiring a thorough understanding of accounting concepts and their application across various transactions. For many Indian companies, especially those with limited experience in international accounting practices, adapting to the intricate details of IFRS can be daunting. This is particularly true for complex financial instruments, revenue recognition, lease accounting, and fair value measurements, where there are significant differences compared to the previous Indian Accounting Standards (Ind AS). Companies may struggle with interpreting and applying these standards in a manner that aligns with their business operations. Additionally, businesses may need to overhaul their existing accounting systems to accommodate the new requirements of IFRS. This could involve upgrading or replacing accounting software, which can be both time-consuming and expensive. Financial reporting systems must be able to generate IFRS-compliant statements, and this often requires substantial modifications to the existing infrastructure. Integrating IFRS into the company's day-to-day operations, particularly in organizations with decentralized operations or those in industries with unique reporting needs, can prove to be a major operational hurdle.

Cost-Related Challenges

The transition to IFRS is a resource-intensive process. The initial costs can be quite high, especially for small and medium-sized enterprises (SMEs) in India that may not have the financial capacity to absorb such expenses. Businesses need to invest in employee training, system upgrades, and external consultancy services to ensure a smooth transition. Many companies may have to hire specialized IFRS experts or consultants to guide them through the process of implementation and ongoing compliance. For businesses with limited internal expertise in global financial reporting, these costs can be substantial and may strain their resources. Moreover, once IFRS is implemented, there are ongoing costs related to maintaining compliance, including training staff to stay updated on changes in IFRS standards, upgrading systems as necessary, and conducting regular audits to ensure adherence to IFRS principles. For SMEs, this financial burden can be particularly challenging, as they may lack the resources to manage both the transition and the continuous compliance requirements.

Cultural and Organizational Resistance

In many Indian companies, particularly in family-owned businesses, there may be resistance to adopting IFRS due to a lack of familiarity with international financial reporting standards. Employees accustomed to traditional accounting practices may be reluctant to change, and management may be hesitant to invest time and money into a process they view as complex or unnecessary. This resistance can slow down the implementation process, leading to delays and inefficiencies. Incorporating IFRS into the organizational culture requires significant shifts in mindset. Companies will need to ensure that their teams—ranging from finance staff to senior management—are fully onboard with the transition and understand the strategic importance of adopting globally recognized standards. Effective change management strategies, including training programs and clear communication about the benefits of IFRS, are crucial to overcoming this resistance.

Regulatory and Legal Challenges

In India, the implementation of IFRS must be aligned with the country's regulatory framework, which is governed by the Institute of Chartered Accountants of India (ICAI) and other bodies such as the Ministry of Corporate Affairs (MCA). While the adoption of IFRS in India has been facilitated through the introduction of Indian Accounting Standards (Ind AS), which closely mirror IFRS, there remain some regulatory differences. The divergence between IFRS and Indian tax laws, for example, can create difficulties in reconciling financial reporting for tax purposes. Certain areas, such as the treatment of certain assets or liabilities, can also be contentious when aligning IFRS with Indian regulations.

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Companies may face challenges when reconciling IFRS-based financial statements with local tax laws, which may still be based on more traditional accounting methods. This regulatory misalignment can lead to confusion and inefficiencies, particularly when calculating taxes, depreciation, or deferred tax assets and liabilities.

Sector-Specific Challenges

Different sectors in India face unique challenges when implementing IFRS. For example, the banking sector must address complexities surrounding financial instruments, loan provisions, and derivatives, which require careful interpretation under IFRS. Real estate companies may face challenges related to the recognition of revenue from property development projects, which is treated differently under IFRS compared to Indian standards. The IT sector, which often deals with intellectual property, software revenue, and long-term contracts, may struggle with the application of IFRS's revenue recognition principles. Each industry has its own set of complexities when adopting IFRS, and businesses in these sectors will require customized strategies to ensure compliance. Failure to address sector-specific challenges may result in misreporting or financial misstatements, undermining the benefits of IFRS adoption.

Opportunities Presented by IFRS Implementation

The implementation of International Financial Reporting Standards (IFRS) offers a multitude of opportunities for Indian businesses, particularly in terms of global competitiveness, access to international markets, improved financial transparency, and enhanced investor confidence. As the global economy becomes more interconnected, the ability to align with international financial reporting standards opens up new avenues for growth and collaboration for businesses operating in India. Below are some of the key opportunities that IFRS presents:

Enhanced Global Competitiveness

One of the most significant opportunities presented by IFRS implementation is the ability for Indian businesses to compete more effectively in the global marketplace. As businesses expand their operations internationally or seek foreign investment, having financial statements that adhere to internationally recognized standards like IFRS is essential. By adopting IFRS, Indian companies can present their financial position and performance in a globally accepted format, which facilitates comparability and boosts their credibility among international investors, partners, and stakeholders. This enhanced competitiveness can help Indian firms attract new business, expand into international markets, and secure partnerships with foreign companies.

Increased Access to Global Capital Markets

IFRS adoption can significantly ease the process of accessing global capital markets, including international equity and debt markets. Investors, financial analysts, and credit rating agencies prefer standardized financial reporting that is clear, transparent, and comparable across borders. By reporting under IFRS, Indian businesses can appeal to a broader range of investors, including those from developed markets where IFRS is the norm. This helps reduce the barriers to raising capital internationally, whether through public offerings, private placements, or accessing lower-cost financing. For businesses seeking to diversify their sources of funding, IFRS compliance opens doors to a larger pool of international investors.

Improved Financial Transparency and Accuracy

IFRS enhances the transparency of financial statements by requiring companies to disclose comprehensive and detailed information about their financial activities. This level of transparency helps build trust with investors, creditors, and other stakeholders. In a market like India, where financial reporting practices may have lacked consistency in the past, IFRS adoption can improve the accuracy and

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reliability of financial reporting, reducing the risk of misstatements and fraud. Accurate financial reporting also leads to better decision-making, as stakeholders can rely on clear and comparable data to assess the company's financial health and performance.

Easier Cross-Border Mergers and Acquisitions

For Indian companies considering mergers, acquisitions, or joint ventures with foreign entities, IFRS compliance offers a significant advantage. One of the biggest hurdles in cross-border M&A transactions is reconciling financial statements prepared according to different accounting standards. However, with both the Indian company and the foreign entity reporting under IFRS, this reconciliation process becomes simpler and more efficient. It enhances the quality and transparency of financial information, helping both parties make informed decisions during negotiations. As a result, IFRS adoption makes Indian businesses more attractive to potential international partners and increases the likelihood of successful cross-border deals.

Strengthened Investor Confidence

Investors increasingly demand high levels of transparency and consistency in financial reporting. By adopting IFRS, Indian companies can gain greater confidence from investors, as these standards are known for providing clear insights into a company's financial performance, cash flow, and risks. The uniformity of IFRS reduces the risk of misinterpretation and makes it easier for investors to compare financial statements across companies, regardless of their geographical location. As a result, companies that adopt IFRS are more likely to see an increase in investor interest, potentially leading to an appreciation of their stock prices, enhanced market capitalization, and access to additional funding opportunities.

Improved Corporate Governance Practices

The principles-based nature of IFRS encourages companies to focus on the economic substance of transactions rather than merely their legal form. This emphasis on transparency and accuracy helps improve corporate governance practices by holding companies accountable for their financial reporting. With IFRS, Indian businesses are required to provide a more comprehensive and detailed view of their financial health, including the risks they face, contingent liabilities, and off-balance-sheet arrangements. This increased accountability fosters better management practices, discourages financial misreporting, and strengthens overall governance structures, making companies more attractive to investors, regulators, and other stakeholders.

Better Risk Management and Strategic Decision-Making

IFRS's comprehensive approach to financial reporting allows businesses to gain a clearer and more detailed view of their risks. By adopting IFRS, companies are required to recognize and disclose a range of financial risks, including credit, liquidity, and market risks. This transparency in risk reporting enables businesses to make more informed decisions when it comes to managing their financial risks, whether it's through hedging strategies, capital management, or operational changes. With a clearer understanding of financial risks, businesses can implement more effective risk management strategies and make better strategic decisions.

Alignment with Global Best Practices

By adopting IFRS, Indian businesses align their financial reporting with the best practices followed by organizations around the world. This not only helps them stay competitive but also enhances their reputation. Companies adhering to globally recognized standards are often viewed as more professional, transparent, and trustworthy. This alignment with global standards can be particularly beneficial for Indian companies operating in industries like finance, technology, and manufacturing,

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where global best practices play a significant role in driving business success and attracting international clients.

Streamlined Internal Processes

The transition to IFRS often requires businesses to reassess and streamline their internal financial reporting processes. This could lead to more efficient systems for tracking, analysing, and reporting financial data, which can result in cost savings and improved operational efficiency. By adopting standardized accounting practices, businesses can reduce the complexity of managing multiple sets of financial statements, especially if they are involved in international operations. The internal alignment of financial reporting also helps improve coordination across departments and subsidiaries, facilitating smoother operations and faster decision-making.

Competitive Advantage in International Markets

In a globalized world, companies that can adapt to international accounting standards gain a competitive edge. Indian companies that implement IFRS early can distinguish themselves from their competitors who continue to use domestic accounting standards. This early adoption allows businesses to demonstrate their commitment to global standards and increase their credibility with international stakeholders. Furthermore, companies that are ahead in IFRS adoption can position themselves as leaders in their respective industries, fostering stronger relationships with international partners and clients.

Conclusion

The implementation of IFRS presents both significant challenges and promising opportunities for Indian businesses. While the transition may initially seem complex, it offers long-term advantages, including enhanced global competitiveness, improved access to international capital markets, better financial transparency, and stronger investor confidence. Indian businesses that adopt IFRS are better positioned to operate in an increasingly interconnected global economy, meet the demands of international investors, and streamline their internal processes. To ensure a smooth transition, companies must take a strategic and well-planned approach. This includes conducting a gap analysis, investing in the necessary training and systems upgrades, engaging external experts, and fostering a culture of change management within the organization. A phased implementation approach, along with continuous monitoring and review, will help businesses adapt to IFRS without overwhelming their resources. Ultimately, the adoption of IFRS will not only bring Indian businesses in line with global best practices but also provide them with a competitive edge in the international market. By embracing IFRS, companies can improve their financial reporting standards, unlock new growth opportunities, and enhance their global visibility, thereby positioning themselves for long-term success in a rapidly evolving financial landscape.

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THE REACTION OF STOCK PRICES TO BONUS SHARE ANNOUNCEMENTS IN THE INDIAN CAPITAL MARKET: AN EMPIRICAL STUDY

By
Dr. Jigneshbhai Bavchandbhai Togadiya
Adhyapak Sahayak
City C.U. Shah Commerce College, Lal Darwaja

Abstract

The Reaction of Stock Prices to Bonus Share Announcements in the Indian Capital Market is the study's title. Stock from six distinct companies and six different industries was taken for the study.Ten days prior to and ten days following bonus announcements are the research periods for each companies. The study examined the mean return, standard deviation, and stock volatility. Since T test was appropriate for calculating return both before and after bonus announcements, it was utilized to test the hypothesis. The null hypothesis states that following bonus announcements, there is no change in return. It was discovered that Reliance Industries Limited, NBCC (India) Limited, RITES Limited, Central Depository Services (India) Ltd, Hindustan Petroleum Corp Ltd, show no significant difference in share returns following bonus announcements. With the exception of Inox Wind Ltd, show significant difference in share returns following bonus announcements. Overall, the result reveals that Indian Stock market does not react to bonus share issue announcement. Thus, this paper contributes to the fact that there is no significant effect on stock price when a company announces the issue of bonus shares.

Key Words: Bonus announcement, Stock Returns, Mean return, standard deviation etc.

Introduction

A bonus issue is also known as a stock or scrip dividend. It is a corporate action where a company issues additional shares to its existing shareholders at no extra cost. These additional shares are allocated in a fixed ratio to the shares already owned. Rather than drawing additional investments, a bonus issue capitalizes on the company's retained earnings to increase the number of shares in circulation, which can potentially make the stock more accessible due to a lower per-share price. This is a strategy used primarily to reward shareholders and can signal confidence in the company's prospects.

For example, a company might announce a bonus issue with a ratio of 1:5, meaning each shareholder receives one additional share for every five shares they own. This action increases the total number of shares issued, thereby diluting the share price. However, it doesn't alter the company's net assets. Instead, it redistributes part of the company's retained earnings to the share capital account without impacting the overall equity value.

Literature Review:

Athawale, S., & Athawale, U. (2023), The study examined the stock price reaction to selected123 bonus announcement by using event study methodology with market model. It is evident that the bonus announcements generate statistically significant AAR around the announcement. The rejection of null hypothesis on the event day and immediate post and pre-event windows is seen.It can be said that the selected bonus announcements create a significant impact on the equity shares market price around the event window. Hence, it sounds reasonable to conclude that the bonus announcement is viewed as a positive action by the market & thereby, these freebies offer an opportunity for wealth creation.

Tokariya, M. B. G., & Bhatt, K. A. (2020), This study investigates effect of bonusannouncement on share price and volume nearby the announcement day. The market adjustedmodel is used to calculate the abnormal return. The current study is limited to Indiancompanies listed in NSE 200 which offered bonus shares from January 2016 to December2018. The study concluded that there is significant difference in price for longer time framelike 21 days while the volume significant increases after announcement except 21 days.

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Kumari, P., & Pushpender, M. (2019), Presentstudy aims to investigate the impact of Bonus Issue announcement on Indian stock market for the period of five years from 2014 to 2018. We applied event study methodology using a sample size of nine companies from BSE. Percentage Analysis,CAGR (Compounded Annual Growth Rate), Mean, Standard Deviation, Regression Analysis and t-test as statistical tools have been used to analyse and interpret the data. Investigation window (t-10 to t+10) taken for all bonus issue announcement event to test the abnormal return considering nine companies. The result reveals that Indian Stock market does not react to bonus share issue announcement. Thus, this paper contributes to the fact that there is no significant effect on stock price when a company announces the issue of bonus shares.

K. Satti Babu, Mohammad Azmath Pasha (2019), Impact of Bonus Issues on Stock Returns on Selected Equities in India is the study's title. Stock from five distinct companies and five different industries was taken for the study. Ten days prior to and ten days following bonus announcements are the research periods for each organization. The study examined the mean return, standard deviation, and stock volatility. Since Ttest was appropriate for calculating return both before and after bonus announcements, it was utilized to test the hypothesis. It was discovered that Infosys saw significant return volatility following bonus announcements, while Mind Tree and Kothari experienced little to no change in returns following bonus announcements.

Rohit, B., Pinto, P., & Shakila, B. (2013), The objective of this study is to find evidence of semi strong form of efficiency in the Indian stock market. The paper examines the share price reaction tobonus issue announcements around the announcement date by using the event study methodology.Bonus announcements of companies listed on the Bombay Stock Exchange in 2010 and 2011 is takenas a sample for the study.

Ray, K. K. (2011), the aim of this paper is to test the semi-strong form of efficiency in the Indian equity market, following an eventstudy approach. The events considered in this paper are bonus issues and stock splits that took place in the market from1996 to 2008. These events are tested for abnormal returns and liquidity. The data selected is free from the impact ofconfounding events. –30 to +30 days investigation window is taken for all the events to test the abnormal returns andthe change in liquidity. The results suggest that the Indian market reacts to the stock split announcements but not tobonus issues, and the change in liquidity is significant for stock splits at 1% significance level, whereas with 5% levelof significance both bonus issues and stock splits show significant change in liquidity from pre- to post-event period.

Objectives of the Study

- To study and examine the effects of bonus share announcement on equity price.
- To study the impact of bonus share announcement on stock returns volatility.

Research Methodology

- Descriptive Survey method was used for research study.
- Sample size: Six companies from different sectors were chosen.
- Data: Secondary data was collected from www.nseindia.com
- Hypothesis H0: There is no significant difference in share returns before and after announcement of Bonus issue.
- Statistical Data used: T test was used to test the hypothesis as it is relevant to determine the changes in returns before and after announcement of bonus shares.

Data Analysis and interpretation

Table- 1: Reliance Industries Limited (Bonus Announcement 05/09/2024)

Returns Before Bonus Announcement			Returns After Bonus Announcement		
Date	Close Price	Returns	Date	Close Price	Returns

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05-Sep-24	2,985.95				
04-Sep-24	3,029.10	0.003595	06-Sep-24	2,929.65	-0.01885
03-Sep-24	3,018.25	-0.004699	09-Sep-24	2,924.90	-0.00162
02-Sep-24	3,032.50	0.004389	10-Sep-24	2,923.05	-0.00063
30-Aug-24	3,019.25	-0.007430	11-Sep-24	2,903.00	-0.00686
29-Aug-24	3,041.85	0.015100	12-Sep-24	2,959.60	0.019497
28-Aug-24	2,996.60	-0.001433	13-Sep-24	2,945.25	-0.00485
27-Aug-24	3,000.90	-0.008033	16-Sep-24	2,942.70	-0.00087
26-Aug-24	3,025.20	0.008417	17-Sep-24	2,944.60	0.000646
23-Aug-24	2,999.95	0.001235	18-Sep-24	2,926.90	-0.00601
22-Aug-24	2,996.25	-0.000367	19-Sep-24	2,939.35	0.004254

t-Test: Paired Two Sample for Means		
	Before	**After**
Mean	0.0010774	-0.00153
Variance	5.166E-05	9.347E-05
Observations	10	10
Pearson Correlation	0.494518	
Hypothesized Mean Difference	0	
Df	9	
t Stat	0.9432075	
P(T<=t) one-tail	0.1851018	
t Critical one-tail	1.8331129	
P(T<=t) two-tail	0.3702037	
t Critical two-tail	2.2621572	

H0: There is no significant difference in share returns of Reliance Industries Limited before and after announcement of Bonus issue

From above table we observed that p value – two tail (0.370) for the share return of 10 working days pre and post Bonus announcement analysis of Reliance Industries Limited is higher than 0.05. So, here Null hypothesis is failed to reject. i.e. There is no significant difference in share returns of Reliance Industries Limited before and after announcement of Bonus issue.

Table – 2: NBCC (India) Limited (Bonus Announcement 30/08/2024)

Returns Before Bonus Announcement			Returns After Bonus Announcement		
Date	**Close Price**	**Returns**	**Date**	**Close Price**	**Returns**
30-Aug-24	186.37				
29-Aug-24	194.82	-0.004548	02-Sep-24	187.59	0.006546
28-Aug-24	195.71	0.101723	03-Sep-24	186.67	-0.0049
27-Aug-24	177.64	0.009376	04-Sep-24	184.77	-0.01018
26-Aug-24	175.99	-0.012346	05-Sep-24	182.4	-0.01283
23-Aug-24	178.19	-0.020342	06-Sep-24	178.71	-0.02023
22-Aug-24	181.89	0.000660	09-Sep-24	173.67	-0.0282
21-Aug-24	181.77	-0.011636	10-Sep-24	180.38	0.038636
20-Aug-24	183.91	-0.004115	11-Sep-24	175.71	-0.02589
19-Aug-24	184.67	0.010285	12-Sep-24	180.34	0.02635
16-Aug-24	182.79	0.052816	13-Sep-24	179.26	-0.00599

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t-Test: Paired Two Sample for Means		
	Before	After
Mean	0.0121872	-0.00367
Variance	0.0013983	0.000478
Observations	10	10
Pearson Correlation	-0.001905	
Hypothesized Mean Difference	0	
df	9	
t Stat	1.1567079	
P(T<=t) one-tail	0.1385853	
t Critical one-tail	1.8331129	
P(T<=t) two-tail	0.2771706	
t Critical two-tail	2.2621572	

H0: Thereis no significant difference in share returns of NBCC (India) Limited before and after announcement of Bonus issue

From above table we observed that p value – two tail (0.277) for the share return of 10 working days pre and post Bonus announcement analysis of NBCC (India) Limited is higher than 0.05. So, here Null hypothesis is failed to reject. i.e. There is no significant difference in share returns of NBCC (India) Limited before and after announcement of Bonus issue.

Table – 3: RITES Limited (Bonus Announcement 31/07/2024)

Returns Before Bonus Announcement			Returns After Bonus Announcement		
Date	Close Price	Returns	Date	Close Price	Returns
31-Jul-24	715.1				
30-Jul-24	754.95	-0.005533	01-Aug-24	721.7	0.009229
29-Jul-24	759.15	0.137900	02-Aug-24	722.6	0.001247
26-Jul-24	667.15	-0.011922	05-Aug-24	687.35	-0.048782
25-Jul-24	675.2	-0.024136	06-Aug-24	689.9	0.003710
24-Jul-24	691.9	-0.004460	07-Aug-24	697.15	0.010509
23-Jul-24	695	-0.048206	08-Aug-24	690.05	-0.010184
22-Jul-24	730.2	0.006409	09-Aug-24	685.15	-0.007101
19-Jul-24	725.55	-0.009082	12-Aug-24	675.7	-0.013793
18-Jul-24	732.2	-0.014337	13-Aug-24	668.8	-0.010212
16-Jul-24	742.85	-0.022115	14-Aug-24	654.1	-0.021980

t-Test: Paired Two Sample for Means		
	Before	After
Mean	0.0004517	-0.00874
Variance	0.002548	0.000307
Observations	10	10
Pearson Correlation	0.2273844	
Hypothesized Mean Difference	0	
df	9	
t Stat	0.5866438	
P(T<=t) one-tail	0.285931	
t Critical one-tail	1.8331129	
P(T<=t) two-tail	0.571862	
t Critical two-tail	2.2621572	

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H0: There is no significant difference in share returns of RITES Limited before and after announcement of Bonus issue.

From above table we observed that p value – two tail (0.571) for the share return of 10 working days pre and post Bonus announcement analysis of RITES Limited is higher than 0.05. So, here Null hypothesis is failed to reject. i.e. There is no significant difference in share returns of RITES Limited before and after announcement of Bonus issue.

Table – 4: Central Depository Services (India) Ltd (Bonus Announcement 02/07/2024)

Returns Before Bonus Announcement			Returns After Bonus Announcement		
Date	**Close Price**	**Returns**	**Date**	**Close Price**	**Returns**
02-Jul-24	2,391.10				
01-Jul-24	2,438.00	0.021259	03-Jul-24	2,319.65	-0.029882
28-Jun-24	2,387.25	0.189936	04-Jul-24	2,320.05	0.000172
27-Jun-24	2,006.20	-0.005478	05-Jul-24	2,322.95	0.001250
26-Jun-24	2,017.25	-0.008795	08-Jul-24	2,309.10	-0.005962
25-Jun-24	2,035.15	0.001230	09-Jul-24	2,298.00	-0.004807
24-Jun-24	2,032.65	0.002787	10-Jul-24	2,297.05	-0.000413
21-Jun-24	2,027.00	-0.006105	11-Jul-24	2,442.40	0.063277
20-Jun-24	2,039.45	-0.005922	12-Jul-24	2,418.90	-0.009622
19-Jun-24	2,051.60	-0.010466	15-Jul-24	2,406.95	-0.004940
18-Jun-24	2,073.30	-0.019624	16-Jul-24	2,383.05	-0.009930

t-Test: Paired Two Sample for Means		
	Before	**After**
Mean	0.015882228	-8.56662E-05
Variance	0.003854318	0.000574755
Observations	10	10
Pearson Correlation	-0.047262008	
Hypothesized Mean Difference	0	
df	9	
t Stat	0.746966145	
P(T<=t) one-tail	0.237072658	
t Critical one-tail	1.833112933	
P(T<=t) two-tail	0.474145315	
t Critical two-tail	2.262157163	

H_0: There is no significant difference in share returns of Central Depository Services (India) Ltd before and after announcement of Bonus issue.

From above table we observed that p value – two tail (0.474) for the share return of 10 working days pre and post Bonus announcement analysis of Central Depository Services (India) Ltd is higher than 0.05. So, here Null hypothesis is failed to reject. i.e. There is no significant difference in share returns of Central Depository Services (India) Ltd before and after announcement of Bonus issue.

Table – 5: Hindustan Petroleum Corp Ltd (Bonus Announcement 09/05/2024)

Returns Before Bonus Announcement			Returns After Bonus Announcement		
Date	**Close Price**	**Returns**	**Date**	**Close Price**	**Returns**
09-May-24	501				
08-May-24	523.2	0.017800	10-May-24	501.55	0.001098
07-May-24	514.05	0.000487	13-May-24	500.15	-0.002791

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06-May-24	513.8	-0.038008	14-May-24	493.3	-0.013696
03-May-24	534.1	0.001125	15-May-24	506.7	0.027164
02-May-24	533.5	0.076908	16-May-24	498.9	-0.015394
30-Apr-24	495.4	-0.020271	17-May-24	506.95	0.016135
29-Apr-24	505.65	0.029627	18-May-24	505.05	-0.003748
26-Apr-24	491.1	-0.000204	21-May-24	526.85	0.043164
25-Apr-24	491.2	0.007796	22-May-24	530.35	0.006643
24-Apr-24	487.4	0.008901	23-May-24	535.45	0.009616

t-Test: Paired Two Sample for Means		
	Before	**After**
Mean	0.0084161	0.006819
Variance	0.0009331	0.000331
Observations	10	10
Pearson Correlation	-0.299422	
Hypothesized Mean Difference	0	
df	9	
t Stat	0.1263557	
P(T<=t) one-tail	0.4511141	
t Critical one-tail	1.8331129	
P(T<=t) two-tail	0.9022281	
t Critical two-tail	2.2621572	

H_0: There is no significant difference in share returns of Hindustan Petroleum Corp Ltd before and after announcement of Bonus issue.

From above table we observed that p value – two tail (0.902) for the share return of 10 working days pre and post Bonus announcement analysis of Hindustan Petroleum Corp Ltd is higher than 0.05. So, here Null hypothesis is failed to reject. i.e. There is no significant difference in share returns of Hindustan Petroleum Corp Ltd before and after announcement of Bonus issue.

Table – 6: Inox Wind Ltd (Bonus Announcement 25/04/2024)

Returns Before Bonus Announcement			Returns After Bonus Announcement		
Date	**Close Price**	**Returns**	**Date**	**Close Price**	**Returns**
25-Apr-24	645.5				
24-Apr-24	602.9	0.005336	26-Apr-24	640.6	-0.007591
23-Apr-24	599.7	0.012237	29-Apr-24	631	-0.014986
22-Apr-24	592.45	0.041121	30-Apr-24	627.6	-0.005388
19-Apr-24	569.05	0.045471	02-May-24	627.55	-0.000080
18-Apr-24	544.3	-0.008380	03-May-24	615.65	-0.018963
16-Apr-24	548.9	0.012637	06-May-24	605.7	-0.016162
15-Apr-24	542.05	-0.029280	07-May-24	570	-0.058940
12-Apr-24	558.4	0.030734	08-May-24	560.1	-0.017368
10-Apr-24	541.75	-0.030945	09-May-24	555.25	-0.008659
09-Apr-24	559.05	0.010484	10-May-24	542.8	-0.022422

t-Test: Paired Two Sample for Means		
	Before	**After**
Mean	0.0089414	-0.01706

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Variance	0.000693	0.000264
Observations	10	10
Pearson Correlation	0.5858891	
Hypothesized Mean Difference	0	
df	9	
t Stat	3.8508332	
P(T<=t) one-tail	0.0019507	
t Critical one-tail	1.8331129	
P(T<=t) two-tail	0.0039013	
t Critical two-tail	2.2621572	

H_0: There is no significant difference in share returns of Inox Wind Ltd before and after announcement of Bonus issue

From above table we observed that p value – two tail (0.003) for the share return of 10 working days pre and post Bonus announcement analysis of Inox Wind Ltd is less than 0.05. So, here Null hypothesis is rejected. i.e. There is a significant difference in share returns of Inox Wind Ltd before and after announcement of Bonus issue.

Findings and Conclusions:

The present study attempts to examine the efficiency of Indian stock market in relation to the impact of bonus issue announcement. In order to attain the objectives of the study, hypotheses are made such as H0: There is no significant difference in share returns before and after announcement of Bonus issue, H1: There is a significant difference in share returns before and after announcement of Bonus issue. A 21days event window has been employed in order to analyze the abnormal returns, window starts on the 10th day prior to the event day and ends on the 10th day after the event day. t-Test: Paired Two Sample for Means applied to test hypothesis. It was discovered that Reliance Industries Limited, NBCC (India) Limited, RITES Limited, Central Depository Services (India) Ltd, Hindustan Petroleum Corp Ltd, show no significant difference in share returns following bonus announcements. With the exception of Inox Wind Ltd, show significant difference in share returns following bonus announcements. Overall, the result reveals that Indian Stock market does not react to bonus share issue announcement. Thus, this paper contributes to the fact that there is no significant effect on stock price when a company announces the issue of bonus shares.

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CORPORATE GOVERNANCE REFORMS IN INDIA: NAVIGATING CHALLENGES AND HARNESSING OPPORTUNITIES

By
Nirav J. Pandya
Ph.D. Scholar
JG University, Ahmedabad, Gujarat

Abstract

Corporate governance reforms in India have been pivotal in shaping the country's corporate landscape, promoting transparency, accountability, and ethical business practices. These reforms have been instrumental in enhancing the operational efficiency and financial stability of Indian companies, while attracting both domestic and international investments. However, the implementation of these reforms has faced several challenges, including resistance to change, limited awareness, and inadequate enforcement mechanisms. This article explores the historical evolution of corporate governance in India, key developments in governance reforms, and the opportunities these reforms present for businesses. Additionally, the article identifies the major challenges faced in the implementation process and proposes recommendations for strengthening corporate governance practices. The study concludes by highlighting the role of governance reforms in fostering a sustainable business environment, which is crucial for long-term growth and competitiveness in the global market.

Keywords: Corporate Governance, India, Governance Reforms, Transparency, Accountability, Ethical Practices, Regulatory Framework, ESG, Investor Confidence

Introduction

Corporate governance refers to the framework of rules, practices, and processes by which a company is directed and controlled. It outlines the responsibilities and relationships among various stakeholders, including the board of directors, management, shareholders, and other relevant parties. At its core, corporate governance aims to ensure accountability, transparency, fairness, and responsibility within an organization, fostering trust and confidence among investors and stakeholders. One of the fundamental principles of corporate governance is transparency. This entails providing stakeholders with accurate and timely information about the company's financial performance, strategies, and decisions. Transparency helps in building credibility and ensures that shareholders and other stakeholders have a clear understanding of the organization's operations. This principle is particularly important for attracting investment, as it allows investors to make informed decisions based on reliable data.

Accountability is another cornerstone of corporate governance. It requires that the board of directors and management are accountable to the shareholders for their actions and decisions. Accountability is upheld through regular audits, performance reviews, and disclosure of relevant information. This principle ensures that those in positions of power act in the best interests of the company and its stakeholders, rather than pursuing personal gains. Fairness in corporate governance emphasizes equal treatment of all shareholders, including minority shareholders. Companies must ensure that all stakeholders have access to information and an opportunity to voice their concerns. Fairness also involves addressing conflicts of interest and preventing practices that could undermine the rights of any group of stakeholders. This principle is particularly significant in protecting the interests of smaller investors who may otherwise lack the power to influence decisions.

Responsibility highlights the importance of ethical behaviour and compliance with laws and regulations. Corporate governance requires organizations to operate within the legal framework and adhere to ethical standards that go beyond mere compliance. This principle ensures that companies consider the social and environmental impact of their activities and contribute to sustainable development. Lastly, the principle of independence is essential for fostering an unbiased and effective governance structure. Independent directors on the board, free from any material relationship with the

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company, play a critical role in providing impartial oversight and preventing potential conflicts of interest. Their presence helps balance the interests of management and shareholders, ensuring that strategic decisions align with the company's long-term objectives.

Role of Corporate Governance in Fostering Transparency, Accountability, and Ethical Management

Corporate governance plays a pivotal role in fostering transparency, accountability, and ethical management within organizations. These three pillars are essential for building trust among stakeholders, ensuring sustainable growth, and enhancing the long-term value of a company. By establishing a robust governance framework, organizations can operate with greater efficiency and integrity while mitigating risks associated with unethical practices or mismanagement.

Transparency

Transparency is a cornerstone of effective corporate governance, as it ensures that stakeholders have access to accurate, relevant, and timely information about a company's operations, financial performance, and decision-making processes. Transparent practices allow shareholders and investors to make informed decisions, reducing uncertainties and fostering confidence in the organization. Corporate governance mechanisms such as disclosure requirements, regular reporting, and open communication channels are instrumental in promoting transparency. For example, publicly listed companies are mandated to publish financial statements, board meeting minutes, and other critical information, enabling stakeholders to assess the company's performance and strategic direction. Moreover, transparency helps deter fraudulent activities, as open scrutiny reduces opportunities for misconduct.

Accountability

Accountability ensures that the board of directors, management, and other key decision-makers are answerable for their actions and decisions. Under a strong corporate governance framework, responsibilities are clearly defined, and mechanisms are in place to hold individuals and groups accountable for achieving organizational goals while adhering to ethical standards. This principle is upheld through various governance practices, such as the establishment of audit committees, performance evaluations, and adherence to legal and regulatory requirements. Shareholder meetings also provide a platform for stakeholders to question and evaluate the actions of the board and management, ensuring that their interests are being prioritized. Accountability fosters a culture of responsibility, preventing misuse of power and ensuring that all actions align with the company's mission and objectives.

Ethical Management

Ethical management is integral to corporate governance, as it ensures that businesses operate in a manner that upholds moral principles and societal norms. Governance frameworks emphasize the development of codes of conduct, conflict-of-interest policies, and ethical training programs to guide behaviour at all levels of the organization. Ethical management involves more than just compliance with laws; it requires a commitment to fairness, integrity, and social responsibility. For instance, companies with strong governance structures often prioritize environmental, social, and governance (ESG) criteria, aligning their operations with sustainable and ethical practices. This approach not only enhances the organization's reputation but also contributes to long-term success by building goodwill among customers, employees, and the broader community.

Interconnection of Principles

The interplay between transparency, accountability, and ethical management creates a virtuous cycle within an organization. Transparency ensures that stakeholders are well-informed, which reinforces accountability by enabling stakeholders to monitor performance and decisions. Ethical management

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provides the foundation for both transparency and accountability by instilling a culture of integrity and trustworthiness.

In summary, corporate governance serves as a critical enabler of transparency, accountability, and ethical management. These principles work together to create a resilient, trustworthy, and value-driven organization. Companies that prioritize these elements are better positioned to attract investments, retain stakeholder confidence, and achieve sustainable growth, making corporate governance an indispensable aspect of modern business practices.

Historical Evolution of Corporate Governance in India

The history of corporate governance in India is marked by gradual evolution, shaped by economic developments, regulatory reforms, and global influences. From a rudimentary governance structure in the pre-independence era to the modern, dynamic framework seen today, corporate governance in India has come a long way. This evolution reflects the country's growing integration with the global economy and the increasing complexity of its corporate landscape.

Pre-Independence Era

During the colonial period, corporate governance in India was primarily influenced by British laws and practices. The Indian Companies Act of 1857, modeled after English corporate law, laid the foundation for corporate governance by introducing concepts such as limited liability and the separation of ownership and management. However, governance standards were rudimentary, with limited focus on accountability or transparency.

The early 20th century saw the enactment of the **Indian Companies Act, 1913**, which introduced provisions for shareholder rights and basic financial disclosures. Despite these advancements, corporate governance during this period was still characterized by weak enforcement mechanisms and limited stakeholder awareness.

Post-Independence Period (1947–1990)

After independence, India adopted a mixed economy, with significant government control over industries. The corporate sector was heavily regulated through industrial licensing, price controls, and stringent import-export policies. During this era, corporate governance was more about compliance with government regulations than addressing the interests of stakeholders.

The Companies Act, 1956, replaced the 1913 Act and became the cornerstone of corporate regulation in India. It introduced several governance provisions, including requirements for board meetings, financial disclosures, and audits. However, weak enforcement and the dominance of family-owned businesses limited the effectiveness of governance practices.

Economic Liberalization and the 1990s Reforms

The economic liberalization of 1991 marked a turning point for corporate governance in India. As the Indian economy opened up to global markets, there was a growing recognition of the need for improved governance standards to attract foreign investment and build investor confidence.

The 1990s witnessed significant reforms:

- The establishment of the Securities and Exchange Board of India (SEBI) in 1992 as the regulator for capital markets brought stricter oversight of corporate disclosures and investor protection.
- The introduction of listing agreements for publicly traded companies emphasized transparency and accountability.
- The Confederation of Indian Industry (CII) released the Desirable Corporate Governance Code in 1998, marking the first voluntary guidelines for Indian companies.

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2000s: Strengthening the Governance Framework

The early 2000s saw further consolidation of governance practices in India. SEBI introduced the Clause 49 of the Listing Agreement in 2000, which mandated key governance provisions such as the appointment of independent directors, the formation of audit committees, and enhanced disclosure requirements. This was a significant step toward aligning Indian governance practices with global standards.

Scandals such as the Satyam fraud of 2009 highlighted the gaps in enforcement and underscored the need for stricter regulations. In response, SEBI and the Ministry of Corporate Affairs (MCA) introduced reforms to strengthen board independence, tighten audit requirements, and improve risk management.

Post-2013: The Companies Act, 2013

The enactment of the Companies Act, 2013, was a landmark development in Indian corporate governance. This comprehensive legislation replaced the 1956 Act and introduced several governance enhancements, including:

- Mandatory board diversity and independent directors.
- Establishment of a Corporate Social Responsibility (CSR) framework.
- Stringent disclosure and reporting norms.
- Protection of minority shareholders' interests.

The Act provided a robust legal framework for improving governance practices and aligned Indian laws with global benchmarks.

Recent Developments and the ESG Era

In the past decade, corporate governance in India has evolved further, focusing on sustainability and stakeholder-centric practices. SEBI's Listing Obligations and Disclosure Requirements (LODR) Regulations in 2015 streamlined governance norms for listed entities. The rise of Environmental, Social, and Governance (ESG) considerations has brought a paradigm shift, emphasizing ethical management, sustainability, and long-term value creation. Indian companies are increasingly adopting global best practices in governance to enhance their reputation and competitiveness.

The historical evolution of corporate governance in India reflects the country's journey toward economic maturity and global integration. From rudimentary practices in the colonial era to the adoption of advanced governance frameworks in the 21st century, India has made significant strides in fostering transparency, accountability, and stakeholder trust. However, continuous reform and rigorous enforcement remain essential to address emerging challenges and ensure sustainable growth.

Key Developments in Corporate Governance Reforms in India

India's corporate governance framework has undergone significant transformations over the years, driven by regulatory changes, global best practices, and the need to address corporate challenges. These developments aim to enhance transparency, accountability, and ethical management in the corporate sector. Below are the key milestones in India's corporate governance reforms:

The Companies Act, 2013

The Companies Act, 2013, is a landmark reform in Indian corporate governance, replacing the outdated Companies Act of 1956. It introduced several provisions to align governance practices with global standards:

- Mandatory Board Composition: Requirement for independent directors and gender diversity on boards.
- Audit Committees: Establishment of audit committees to oversee financial reporting.

- Corporate Social Responsibility (CSR): Mandatory CSR spending for companies meeting certain financial thresholds.
- Stakeholder Protection: Provisions to protect minority shareholders' rights.
- Whistleblower Mechanism: Establishment of mechanisms for reporting unethical practices.

This Act marked a shift from compliance-based governance to a performance-oriented framework.

SEBI and Clause 49 of the Listing Agreement (2000)

The Securities and Exchange Board of India (SEBI) introduced Clause 49 in 2000, setting corporate governance standards for listed companies. Key requirements included:

- Composition of boards with at least one-third independent directors.
- Formation of audit committees.
- Enhanced disclosure norms.

Clause 49 was instrumental in driving accountability and transparency in listed companies and marked the beginning of India's alignment with global governance norms.

Listing Obligations and Disclosure Requirements (LODR), 2015

SEBI consolidated various governance regulations under the LODR Regulations, 2015 to ensure uniformity and compliance:

- Clear guidelines on board structure and composition.
- Periodic financial and operational disclosures to shareholders.
- Stricter norms for related-party transactions.

These regulations emphasized accountability and ensured that companies adhered to high governance standards.

Establishment of SEBI (1992)

The establishment of SEBI as the capital market regulator in 1992 marked a turning point in corporate governance. SEBI's mandate to protect investor interests and regulate securities markets brought stricter oversight of corporate practices. Key initiatives include:

- Strengthening disclosure requirements.
- Regulating insider trading through the Insider Trading Regulations, 1992 and its subsequent amendments.
- Mandatory reporting of corporate actions and performance.

Satyam Scandal and Post-2009 Reforms

The Satyam Computers fraud (2009) exposed severe lapses in corporate governance and led to sweeping reforms:

- Strengthening the role of independent directors.
- Mandatory rotation of auditors to prevent collusion.
- Enhanced oversight of related-party transactions.
- Establishment of the National Financial Reporting Authority (NFRA) for improved financial oversight.

These reforms were critical in restoring trust in Indian corporate governance.

Corporate Social Responsibility (CSR)

The Companies Act, 2013, introduced mandatory CSR spending, making India the first country to implement such a requirement. Companies meeting certain thresholds are required to spend 2% of their average net profits over the preceding three years on CSR activities. This reform underscores the importance of social responsibility in corporate governance.

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Insolvency and Bankruptcy Code (IBC), 2016

The introduction of the IBC, 2016, streamlined insolvency resolution processes and improved creditor confidence. It also emphasized accountability among corporate entities, ensuring that governance failures leading to financial distress were addressed promptly.

ESG and Sustainability Reforms

In recent years, corporate governance reforms have increasingly focused on Environmental, Social, and Governance (ESG) considerations. Key developments include:

- Mandatory ESG reporting for top-listed companies.
- Focus on sustainable business practices and ethical management.
- Integration of ESG metrics into governance frameworks to attract global investment.

Enhanced Role of Independent Directors

Over the years, reforms have strengthened the role of independent directors in promoting transparency and unbiased decision-making:

- Mandatory training programs for independent directors.
- Stricter guidelines for their appointment and removal.
- Accountability for safeguarding minority shareholders' interests.

Business Responsibility and Sustainability Report (BRSR)

In 2021, SEBI introduced the **BRSR** framework, mandating sustainability reporting for the top 1,000 listed companies. This initiative focuses on ethical governance, environmental stewardship, and social responsibility.

India's corporate governance reforms have consistently evolved to address emerging challenges and align with international standards. From the Companies Act of 2013 to recent ESG-focused initiatives, these developments underscore the growing emphasis on fostering transparency, accountability, and ethical practices. Moving forward, continuous regulatory vigilance and enforcement will be crucial in maintaining the integrity of India's corporate sector.

Challenges in Implementing Corporate Governance Reforms

- Established businesses, particularly family-owned and closely held companies, often resist governance reforms due to fear of losing control.
- Limited understanding of governance principles among directors, managers, and stakeholders, especially in small and medium-sized enterprises (SMEs).
- Implementing governance reforms involves significant financial and administrative costs, which can burden smaller companies.
- Inadequate enforcement of regulations by authorities such as SEBI and the Ministry of Corporate Affairs, leading to non-compliance by companies.
- Challenges in finding qualified independent directors and ensuring their true independence and accountability.
- A lack of a strong ethical culture in some organizations undermines the effectiveness of governance practices.
- Overlapping and sometimes conflicting laws and regulations create confusion and compliance difficulties.
- Fear of retaliation discourages employees from reporting unethical practices, limiting the effectiveness of whistleblower mechanisms.
- Adapting to technology-driven governance requirements, such as digital reporting and ESG data collection, can be challenging for traditional companies.

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- Balancing global best practices with the unique economic and cultural context of India often complicates the adoption of governance reforms.
- Focus on immediate financial performance over long-term sustainability and governance integrity.
- Despite reforms, accountability mechanisms, especially for boards and top management, often remain weak.

Opportunities through Governance Reforms

- Strong governance practices, such as transparency and accountability, can boost investor trust, leading to increased investment, both domestic and foreign.
- Compliance with international governance standards can help Indian companies gain access to global capital markets, improving opportunities for global partnerships and business expansion.
- Proper governance structures help in better risk management, financial discipline, and operational efficiency, which can lead to improved profitability and long-term value creation.
- Robust governance frameworks help identify and mitigate financial, operational, and reputational risks, safeguarding companies from potential crises.
- Companies that prioritize ethical governance practices are likely to have stronger brand value and public perception, which can attract customers, investors, and talent.
- Reforms focused on Environmental, Social, and Governance (ESG) factors open up opportunities to attract socially responsible investors, aligning with global sustainability trends.
- Effective governance reforms emphasize stakeholder interests, improving relationships with employees, customers, suppliers, and communities, leading to greater loyalty and collaboration.
- Reforms that require companies to engage in CSR activities can create opportunities for companies to contribute to societal development while improving their public image.
- Adoption of globally recognized governance norms allows companies to align with international regulations, improving their competitiveness and reducing compliance risks.
- Companies with strong governance practices are often perceived as lower risk by investors, leading to higher market valuations and increased shareholder wealth.
- Governance reforms push family-owned businesses to adopt professional management structures, which can enhance their long-term sustainability and growth potential.
- Governance reforms help instill a culture of ethics and integrity in business practices, reducing corruption, fraud, and mismanagement, leading to a more sustainable business environment.
- With a focus on long-term value creation, governance reforms encourage innovation and sustainable business practices, ensuring growth while minimizing environmental and social impact.
- Reforms aimed at protecting minority shareholders encourage greater participation and investment, thereby improving overall market liquidity.

Recommendations for Strengthening Governance Reforms

- Ensure a higher proportion of independent directors on boards, particularly in large companies. Regular reviews of their independence should be conducted to prevent conflicts of interest and improve decision-making.
- Encourage organizations to adopt ethical leadership practices, instilling a culture of integrity across all levels of the company. This can be achieved through leadership training, ethics committees, and clear corporate codes of conduct.
- Improve the enforcement mechanisms of governance regulations. Stronger penalties and penalties for non-compliance, along with regular audits and inspections, will ensure that companies adhere to governance practices.

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- Mandate Environmental, Social, and Governance (ESG) disclosures for all companies, particularly those listed on stock exchanges. This will encourage sustainable practices and attract ethical investors.
- Strengthen whistleblower protection mechanisms to encourage employees and stakeholders to report unethical practices without fear of retaliation. This could include anonymous reporting systems and legal safeguards for whistleblowers.
- Encourage periodic internal and external governance audits to assess the effectiveness of corporate governance frameworks. These audits will identify weaknesses and areas for improvement.
- Provide mandatory training for board members, particularly independent directors, on governance best practices, legal responsibilities, financial reporting, and risk management. This will ensure they are well-equipped to make informed decisions.
- Ensure that companies provide comprehensive, accurate, and timely disclosures related to financial performance, risk exposure, executive compensation, and related-party transactions.
- Improve the protection of minority shareholders by ensuring they have a more substantial role in governance decisions, such as voting on key matters like executive compensation and mergers/acquisitions.
- Introduce policies and frameworks that encourage family-owned businesses to adopt professional management structures and better governance practices while retaining their ownership and control.
- Mandate greater transparency in executive pay, ensuring that compensation is aligned with company performance and long-term shareholder value. Introduce shareholder approval for excessive compensation packages.
- Recognizing the unique challenges faced by small and medium-sized enterprises (SMEs), introduce simplified governance frameworks that allow these businesses to comply with basic governance standards without burdening them with excessive costs.
- Promote collaborations between industry bodies, government agencies, and educational institutions to offer corporate governance training and resources to businesses across sectors.
- Encourage companies to adopt comprehensive risk management frameworks that cover financial, operational, and reputational risks, ensuring early detection and mitigation of potential threats.
- Encourage greater shareholder involvement in the governance process, including voting on key decisions, attending annual general meetings, and participating in governance discussions. This will create greater accountability for company executives and directors.

Conclusion

The evolution of corporate governance in India has marked a significant journey from rudimentary practices to a more structured and sophisticated system designed to foster transparency, accountability, and ethical management. Despite the progress made, the road to comprehensive governance reform is laden with challenges that must be addressed to truly unlock the potential for sustainable growth in India's corporate sector. The resistance to change, limited enforcement mechanisms, and cultural barriers require concerted efforts from both the government and private enterprises.

However, the opportunities presented through the strengthening of corporate governance reforms are immense. Enhanced investor confidence, access to global markets, improved financial performance, and the cultivation of a robust corporate reputation are just a few of the strategic benefits that can propel Indian companies to global prominence. The implementation of robust governance practices can mitigate risks, bolster corporate social responsibility, and encourage innovation, all of which contribute to long-term success.

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To truly harness the full potential of governance reforms, a multi-faceted approach is essential. This includes enhanced regulatory enforcement, comprehensive director training, the promotion of ethical business practices, and the adoption of transparent and inclusive decision-making processes. Furthermore, integrating Environmental, Social, and Governance (ESG) criteria into corporate strategies will not only align Indian companies with global trends but will also position them as ethical, sustainable, and competitive players in the international arena.

The path forward necessitates a continuous refinement of regulatory frameworks, alongside the cultivation of a corporate culture that embraces integrity, transparency, and accountability. As governance reforms evolve, so too must the commitment to implementing best practices across industries. With determined leadership, consistent enforcement, and active stakeholder engagement, India has the opportunity to emerge as a model of governance excellence, driving sustainable business growth and fostering long-term economic development.

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NAVIGATING RISKS IN STOCK MARKET INVESTMENTS: INSIGHTS FROM INDIAN FINANCIAL MARKETS

By
Shah Sudip Bharatbhai
Ph.D. Scholar
&
Dr. Rajan Parikh
Assistant Professor
JG University, Ahmedabad, Gujarat

Abstract

The stock market serves as a vital avenue for financial investment, offering the potential for significant returns alongside inherent risks. This paper explores the relevance of the Indian stock market for investors, emphasizing the importance of understanding and managing risks to achieve financial goals. Key risks in the Indian stock market, including market volatility, liquidity issues, and regulatory challenges, are examined in detail. The study also highlights strategies for navigating these risks, such as diversification, portfolio rebalancing, and leveraging regulatory safeguards. Furthermore, the role of the regulatory framework, particularly SEBI, in mitigating risks and ensuring market stability is discussed. By adopting informed and disciplined investment practices, investors can effectively manage risks and capitalize on the opportunities provided by the Indian stock market. This study provides valuable insights for individual and institutional investors seeking to navigate the complexities of stock market investments in India.

Keywords: Financial Investment, Stock market investments, Indian stock market, financial risks, SEBI

Introduction

The stock market serves as one of the most prominent financial investment avenues, attracting investors ranging from individuals to large institutional players. Its allure lies in the potential for high returns, liquidity, and the opportunity to invest in diverse sectors of the economy. By purchasing shares in a publicly traded company, investors gain partial ownership, which often comes with the prospect of earning dividends and benefiting from the capital appreciation of their investments.Historically, stock markets have played a vital role in channeling funds from savers to businesses, facilitating economic growth and innovation. Companies raise capital by issuing shares to fund expansion, develop new products, or enter new markets. For investors, this provides an opportunity to participate in the growth story of businesses, generating wealth over time. This symbiotic relationship underscores the importance of stock markets in fostering a robust financial ecosystem.

One of the unique aspects of the stock market is its ability to cater to a wide range of risk appetites and investment goals. From blue-chip stocks offering stability and steady returns to small-cap stocks providing high growth potential (albeit with higher risk), the stock market offers opportunities for every type of investor. Additionally, advancements in technology have made stock investing more accessible, with online platforms enabling investors to trade and manage portfolios in real time.However, the stock market is not without its challenges. Price volatility, influenced by factors such as economic indicators, geopolitical events, and corporate performance, poses risks to investors. Despite this, long-term investment strategies and diversified portfolios can often mitigate these risks, making the stock market a cornerstone of wealth-building for disciplined investors.In India, the stock market has seen significant growth, fueled by economic reforms, technological advancements, and increasing investor participation. Major exchanges like the Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE) provide a platform for trading a wide array of securities, including equities, derivatives, and ETFs. As India continues to position itself as a global economic powerhouse, the stock market

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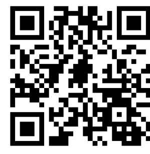
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remains a dynamic and compelling avenue for those looking to grow their wealth while contributing to the country's economic development.

Literature Review

Bhattacharjee (2021): In a comprehensive literature review, Bhattacharjee systematically analyzed various aspects of risk perception related to equity investments. The study identified determinants influencing investors' perceptions of risk, including psychological factors, market dynamics, and information asymmetry. The author emphasized the need for future research to explore these determinants further to enhance understanding of investor behavior in equity markets.

Melina et al. (2023): This study employed a semi-systematic literature review to explore the application of Extreme Value Theory (EVT) in estimating investment risk in the stock market. The authors proposed a conceptual model integrating EVT with machine learning techniques to predict investment risk more dynamically and sensitively to extreme market fluctuations. The study highlighted the importance of such models in capturing the tail risks that traditional models might overlook.

Giglio et al. (2020): The authors analyzed how investor expectations about economic growth and stock returns changed during the February-March 2020 stock market crash induced by the COVID-19 pandemic. They found that following the crash, investors became more pessimistic about short-term market performance and perceived higher probabilities of further extreme declines. However, expectations about long-term economic and market outcomes remained largely unchanged, indicating a nuanced view of risk among investors during crises.

Cheng et al. (2023): This study proposed a novel approach to risk-aware stock recommendation by introducing Split Variational Adversarial Training (SVAT). The method aims to reduce investment risks by making stock recommendation models sensitive to adversarial perturbations, thereby enhancing risk awareness. The authors demonstrated that SVAT effectively lowers the volatility of stock recommendation models and outperforms state-of-the-art baselines in terms of risk-adjusted profits.

Zhang (2023): In a literature review focusing on the influencing factors of stock price crash risk, Zhang identified key determinants such as information disclosure practices, corporate governance structures, and market liquidity. The study emphasized the importance of transparency and robust governance in mitigating the risk of sudden stock price declines, suggesting that firms with better disclosure and governance practices are less prone to such risks.

Relevance of the Indian stock market for investors

The Indian stock market holds immense relevance for investors, offering a dynamic platform to participate in one of the world's fastest-growing economies. With its vast array of listed companies across diverse sectors, the Indian stock market provides a unique opportunity to benefit from the country's economic expansion, demographic advantage, and increasing globalization. For both domestic and international investors, it serves as a gateway to capitalize on India's growth story.One of the key aspects of the Indian stock market's relevance lies in its potential for wealth creation. Over the years, the market has delivered substantial returns to long-term investors, driven by consistent economic growth, corporate profitability, and policy reforms. Major indices like the Nifty 50 and Sensex have shown steady growth, reflecting the resilience of India's leading companies. This track record has positioned the stock market as a crucial component of wealth-building strategies for Indian households.

The market's diversity is another factor that enhances its appeal. With companies ranging from large-cap, well-established firms to small-cap, high-growth businesses, the Indian stock market caters to various investment preferences and risk appetites. Additionally, sectoral opportunities in areas such as technology, finance, pharmaceuticals, and renewable energy allow investors to align their portfolios with emerging trends and innovations.India's regulatory framework further strengthens the stock market's relevance. Oversight by the Securities and Exchange Board of India (SEBI) ensures transparency, fairness, and investor protection. Initiatives such as the introduction of dematerialized trading, corporate

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governance norms, and investor education programs have fostered confidence and increased participation among retail investors. As a result, more Indians are viewing the stock market as a viable alternative to traditional investment options like real estate and fixed deposits.

Key Risks in the Indian Stock Market

The Indian stock market, while offering significant opportunities for wealth creation, is also fraught with various risks that investors must carefully consider. These risks stem from a combination of domestic factors, global influences, and the inherent volatility of the market itself. Understanding these key risks is essential for formulating effective investment strategies and safeguarding financial assets.

Market Volatility

One of the most prominent risks in the Indian stock market is its inherent volatility. Prices of stocks can fluctuate sharply due to factors such as economic data releases, geopolitical tensions, or changes in global markets. Events like the COVID-19 pandemic, the 2008 financial crisis, or sudden policy announcements (e.g., demonetization) have historically caused significant market swings. Such volatility can lead to substantial short-term losses for investors, especially those who lack a long-term perspective.

Economic and Political Risks

The Indian stock market is sensitive to domestic economic conditions, including inflation rates, GDP growth, interest rates, and fiscal policies. For instance, a rise in interest rates by the Reserve Bank of India (RBI) can negatively impact borrowing costs for companies, affecting their profitability and stock prices. Political instability or major policy changes, such as tax reforms or regulatory overhauls, can also create uncertainty, leading to investor apprehension and market downturns.

Sector-Specific Risks

Certain sectors in the Indian economy, such as technology, banking, or real estate, are more susceptible to specific risks. For example, the banking sector may face challenges due to rising non-performing assets (NPAs), while the technology sector could be impacted by global demand trends or regulatory changes in key markets like the United States. Investing heavily in a single sector exposes investors to concentrated risks that can magnify losses during sectoral downturns.

Corporate Governance Risks

Corporate governance issues, such as fraud, mismanagement, or unethical practices, pose significant risks to investors. Instances like the Satyam scandal or the IL&FS crisis have highlighted how poor governance can erode investor confidence and lead to sharp declines in stock value. For retail investors, identifying such risks can be challenging, underscoring the importance of thorough research and due diligence.

Global Market Dependencies

The Indian stock market is increasingly influenced by global economic conditions, including currency fluctuations, trade tensions, and changes in international monetary policies. For instance, a strengthening US dollar or rising crude oil prices can negatively impact India's trade balance, putting pressure on the stock market. Additionally, decisions by major central banks like the Federal Reserve can trigger capital outflows from emerging markets, including India.

Regulatory and Compliance Risks

Changes in regulations or compliance requirements can create uncertainty in the market. While the Securities and Exchange Board of India (SEBI) plays a vital role in maintaining market stability,

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sudden regulatory changes can impact investor sentiment. For example, the introduction of new tax policies or restrictions on foreign investment can lead to market disruptions.

Behavioural Risks

Investor behaviour, driven by emotions like fear or greed, can amplify risks. Herd mentality during bull or bear markets often leads to overvaluation or undervaluation of stocks, creating bubbles or steep corrections. Retail investors, in particular, are susceptible to making impulsive decisions during market highs or lows, often resulting in financial losses.

Currency Risks

Given the globalization of financial markets, currency fluctuations also impact the Indian stock market. Depreciation of the Indian rupee against major currencies can increase import costs for companies, reducing profitability and negatively affecting stock prices. Export-driven industries like IT and pharmaceuticals, on the other hand, can benefit, adding another layer of complexity for investors.

While the Indian stock market offers immense potential for returns, its associated risks cannot be ignored. Investors must adopt strategies such as diversification, periodic portfolio reviews, and informed decision-making to mitigate these risks. By staying vigilant and proactive, investors can navigate these challenges and make the most of the opportunities the Indian stock market presents.

Strategies for Navigating Stock Market Risks

Navigating stock market risks requires a combination of informed decision-making, disciplined investment practices, and a strategic approach to portfolio management. While risks are an inherent part of stock market investing, adopting the right strategies can help mitigate these risks and maximize the potential for long-term returns. Below are some effective strategies for managing stock market risks:

Diversification

Diversification is one of the most widely recommended strategies to manage stock market risks. By investing across various asset classes, industries, and geographic regions, investors can reduce the impact of poor performance in any single investment. For instance, a portfolio with a mix of equities, bonds, and mutual funds from different sectors (e.g., technology, finance, healthcare) is less likely to suffer significant losses compared to a portfolio concentrated in one sector.

Assessing Risk Tolerance and Setting Clear Goals

Understanding your risk tolerance is crucial for tailoring an investment strategy that aligns with your financial goals and comfort level. Investors with a low-risk appetite might prioritize stable, dividend-yielding stocks or bonds, while those with a higher risk tolerance might focus on growth stocks or emerging markets. Setting clear financial objectives—whether for retirement, education, or wealth building—can guide your investment decisions and help you stay focused during market fluctuations.

Adopting a Long-Term Perspective

Short-term market volatility often causes panic, leading to impulsive decisions that can result in losses. Adopting a long-term perspective helps investors ride out market fluctuations and benefit from the compounding effect of investments over time. Historical data shows that despite short-term corrections, the stock market has consistently generated positive returns over the long run.

Regular Portfolio Review and Rebalancing

Market conditions and personal financial situations change over time, necessitating regular portfolio reviews. Rebalancing involves adjusting your portfolio to maintain the desired asset allocation, ensuring it aligns with your risk tolerance and investment goals. For example, if equities have

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outperformed and now constitute a larger portion of your portfolio than intended, rebalancing can help reduce exposure to overvalued stocks and maintain diversification.

Staying Informed and Conducting Research

Keeping abreast of market trends, economic developments, and company-specific news is essential for making informed investment decisions. Conducting thorough research on the fundamentals of companies—such as their financial health, management quality, and growth prospects—can help you avoid poorly performing stocks and identify promising opportunities.

Using Stop-Loss Orders and Hedging Techniques

Stop-loss orders can help limit potential losses by automatically selling a stock when it reaches a predetermined price. This tool is particularly useful in volatile markets, as it minimizes emotional decision-making during downturns. Additionally, hedging strategies, such as investing in derivatives or gold, can offset potential losses and provide a cushion against adverse market movements.

Avoiding Emotional Investing

Stock market decisions driven by fear or greed often lead to poor outcomes. For instance, panic-selling during a market downturn or chasing high-performing stocks without analysis can result in significant losses. A disciplined approach, grounded in data and long-term objectives, can help investors avoid common pitfalls.

Building an Emergency Fund

Before investing in the stock market, it is prudent to establish an emergency fund that covers at least six months of living expenses. This fund acts as a financial safety net, ensuring that you do not have to sell investments prematurely during emergencies or market downturns.

Seeking Professional Guidance

For those new to investing or unsure about managing their portfolios, seeking guidance from financial advisors or investment professionals can be highly beneficial. Advisors can provide tailored recommendations based on your financial situation, risk tolerance, and goals, helping you navigate the complexities of the stock market.

Leveraging Systematic Investment Plans (SIPs)

SIPs allow investors to invest a fixed amount in mutual funds at regular intervals, reducing the impact of market volatility. By spreading investments over time, SIPs enable investors to average out the cost of buying units, making them an effective strategy for long-term wealth creation.

Navigating stock market risks requires a proactive, well-informed approach that balances potential returns with acceptable levels of risk. By adopting strategies such as diversification, regular portfolio reviews, and disciplined investing, investors can mitigate risks and achieve their financial goals. The key lies in staying patient, informed, and focused on long-term objectives while adapting to changing market conditions.

Regulatory Framework and Risk Mitigation

The regulatory framework plays a pivotal role in mitigating risks in the stock market, ensuring transparency, fairness, and investor protection. In India, the Securities and Exchange Board of India (SEBI) is the principal regulatory authority overseeing the stock market. Its robust framework, combined with compliance requirements for market participants, creates a safer environment for investors. Understanding the regulatory framework and its contributions to risk mitigation is essential for both novice and experienced investors.

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Role of SEBI in Risk Mitigation

SEBI was established in 1992 to regulate the securities market and protect investor interests. It functions as the watchdog for stock market activities, enforcing rules and taking corrective actions to address misconduct. Its core contributions to risk mitigation include:

- Regulation of Market Participants
  SEBI regulates stock exchanges, brokers, and other intermediaries, ensuring they operate fairly and transparently. It imposes stringent licensing requirements, conducts regular audits, and monitors compliance to prevent malpractices such as insider trading or market manipulation.
- Disclosure Requirements
  Listed companies are mandated to disclose financial results, shareholding patterns, and significant events that could impact stock prices. These disclosures enhance transparency and enable investors to make informed decisions, reducing the risk of being misled by inaccurate or incomplete information.
- Investor Protection Measures
  SEBI has introduced several initiatives to protect retail investors, such as the establishment of the Investor Protection Fund (IPF) and the provision of grievance redressal mechanisms. Investors can report issues with brokers, exchanges, or companies, ensuring swift resolution.
- Prevention of Fraudulent Activities
  SEBI actively monitors the market for fraudulent activities, including pump-and-dump schemes, price rigging, and insider trading. Its enforcement actions, such as imposing fines and barring violators, act as deterrents to unethical practices.
- Introduction of Margin and Circuit Breaker Mechanisms
  To curb excessive speculation and volatility, SEBI enforces margin requirements and circuit breaker mechanisms. These measures prevent abrupt market movements and give investors time to respond rationally during periods of sharp price fluctuations.

Risk Mitigation through Regulations

The Indian regulatory framework also includes measures aimed at promoting investor confidence and reducing systemic risks. Key examples include:

- Implementation of Know Your Customer (KYC) Norms
  KYC regulations ensure that only verified individuals and entities can participate in the stock market. This reduces the risk of money laundering, fraud, and other illegal activities.
- Regulation of Algorithmic and High-Frequency Trading
  SEBI has implemented guidelines to oversee algorithmic trading and high-frequency trading, which can exacerbate volatility. These regulations include mandatory testing of algorithms and restrictions on their usage to ensure market stability.
- Corporate Governance Norms
  To enhance accountability, SEBI mandates companies to adhere to corporate governance norms, including the appointment of independent directors and the establishment of audit committees. These measures reduce the risk of corporate mismanagement and fraud.
- Introduction of New Investment Products
  SEBI ensures that new financial instruments, such as derivatives or exchange-traded funds (ETFs), are thoroughly reviewed and accompanied by clear guidelines. This minimizes the risk of misuse and promotes investor understanding.

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Global Cooperation and Risk Management

The Indian regulatory framework aligns with global best practices to address risks stemming from international market interdependencies. SEBI collaborates with other regulatory bodies through platforms like the International Organization of Securities Commissions (IOSCO), enhancing cross-border regulatory oversight.

Challenges and Continuous Improvement

Despite a strong regulatory framework, challenges such as the rise of complex financial products, cyber threats, and evolving market dynamics require continuous vigilance and adaptation. SEBI and other regulatory authorities are focused on upgrading technology, enhancing surveillance, and introducing investor education programs to address these challenges effectively.

The regulatory framework in India, led by SEBI, plays a vital role in mitigating risks and fostering a secure and efficient stock market. By enforcing transparency, fairness, and investor protection measures, it ensures that market participants can operate with confidence. While regulations cannot eliminate all risks, they significantly reduce their impact and create a robust foundation for long-term market stability.

Conclusion

Investing in the stock market presents both opportunities and risks. While the potential for high returns makes it an attractive avenue for wealth creation, the inherent volatility and uncertainties necessitate a strategic approach to managing risks. Understanding the dynamics of the stock market, including its regulatory framework and the nature of associated risks, is critical for making informed investment decisions. The Indian stock market, regulated by SEBI, offers a robust structure to safeguard investors through transparency, accountability, and investor-centric measures. Diversification, disciplined investment practices, and leveraging regulatory protections are essential strategies for mitigating risks. Additionally, staying informed, maintaining a long-term perspective, and using tools such as stop-loss orders can help navigate the complexities of the market.While no strategy can entirely eliminate risks, a well-planned and informed approach can significantly enhance the likelihood of achieving financial goals. As the Indian stock market continues to evolve and align with global standards, it remains a relevant and promising platform for investors who are prepared to balance risks and rewards. By combining prudence with proactive decision-making, investors can harness the potential of the stock market to build a secure financial future.

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ECONOMIC VARIABLES AND THEIR INFLUENCE ON IPO PERFORMANCE IN INDIA

By
Nainsingh Banesingh Shersingh Rajput
Ph.D. Scholar
&
Dr. Rajan Parikh
Assistant Professor
JG University, Ahmedabad, Gujarat

Abstract

This study explores the impact of various economic variables on the performance of Initial Public Offerings (IPOs) in India. IPOs play a crucial role in the development of capital markets, and their success is influenced by factors such as macroeconomic indicators, monetary policies, global economic conditions, and market sentiment. The study delves into key metrics used to evaluate IPO performance, including initial returns, long-term performance, pricing strategies, and investor demand. Empirical evidence highlights how these economic variables affect IPO success and failure, drawing attention to issues such as overpricing, underpricing, and market volatility. The paper also provides policy implications, suggesting improvements in investor protection, regulatory frameworks, and market liquidity to enhance IPO outcomes. Recommendations for promoting financial literacy, encouraging retail and institutional participation, and ensuring transparent use of IPO proceeds are also discussed. Ultimately, the article aims to provide a comprehensive understanding of the economic drivers behind IPO performance and offer strategies to strengthen India's IPO market.

Keywords: Economic Variables, Initial Public Offerings (IPOs), IPO Performance, Macroeconomic Indicators, Monetary Policies

Introduction

An Initial Public Offering (IPO) is a critical event in the lifecycle of a company, marking its transition from a privately held entity to a publicly traded one. In the Indian financial market, IPOs have long been a vital mechanism for companies to raise capital for expansion, innovation, and debt repayment. The Indian IPO market has witnessed significant evolution over the decades, driven by regulatory reforms, market dynamics, and changing investor behaviour. IPOs not only provide companies with access to a broader pool of investors but also offer the public an opportunity to participate in a company's growth story, fostering wealth creation and enhancing economic participation.The Indian IPO market operates under the regulatory oversight of the Securities and Exchange Board of India (SEBI). SEBI has implemented several measures to ensure transparency, investor protection, and fair pricing in the IPO process. Companies planning to go public are required to disclose extensive financial and operational information, enabling investors to make informed decisions. This rigorous regulatory framework has contributed to the development of a robust and trustworthy IPO market in India. Additionally, the introduction of mechanisms such as the book-building process and anchor investors has further streamlined the IPO process, making it more efficient and investor-friendly.

India's IPO landscape is characterized by its diversity, with companies from various sectors, including technology, healthcare, manufacturing, and consumer goods, entering the public market. This sectorial diversity reflects the vibrancy of the Indian economy and the entrepreneurial spirit of its businesses. Over the years, the IPO market in India has seen several milestones, including mega listings of companies such as Reliance Power, Zomato, and LIC, which have set benchmarks in terms of valuation and investor interest. These landmark IPOs have highlighted the growing appetite of Indian and foreign investors for equity investments in emerging markets.The performance of IPOs in India is closely tied to broader economic and market conditions. Periods of economic growth, buoyant stock markets,

and low interest rates often lead to heightened IPO activity, as companies find favourable conditions for raising capital. Conversely, economic downturns and market volatility can dampen investor sentiment, leading to delays or cancellations of IPO plans. Despite these cyclical challenges, the Indian IPO market has shown resilience, with a steady pipeline of companies seeking to list on stock exchanges such as the Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE).

In recent years, technological advancements and digital platforms have revolutionized the way IPOs are conducted in India. The introduction of online bidding platforms and mobile applications has made the process of applying for IPOs seamless and accessible to a broader demographic. Retail investors, in particular, have emerged as a significant force in the Indian IPO market, often subscribing to shares in large numbers, reflecting their growing financial literacy and appetite for equity investments.Overall, IPOs in India serve as a barometer of the country's economic health and investment climate. They not only enable companies to achieve their growth objectives but also contribute to the deepening of capital markets and the democratization of wealth creation. As India continues to solidify its position as a global economic powerhouse, the IPO market is expected to play an increasingly pivotal role in driving economic progress and fostering innovation.

Key Metrics of IPO Performance

Key metrics of IPO performance are crucial for assessing how well an initial public offering performs in the market and evaluating its success from both the company's and investor's perspectives. These metrics provide insights into the demand, pricing, and future growth potential of a company after it transitions from a private entity to a publicly traded one.

One of the most important metrics is the listing day return or first-day return, which reflects the percentage change in the stock price from the issue price to the closing price on the first day of trading. This metric is often used to gauge market sentiment and investor enthusiasm for the IPO. A strong listing day return indicates that the market has responded positively to the company's public debut, while a weak or negative return suggests less investor confidence in the offering.

Another key metric is the subscription level, which represents the number of shares investors have bid for relative to the number of shares available in the IPO. This is typically expressed as a multiple, known as the "oversubscription ratio." A higher subscription level indicates strong demand for the IPO, while low or no oversubscription can signal weak investor interest. Subscription levels can also be broken down by investor category, such as retail, qualified institutional buyers (QIBs), and non-institutional investors, to provide more detailed insights into who is driving the demand.

Price-to-earnings (P/E) ratio is another vital metric, particularly for evaluating the valuation of the company compared to its earnings. The P/E ratio of an IPO is calculated by dividing the issue price by the company's earnings per share (EPS). A high P/E ratio may suggest that the company is being priced at a premium, often based on future growth expectations, while a low P/E ratio could indicate that the company is undervalued or facing challenges in its financial performance. Investors closely monitor this ratio to assess whether the stock is overpriced or offers potential upside.

Long-term performance is also an essential metric for evaluating IPO success. It measures the stock's performance over a longer period after the IPO, typically ranging from three months to one year or more. Long-term performance helps assess whether the company's growth expectations were realized and whether the stock has appreciated or depreciated over time. Positive long-term performance suggests that the company has sustained its growth and that investors made sound decisions, whereas poor long-term performance may indicate that the company failed to meet market expectations.

Market capitalization after the IPO is another critical metric, representing the total value of the company's outstanding shares. Market capitalization can provide insights into how investors value the company and how it compares to other companies in the same sector. It is calculated by multiplying the post-IPO share price by the number of shares outstanding. A large market capitalization typically

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indicates investor confidence in the company's future prospects, while a smaller market cap could signal that the company faces challenges in gaining investor trust.

Finally, lock-up period performance is relevant when analysing IPOs. A lock-up period refers to the time frame during which insiders (such as executives, employees, and early investors) are restricted from selling their shares. The end of the lock-up period often results in a surge of selling activity, which can impact the stock price. The performance of a stock post-lock-up period is critical to understanding its stability and whether investor sentiment remains strong after insiders are allowed to sell.Collectively, these metrics provide a comprehensive view of an IPO's performance and offer valuable insights for investors and analysts assessing the potential for long-term success.

Factors Influencing IPO Success

The success of an Initial Public Offering (IPO) is influenced by a range of factors that shape both the investor sentiment and the long-term prospects of the company being listed. These factors can be broadly categorized into internal factors related to the company itself, external factors arising from the broader economic and market conditions, and the strategic decisions made during the IPO process. Understanding these factors helps to assess the likelihood of an IPO's success and its potential impact on the company's future growth.

Company Fundamentals: The financial health and business model of the company are among the most significant factors influencing IPO success. A company with strong financial performance, a solid growth trajectory, and a competitive business model is likely to attract more investor interest. Key financial indicators such as revenue growth, profitability, cash flow, and debt levels play a crucial role in shaping investor confidence. Investors are more likely to favour companies with a proven track record of generating profits or demonstrating clear paths to profitability. A clear vision, transparent governance practices, and a capable management team also contribute to the company's perceived value in the eyes of potential investors.

Valuation and Pricing Strategy: The way a company prices its shares during the IPO can significantly affect its success. An overly high valuation can lead to under-subscription or a lack of investor interest, while under-pricing might leave capital on the table, potentially leaving investors with less room for returns. The company's underwriters typically play a key role in setting the IPO price, factoring in market conditions, investor appetite, and peer valuations. A well-priced IPO that balances the company's capital raising goals with investor interests tends to perform better in the market.

Market Conditions: Broader market conditions, both domestically and globally, have a direct impact on the success of an IPO. A bull market, characterized by rising stock prices and investor optimism, is generally more conducive to successful IPOs, as it reflects positive sentiment toward investing in new stocks. Conversely, a bear market or times of economic uncertainty can dampen investor enthusiasm and make IPOs less successful. Factors such as market volatility, inflation, interest rates, and geopolitical risks can all influence investor sentiment and, therefore, IPO performance. Market stability provides investors with the confidence to take risks on newly listed companies.

Industry and Sector Trends: The performance of an IPO can also depend on the trends and outlook of the industry or sector to which the company belongs. Companies in fast-growing sectors such as technology, pharmaceuticals, or renewable energy often enjoy more attention from investors, as these industries are seen as offering substantial growth potential. On the other hand, companies in stagnant or declining sectors might struggle to attract investor interest, even if their financial fundamentals are solid. The perceived potential for industry-specific growth, innovation, and demand plays a significant role in determining the success of an IPO.

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Timing of the IPO: The timing of an IPO is crucial for its success. This includes both the timing within the market cycle and the timing within the company's growth journey. For example, launching an IPO during a period of market exuberance can help the company achieve a higher valuation and stronger demand for its shares. Additionally, the company's readiness to go public, in terms of its operational efficiency, financial transparency, and corporate governance, is important. Companies that are strategically prepared to handle the demands and scrutiny of being publicly listed are more likely to achieve long-term success post-IPO.

Investor Sentiment and Demand: The demand for a particular IPO is largely driven by investor sentiment, which can be influenced by various external factors such as media coverage, analyst recommendations, and overall market mood. If investors are generally optimistic about the economy or the industry in which a company operates, they are more likely to participate in the IPO. Conversely, a lack of investor confidence in the market or the company's prospects can result in weak demand, under-subscription, or a poor listing performance. Investor sentiment is often shaped by factors such as past IPO performances, economic stability, and general market trends.

Regulatory Environment: The regulatory framework surrounding the IPO process also plays a critical role in determining its success. In India, the Securities and Exchange Board of India (SEBI) establishes guidelines to ensure transparency, investor protection, and fairness in the IPO process. Companies must adhere to a rigorous disclosure process, which involves providing detailed financial and operational information. A well-regulated IPO market fosters investor confidence, while concerns over governance or regulatory uncertainties can negatively impact investor enthusiasm. The credibility and efficiency of regulatory bodies influence the public's perception of the IPO process.

Marketing and Roadshow: The marketing efforts and roadshows conducted by the company and its underwriters are important in generating interest in the IPO. Roadshows allow the company to interact directly with potential investors, giving them insights into the company's strategy, vision, and financial outlook. Effective communication of the company's value proposition, combined with a strong narrative that connects the company's story to market demand, can significantly boost investor interest. Marketing the IPO to the right investor segments, including institutional investors, retail investors, and high-net-worth individuals, is crucial for maximizing demand.

Underwriting and Lead Managers: The reputation and capabilities of the underwriters and lead managers play a key role in the IPO process. Underwriters are responsible for pricing the offering, marketing it to investors, and stabilizing the post-IPO stock price. Their expertise in determining an appropriate issue price and structuring the offering, as well as their track record in managing successful IPOs, can significantly influence the outcome. A well-respected underwriting team can enhance investor confidence, making the IPO more attractive.

Lock-Up Period: The lock-up period, which typically lasts for 90 to 180 days post-IPO, during which insiders are restricted from selling their shares, can also influence IPO success. The expiration of the lock-up period often leads to an increase in the stock's volatility, as insiders may begin to sell their shares. If the stock has performed well, this can result in additional investor confidence, but if the stock has underperformed, it may lead to further price declines. How investors react to the lock-up period and whether there is excessive selling when it expires can have a significant effect on the long-term success of the IPO.

Macroeconomic Indicators: Macroeconomic indicators are key statistics that provide insights into the overall economic performance of a country or region. These indicators help policymakers, economists, and investors assess the health of an economy, forecast future trends, and make informed decisions. In

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the context of IPO performance, macroeconomic indicators can influence investor sentiment, market liquidity, and the overall investment climate. Here are some of the most important macroeconomic indicators:

Gross Domestic Product (GDP): GDP is one of the most widely used indicators of a country's economic health. It measures the total value of all goods and services produced within a country during a specific period. A growing GDP typically signals a healthy and expanding economy, which can boost investor confidence and lead to favourable conditions for IPOs. On the other hand, a shrinking or stagnant GDP often signals economic weakness, which may dampen investor appetite for new listings.

Inflation Rate: The inflation rate measures the rate at which the general level of prices for goods and services rises, causing purchasing power to fall. A moderate inflation rate typically suggests a stable economy, whereas high inflation can lead to uncertainty and volatility, making it difficult for companies to price their IPOs effectively. Low inflation rates, conversely, can create a favourable environment for IPOs by maintaining the purchasing power of consumers and stabilizing market conditions.

Unemployment Rate: The unemployment rate indicates the percentage of the labour force that is actively seeking work but is unable to find employment. A high unemployment rate can signal economic distress, which may dampen consumer spending and business investment, reducing demand for IPOs. A lower unemployment rate typically reflects a healthy job market, contributing to consumer confidence and economic growth, which may favour IPO performance.

Interest Rates: Interest rates, set by a country's central bank, have a direct impact on the cost of borrowing and investing. High interest rates can make borrowing more expensive for companies, reducing their ability to raise capital or expand operations. For IPOs, high interest rates may discourage investors from allocating funds to the stock market, as they may prefer safer, higher-yielding assets such as bonds. Conversely, low interest rates reduce borrowing costs and can stimulate both corporate expansion and stock market activity, creating a more favourable environment for IPOs.

Exchange Rates: The exchange rate measures the value of a country's currency relative to others. Fluctuating exchange rates can impact the attractiveness of a country's financial markets to foreign investors. A depreciating currency can make it more expensive for foreign investors to purchase shares, potentially limiting demand for IPOs. Conversely, a stable or appreciating currency may enhance investor confidence and lead to more favourable IPO conditions, particularly for companies seeking international investment.

Consumer Confidence Index (CCI): The Consumer Confidence Index measures the confidence of consumers in the country's economic prospects. High consumer confidence generally indicates that people feel secure in their financial situations and are more likely to spend money, stimulating economic growth. A high CCI can indicate a strong economy, which might encourage investors to be more optimistic about new stock listings, thereby boosting IPO demand. Conversely, low consumer confidence suggests economic uncertainty and can lead to lower market participation in IPOs.

Retail Sales: Retail sales are an important indicator of consumer spending patterns, which is a key driver of economic growth. An increase in retail sales suggests that consumers are willing to spend, which often translates to higher company revenues and a stronger economy. Strong retail sales can encourage investors to purchase stocks, including those in newly listed companies, making IPOs more attractive. Weak retail sales, on the other hand, may indicate consumer reluctance to spend, potentially reducing investor appetite for IPOs.

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Business Confidence Index (BCI): The Business Confidence Index reflects the sentiment of business leaders and companies about the future of the economy. A high BCI indicates optimism, with businesses expecting growth and expansion. This optimism can lead to increased investments in the stock market, including in IPOs. A low BCI suggests caution or pessimism among business leaders, which can lead to a slowdown in economic activity and a dampening of IPO market conditions.

Government Fiscal Policy: Government fiscal policy, including government spending and taxation, has a profound impact on economic performance. Expansionary fiscal policies, such as increased government spending or tax cuts, can stimulate economic growth and create a favourable environment for IPOs by boosting corporate profitability and investor sentiment. On the other hand, contractionary fiscal policies, such as spending cuts or tax increases, can reduce disposable income and limit business investment, potentially leading to lower IPO activity.

Stock Market Indices (e.g., Sensex, Nifty): Stock market indices such as the Sensex and Nifty reflect the overall performance of the stock market and investor sentiment. Strong performance in these indices, driven by rising stock prices and investor optimism, can signal a favourable environment for IPOs. A rising stock market can lead to increased investor participation in IPOs, as investors seek to capitalize on market momentum. Conversely, a market downturn or increased volatility may reduce investor appetite for IPOs.

Trade Balance: The trade balance, which is the difference between a country's exports and imports, can also influence the economy's performance. A trade surplus indicates that a country is exporting more than it imports, which can boost domestic production and economic growth. On the other hand, a trade deficit may signal economic challenges, such as the need to borrow funds from other countries, which can affect investor sentiment and potentially harm IPO success.

Monetary Policies: Monetary policy refers to the actions taken by a country’s central bank or monetary authority to manage the money supply, interest rates, and overall economic activity. These policies are designed to achieve macroeconomic objectives such as controlling inflation, stabilizing the currency, and promoting economic growth. In India, the Reserve Bank of India (RBI) is responsible for implementing monetary policies to influence economic conditions. Monetary policy has a direct impact on various economic variables, including interest rates, inflation, exchange rates, and overall economic growth, all of which can affect the performance of Initial Public Offerings (IPOs).
There are two primary types of monetary policies:

Expansionary Monetary Policy: Expansionary monetary policy is typically employed when the economy is underperforming or in a recession. The central bank adopts measures to increase the money supply and lower interest rates in order to stimulate economic activity. The objective is to encourage borrowing, investment, and consumption, thereby boosting demand for goods and services. During periods of economic slowdown or low inflation, an expansionary stance helps to invigorate business activity, promote employment, and support growth.
The main tools used in expansionary monetary policy include:

- Lowering the Policy Rates: The RBI lowers interest rates, such as the repo rate (the rate at which banks borrow from the RBI), to make borrowing cheaper for banks, businesses, and consumers. This increases the supply of money in the economy.
- Open Market Operations (OMO): The central bank buys government securities from the open market to inject liquidity into the banking system, encouraging banks to lend more.
- Reducing the Cash Reserve Ratio (CRR): The CRR is the percentage of a bank’s total deposits that it must keep with the RBI. Lowering the CRR frees up more funds for banks to lend, stimulating economic activity.

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For IPOs, an expansionary monetary policy typically results in lower interest rates, making borrowing easier for companies and boosting investor sentiment. Lower borrowing costs encourage businesses to expand and raise funds, which could lead to a higher number of IPOs. Additionally, with lower interest rates, investors may seek higher returns in the equity markets, driving demand for IPOs and increasing the likelihood of successful listings.

Contractionary Monetary Policy

A contractionary monetary policy, also known as a tight monetary policy, is implemented when the economy is growing too quickly, leading to high inflation or overheating. The central bank raises interest rates and reduces the money supply to control inflation and prevent excessive economic growth that could lead to asset bubbles or financial instability. A contractionary policy aims to make borrowing more expensive, slow down consumption and investment, and stabilize the economy.

The main tools used in contractionary monetary policy include:

- Raising the Policy Rates: The RBI increases interest rates to make borrowing more expensive, reducing the amount of money circulating in the economy. This discourages excessive borrowing by consumers and businesses.
- Selling Government Securities: The RBI may sell government securities in the open market to absorb excess liquidity from the financial system.
- Increasing the Cash Reserve Ratio (CRR): Raising the CRR requires banks to hold a larger proportion of their deposits with the RBI, reducing the amount available for lending.

For IPOs, a contractionary monetary policy can have a cooling effect on the market. Higher interest rates make borrowing more expensive for companies, potentially leading to fewer IPOs. Additionally, investors may become more risk-averse when interest rates rise, as they may find fixed-income assets like bonds more attractive relative to equities. As a result, there may be reduced demand for IPOs, particularly in a high-interest-rate environment.

Impact of Monetary Policies on IPOs in India

Monetary policies play a crucial role in shaping the broader economic environment, which in turn affects the IPO market in India. The policies directly influence investor sentiment, corporate financing conditions, and the general market climate. Here are some specific ways in which monetary policy can impact IPOs:

Interest Rates and Capital Costs: Changes in interest rates, which are a key tool of monetary policy, can have a profound effect on IPOs. Low interest rates, resulting from an expansionary monetary policy, make borrowing cheaper and more attractive for businesses. Companies are more likely to raise capital through debt or equity in a low-interest-rate environment, as the cost of financing is reduced. This can lead to a surge in IPO activity as businesses seek to tap into favourable market conditions. Conversely, high interest rates can raise the cost of capital, making it more expensive for companies to raise funds through IPOs, thereby potentially reducing the number of IPOs launched.

Investor Behaviour and Sentiment: Monetary policy has a significant impact on investor sentiment. When the central bank adopts an expansionary stance, it signals to the market that it is committed to stimulating growth. This can create a positive atmosphere for investors, making them more willing to invest in risky assets like stocks, including IPOs. On the other hand, contractionary monetary policy, which raises interest rates to curb inflation, can make investors more risk-averse. In a higher-rate environment, investors may prefer safer assets like bonds or deposits, leading to reduced demand for IPOs.

Liquidity in the Market: Monetary policy directly affects market liquidity, which plays a critical role in the success of an IPO. When the central bank follows an expansionary policy, it ensures that there is

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sufficient liquidity in the system, making it easier for investors to purchase shares in an IPO. A liquidity-driven market can also drive higher stock prices post-IPO, as investors are more willing to participate in the stock market. Conversely, a contractionary policy reduces liquidity by tightening money supply and raising borrowing costs, which can dampen demand for IPOs and result in lower pricing or failed IPOs.

Economic Growth and Corporate Performance: Monetary policies designed to stimulate economic growth can have a positive impact on corporate earnings, which in turn influences IPO performance. When interest rates are low, consumers and businesses are more likely to spend and invest, leading to stronger economic growth. Companies that are growing rapidly in such an environment may decide to go public to capitalize on favourable market conditions. On the other hand, if the central bank raises interest rates to cool down an overheated economy, businesses may experience slower growth or even contraction, which can affect their decision to launch an IPO or reduce their attractiveness to investors.

Inflation and Valuation: Inflation is another important factor influenced by monetary policy that impacts IPO pricing and investor expectations. High inflation often leads to higher input costs for companies, which can erode profit margins and affect long-term growth prospects. In response, the central bank may adopt contractionary monetary policy to curb inflation, but this can also slow down the economy and dampen demand for IPOs. Companies with high inflation-related risks may find it difficult to attract investors at favourable valuations during periods of high inflation.

Conclusion

In conclusion, the performance of Initial Public Offerings (IPOs) in India is influenced by a complex interplay of economic variables, regulatory frameworks, market conditions, and investor sentiment. The success of IPOs is closely tied to macroeconomic indicators such as GDP growth, inflation, and interest rates, as well as global economic factors and monetary policies. A favourable regulatory environment, transparency in pricing, and strong investor protection are crucial to ensuring fair and efficient IPO markets. Empirical evidence highlights that while IPOs in India have shown strong demand, especially in favourable economic conditions, challenges such as overpricing, under-pricing, and market volatility still persist. To enhance IPO success, policymakers must focus on improving investor education, strengthening the role of institutional investors, and ensuring that funds raised through IPOs are used effectively for growth and expansion. Additionally, addressing sector-specific challenges and promoting foreign investment can contribute to the broader development of the IPO ecosystem. Overall, a combination of robust regulatory practices, investor confidence, market liquidity, and macroeconomic stability will be key drivers for the continued growth and success of the IPO market in India. By adopting targeted reforms and focusing on long-term sustainability, India can build a thriving IPO market that supports both corporate growth and investor interests, contributing significantly to the nation's economic development.

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ENVIRONMENTAL ACCOUNTING IN INDIA: ISSUES, CHALLENGES AND FUTURE PERSPECTIVES

By
Pandya Pravin Bipinchandra
Ph.D. Scholar
&
Dr. Chirag A. Prajapati
Assistant Professor
Faculty of Commerce
Monark University, Vahelal, Ahmedabad

Abstract

Environmental accounting has emerged as a critical tool for integrating sustainability into business practices by quantifying and reporting environmental impacts. In the Indian context, its adoption is increasingly essential due to the nation's dual challenges of rapid economic growth and environmental degradation. This article explores the concept, historical evolution, and importance of environmental accounting, highlighting its legislative framework, key issues, and challenges. It delves into the lack of standardization, limited expertise, data inaccuracies, and regulatory weaknesses that hinder its implementation in India. Future perspectives emphasize the role of global sustainability agendas, technological advancements, and green financing in driving its adoption. The article also offers actionable recommendations, including developing standardized frameworks, leveraging technology, enhancing education, and strengthening regulations. By addressing these barriers, India can ensure that environmental accounting becomes a cornerstone of its sustainability strategy, balancing economic progress with ecological preservation.

Keywords: Environmental Accounting, Sustainability, Legislative Framework, Green Financing, Regulatory Enforcement

Introduction

Environmental accounting is a comprehensive framework that integrates environmental costs and benefits into traditional accounting systems. It involves identifying, measuring, and reporting the environmental impacts of an organization's activities, both in monetary and non-monetary terms. The practice extends beyond financial reporting to include qualitative and quantitative assessments of resource usage, waste generation, and pollution control measures. Environmental accounting aims to provide a clearer picture of an organization's interaction with the environment, enabling stakeholders to make informed decisions aligned with sustainability goals. The importance of environmental accounting lies in its potential to bridge the gap between economic development and environmental preservation. In a rapidly industrializing country like India, where environmental degradation poses significant challenges, this framework helps organizations assess the ecological consequences of their operations. By incorporating environmental costs into financial statements, businesses can identify inefficiencies, reduce resource wastage, and improve operational sustainability. Additionally, environmental accounting serves as a critical tool for policymakers to design regulations and incentives that encourage sustainable practices across industries.

Furthermore, environmental accounting enhances corporate transparency and accountability. As stakeholders, including investors, consumers, and governments, increasingly prioritize sustainability, businesses that adopt environmental accounting practices gain a competitive edge. It also fosters long-term value creation by integrating environmental risks and opportunities into strategic decision-making. In essence, environmental accounting is not just a reporting tool but a cornerstone for achieving sustainable economic growth and environmental stewardship in India.

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Literature Review

Sruthiya V N and Jasmine VM (2019): The authors explored the concept of environmental accounting and its practices in India. They emphasized that environmental accounting involves identifying, measuring, and communicating the costs associated with a company's environmental impact. The study highlighted that while awareness about environmental issues is increasing among Indian businesses, the adoption of standardized environmental accounting practices remains limited. The authors called for a more structured approach to integrate environmental costs into financial decision-making processes.

Raju (2018): This study highlighted that environmental accounting in India is not widespread, and there is a lack of clarity and transparency in the policy framework. The author noted that while many businesses include information about their environmental initiatives in their annual reports, this is often only a superficial acknowledgment, and comprehensive environmental accounting practices are not yet mainstream.

Ministry of Statistics and Programme Implementation (2021): The Ministry released a strategy for environmental-economic accounts in India, covering a full range of issues from the application of economic principles to environmental management. The studies encompassed topics such as pollution control, resource management, and biodiversity conservation. The strategy aimed to highlight the economic consequences of environmental degradation and the decline in ecosystem services, emphasizing the need for integrating environmental considerations into economic planning.

Kumar (2021): In this analytical perspective, the author reviewed the evolution of environmental accounting in India. The paper discussed how the concept emerged, its scope, and the challenges faced in its implementation. The study concluded that while there is a growing recognition of the importance of environmental accounting, its adoption is hindered by a lack of standardized frameworks and insufficient regulatory support.

Legislative Framework and Policies

The legislative framework and policies in India play a pivotal role in promoting environmental accounting by setting guidelines and enforcing compliance with environmental standards. Over the years, the Indian government has introduced a series of laws, regulations, and initiatives aimed at ensuring that industries recognize and mitigate their environmental impacts while integrating sustainability into their operations. One of the earliest legislative milestones was the Water (Prevention and Control of Pollution) Act, 1974, which sought to prevent water pollution by mandating industries to treat wastewater before disposal. This law marked the beginning of regulatory oversight for industries with significant environmental impacts. Similarly, the Air (Prevention and Control of Pollution) Act, 1981, and the Environmental Protection Act, 1986, established comprehensive frameworks for addressing air pollution and broader environmental challenges, respectively. These laws required industries to monitor emissions and effluents, laying the groundwork for environmental reporting.

The Companies Act, 2013, was a game-changer in integrating sustainability into corporate governance. Under Section 135, the Act introduced mandatory Corporate Social Responsibility (CSR) provisions, requiring companies meeting specified criteria to allocate at least 2% of their average net profits toward CSR activities, including environmental conservation. This legislation indirectly encouraged businesses to adopt environmental accounting practices to measure and report their ecological initiatives effectively.

International frameworks have also influenced India’s legislative landscape. The adoption of global reporting standards such as the Global Reporting Initiative (GRI) and the United Nations Sustainable Development Goals (SDGs) has prompted Indian corporations to align their reporting practices with international benchmarks. The Securities and Exchange Board of India (SEBI) introduced guidelines for Business Responsibility and Sustainability Reporting (BRSR) in 2021, requiring listed companies to disclose their ESG (Environmental, Social, and Governance) initiatives, further embedding environmental accountability into corporate reporting. Additionally, policies such as the National Action

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Plan on Climate Change (NAPCC) and sector-specific initiatives like the Perform, Achieve, and Trade (PAT) Scheme for energy-intensive industries highlight the government's commitment to fostering sustainability. These policies encourage industries to adopt resource-efficient practices and quantify their environmental impacts, facilitating the integration of such data into environmental accounting systems. While these legislative measures and policies provide a robust foundation, their implementation and enforcement remain inconsistent. Challenges such as inadequate monitoring mechanisms and the absence of a standardized framework for environmental accounting hinder their effectiveness. Nonetheless, the legislative framework continues to evolve, signaling a growing recognition of the importance of environmental accountability in India's journey toward sustainable development.

Key Issues in Environmental Accounting in India

Environmental accounting in India has gained attention as an essential tool for fostering sustainability and integrating environmental considerations into business operations. However, its implementation is fraught with several challenges that hinder its widespread adoption and effectiveness. These issues stem from both systemic and organizational barriers, making it difficult to establish a robust environmental accounting framework in the country. One of the primary issues is the lack of standardization in environmental accounting practices. Unlike financial accounting, which is governed by well-defined standards such as the Generally Accepted Accounting Principles (GAAP) and International Financial Reporting Standards (IFRS), environmental accounting lacks universally accepted guidelines. This results in inconsistencies in how organizations measure, report, and disclose their environmental impacts, making it difficult to compare or evaluate their efforts effectively.

Another critical challenge is inadequate awareness and expertise among businesses and stakeholders. Many organizations, especially small and medium enterprises (SMEs), are unaware of the importance of environmental accounting or lack the technical expertise to implement it. This knowledge gap prevents them from recognizing its potential to improve operational efficiency and enhance sustainability. Data availability and quality also pose significant issues in environmental accounting. Collecting accurate and reliable data on environmental parameters such as energy consumption, emissions, and waste generation is a complex task. In India, this challenge is exacerbated by inadequate infrastructure for environmental monitoring and reporting, particularly in smaller cities and rural areas. The absence of reliable data undermines the credibility of environmental reports and hampers decision-making.

Resistance to adopting environmental accounting practices is another obstacle, often driven by economic constraints. Many businesses perceive environmental accounting as a cost center rather than a value-adding process. The initial investments required for setting up systems to monitor and report environmental impacts, along with ongoing operational costs, deter many organizations from adopting these practices. Additionally, the regulatory and compliance landscape in India is often criticized for its inconsistencies and weak enforcement. While environmental laws exist, their implementation varies across states, and penalties for non-compliance are not always stringent. This lack of uniform enforcement reduces the incentive for businesses to adopt rigorous environmental accounting practices.

Finally, the absence of stakeholder pressure and incentives also limits the adoption of environmental accounting in India. Although global investors and consumers are increasingly prioritizing sustainability, domestic stakeholders often lack the same level of awareness or influence. Without strong demand from consumers, investors, and regulators, organizations may not feel compelled to integrate environmental accounting into their operations. Addressing these key issues is essential to ensure that environmental accounting becomes a mainstream practice in India. This will require coordinated efforts from policymakers, businesses, and civil society to overcome these barriers and build a culture of sustainability and accountability.

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Challenges in Environmental Accounting Practices

Environmental accounting, despite its growing importance, faces several challenges in its implementation and widespread adoption. These challenges, rooted in structural, technical, and cultural barriers, hinder organizations from effectively integrating environmental considerations into their accounting practices. In the context of India, these obstacles are particularly pronounced due to the country's unique economic, regulatory, and social landscape. A significant challenge lies in the lack of a standardized framework for environmental accounting. Unlike financial accounting, which is governed by universal principles such as IFRS or GAAP, there is no unified system for measuring and reporting environmental costs and benefits. This absence of standardization results in inconsistent practices across industries, making it difficult to compare environmental performance or establish benchmarks.

Another critical issue is the shortage of expertise and knowledge among professionals. Environmental accounting requires specialized skills to identify, measure, and report environmental impacts accurately. In India, where traditional accounting practices dominate, there is a significant gap in training and education related to environmental accounting. This deficiency affects the quality and reliability of environmental data and reports. The high costs associated with implementing environmental accounting systems pose another obstacle, particularly for small and medium enterprises (SMEs). Establishing mechanisms to monitor resource usage, emissions, and waste requires substantial initial investments and operational expenses. For businesses operating on tight margins, these costs are often seen as a burden rather than a necessary investment.

Data availability and accuracy are also persistent challenges in environmental accounting. Reliable data on resource consumption, pollution levels, and ecological impacts is critical for meaningful environmental reporting. However, in many parts of India, especially in rural or industrially underdeveloped areas, there is a lack of robust infrastructure for data collection and monitoring. This leads to gaps in information and undermines the credibility of environmental accounting practices. Resistance to adopting environmental accounting is further compounded by weak regulatory enforcement. While India has a comprehensive set of environmental laws and policies, their implementation is often inconsistent, with limited oversight and accountability. Businesses may not feel compelled to invest in environmental accounting if they perceive regulatory compliance as lax or penalties as minimal.

Another challenge is the lack of stakeholder awareness and demand. Environmental accounting thrives in environments where consumers, investors, and regulators prioritize sustainability. In India, while global stakeholders are driving the adoption of environmental, social, and governance (ESG) practices, domestic awareness remains relatively low. Without strong pressure from local stakeholders, businesses may not prioritize environmental accounting.

Finally, cultural and organizational inertia plays a role in slowing the adoption of environmental accounting. Many businesses view environmental initiatives as peripheral to their core operations and fail to recognize the long-term benefits of sustainability, such as enhanced brand reputation, operational efficiency, and risk mitigation. Addressing these challenges requires a multifaceted approach, including creating awareness, building capacity through training, offering financial incentives, and strengthening regulatory frameworks. By overcoming these obstacles, environmental accounting can become a critical tool for fostering sustainable development and ensuring that economic growth does not come at the expense of ecological health.

Future Perspectives and Recommendations for Environmental Accounting

Environmental accounting in India holds significant potential to evolve into a mainstream practice, driven by growing awareness of sustainability, advancements in technology, and the increasing influence of global frameworks. However, to realize this potential, proactive steps are needed to address current challenges and align practices with future needs. The following perspectives and recommendations outline the path forward for environmental accounting in India.

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Future Perspectives

The future of environmental accounting in India will likely be shaped by the convergence of global and local sustainability agendas. International initiatives such as the United Nations' Sustainable Development Goals (SDGs), the Paris Agreement on climate change, and ESG (Environmental, Social, and Governance) standards are expected to influence corporate behaviour. As Indian companies integrate into global value chains, they will face increasing pressure to adopt transparent and comprehensive environmental accounting practices.Technological advancements will play a transformative role in environmental accounting. Tools such as blockchain for transparent reporting, artificial intelligence for predictive analytics, and Internet of Things (IoT) devices for real-time monitoring will enable businesses to track their environmental impact with greater accuracy. These technologies can help overcome current barriers like data gaps and inefficiencies in monitoring systems.The rise of green financing and sustainable investing is another trend that will drive the adoption of environmental accounting. Investors increasingly favor companies that demonstrate strong environmental stewardship. This shift will create incentives for businesses to adopt standardized accounting practices to attract investment and enhance their reputation.

Recommendations

- Develop Standardized Frameworks: There is an urgent need for a universally accepted framework for environmental accounting in India. Regulatory bodies such as the Ministry of Corporate Affairs (MCA) and SEBI, in collaboration with international organizations, should develop guidelines that standardize metrics, reporting formats, and evaluation criteria.
- Incorporate Environmental Accounting into Education and Training: Professional bodies like the Institute of Chartered Accountants of India (ICAI) and universities should include environmental accounting in their curricula. This will equip the next generation of professionals with the skills needed to implement and manage these practices effectively.
- Leverage Technology:Companies should invest in advanced tools for monitoring and reporting environmental data. Governments and industry associations can facilitate this by providing subsidies or creating shared technology platforms, particularly for SMEs that face resource constraints.
- Strengthen Regulatory Enforcement: The government must enhance the enforcement of environmental regulations to ensure compliance. This includes stricter penalties for non-compliance and regular audits to verify the accuracy of environmental reports.
- Create Financial Incentives: To encourage businesses to adopt environmental accounting, policymakers should introduce financial incentives such as tax benefits, subsidies for green initiatives, or reduced interest rates for loans tied to sustainable practices.
- Promote Public Awareness and Stakeholder Engagement: Efforts should be made to educate stakeholders, including consumers, investors, and employees, about the importance of environmental accounting. Increased awareness will create demand for sustainability and accountability, prompting businesses to prioritize environmental considerations.
- Encourage Collaboration and Best Practices Sharing: Companies can benefit from sharing knowledge and best practices through industry forums and partnerships. Collaborative initiatives can help smaller firms learn from larger organizations and adopt cost-effective solutions.
- Focus on Sector-Specific Strategies: Different industries have unique environmental challenges. Customized strategies and accounting practices tailored to sectors like manufacturing, agriculture, and services can ensure more targeted and effective outcomes.

By addressing these areas, India can transition to a robust and standardized system of environmental accounting. This will not only enhance corporate transparency and accountability but also

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contribute to the nation's sustainable development goals, ensuring that economic growth is balanced with environmental stewardship.

Conclusion

Environmental accounting is a vital tool for achieving sustainable development in India, bridging the gap between economic growth and ecological preservation. It enables organizations to assess, monitor, and report their environmental impacts, thereby fostering greater accountability and transparency. However, its widespread adoption is hampered by significant challenges, including the lack of standardization, inadequate expertise, high implementation costs, and weak regulatory enforcement. Addressing these issues requires a concerted effort from policymakers, businesses, educators, and civil society to build a robust framework that supports environmental accounting practices.The future of environmental accounting in India is promising, driven by global sustainability agendas, technological advancements, and the rising demand for ESG compliance. To unlock its full potential, India must prioritize the development of standardized frameworks, strengthen regulatory mechanisms, and promote awareness among stakeholders. Investments in technology, education, and financial incentives will also play a pivotal role in overcoming existing barriers.By integrating environmental accounting into core business practices, India can align its economic aspirations with ecological stewardship. This approach will not only enhance the competitiveness of Indian businesses on a global scale but also contribute to long-term environmental sustainability, ensuring a balance between economic progress and the health of the planet for future generations.

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A COMPREHENSIVE ANALYSIS OF CARBON CREDIT ACCOUNTING WITH REFERENCE TO INDIA

By
Suhaag D. Maheria
Assistant Professor
Shri K. K. Shastri Government Commerce College, Ahmedabad.

Abstract

This article examines the concept of carbon accounting in India, focusing on its significance in addressing climate change and promoting sustainable development. It discusses the theoretical framework underpinning carbon accounting, outlines the study's objectives, and provides a detailed analysis of the current status of carbon accounting practices in India. By exploring important definitions and the regulatory landscape, this article aims to highlight the challenges and opportunities in the field of carbon accounting, ultimately providing recommendations for improving practices and regulations.

Keywords: Carbon Accounting, Greenhouse gas (GHG) accounting, ESG Accounting, Carbon Credit Accounting, Sustainability Accounting

Introduction

As global temperatures continue to rise and the effects of climate change become increasingly severe, the need for comprehensive carbon accounting practices has never been more critical. Carbon accounting refers to measuring and reporting greenhouse gas emissions, specifically carbon dioxide and its equivalents, attributed to various activities within an organization or country. In India, a developing nation with significant greenhouse gas emissions, carbon accounting plays a vital role in achieving climate targets and fostering sustainable growth. This article explains the theoretical framework surrounding carbon accounting, the objectives of implementing such practices, and the current state of carbon accounting in India.

This paper extensively discusses carbon credit accounting, particularly within the Indian context. Several articles and research papers analyze the subject, highlighting its evolution, implications, and challenges.The concept of carbon credits emerged from the Kyoto Protocol, aiming to curb greenhouse gas emissions. Developed nations, exceeding emission limits, purchase credits from developing countries like India and China that have reduced emissions below a baseline. India has become a significant player in this market, generating and selling Certified Emission Reductions (CERs). However, the lack of standardized accounting procedures for carbon credits remains a major challenge. The accounting treatment of CERs is debated. Some suggest treating them as inventory until sold, while others propose classifying them as intangible assets. The Institute of Chartered Accountants of India (ICAI) issued a guidance note, but inconsistencies and ambiguities persist regarding cost determination, revenue recognition, and ancillary cost treatment. Taxation aspects also remain unclear, with varying treatments across countries. India's accounting practices lack uniformity, causing challenges for financial statement users.

The articles also explore the broader implications of carbon accounting, including its role in promoting sustainable energy development, environmental stewardship, and resource efficiency. It also highlights the importance of carbon literacy and corporate social responsibility (CSR). The need for clear policies and guidelines, along with capacity building, is emphasized to improve carbon accounting practices in India and contribute to global climate objectives. The lack of a proper policy and separate accounting standards for carbon trading is consistently identified as a major obstacle to the market's full potential.

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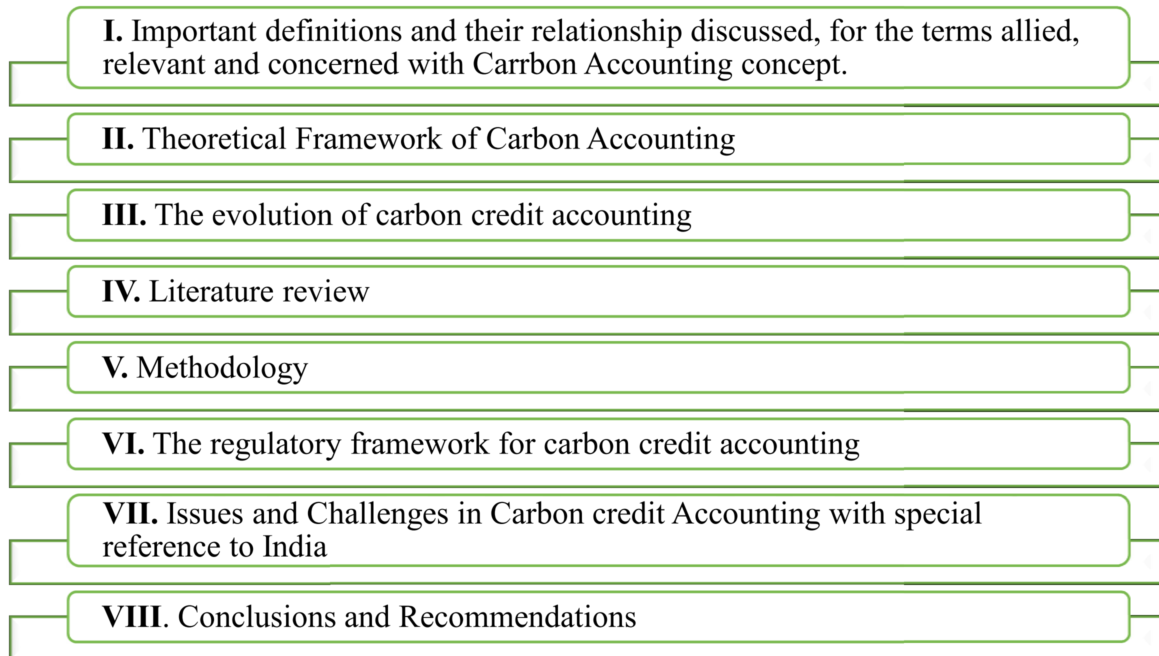

Figure 1: Flow of Article (Author Generated)

Definition of Carbon Accounting:

According to the definition proposed by Kristin Stechemesser and Edeltraud Guenther in their paper titled "Carbon accounting: a systematic literature review" carbon accounting comprises the recognition, the non-monetary and monetary evaluation, and the monitoring of greenhouse gas emissions on alllevels of the value chain and the recognition, evaluation, and monitoring of the effects of these emissions on the carbon cycle of ecosystems. Additionally, because of the effects of climate change, such as rising temperatures, decreased precipitation, or stability shifts like extreme weather occurrences, they wanted the word "carbon accounting" to be changed to "climate accounting."

Carbon Accounting and Greenhouse gas (GHG) accounting:

The official website of the Corporate Financial Institute, Canada mentions that Carbon accounting, is used interchangeably with greenhouse gas (GHG) accounting, and both the terms are similar but there is a key difference, carbon accounting refers only to carbon dioxide emissions, while GHG accounting refers to all greenhouse gases.The official website of IBM, USA mentions that "Carbon accounting, or greenhouse gas accounting, is the process of quantifying the number of greenhouse gases (GHGs) produced directly and indirectly from a business's or organization's activities within a set of boundaries"

According to the IPCC (an acronym for the Intergovernmental Panel on Climate Change), the primary greenhouse gases (GHGs) in the Earth's atmosphere are carbon dioxide (CO2), nitrous oxide (N2O), methane (CH4), water vapour (H2O), and ozone (O3). While Sulphur Hexafluoride (SF6), hydrofluorocarbons (HFCs), chlorofluorocarbons (CFCs), and perfluorocarbons (PFCs) are examples of man-made greenhouse gases.

ESG Accounting and Sustainability Accounting:

Environmental, social, and governance, or ESG, are the three non-financial pillars that businesses report on to comply with new laws and give investors transparency. ESG reporting goes beyond conventional accounting and financial statement reporting to concentrate on ESG reporting; it is

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sometimes referred to as sustainability accounting or ESG accounting. It entails quantifying, evaluating, and disclosing the effects of an entity's operations on corporate governance, diversity, climate, and other related aspects.

Are carbon accounting and ESG accounting identical?

Carbon accounting and ESG (Environmental, Social, and Governance) accounting are interconnected yet distinct disciplines. Carbon accounting primarily concentrates on measuring and managing greenhouse gas emissions to address climate change objectives. In contrast, ESG accounting adopts a comprehensive approach, assessing an organization's sustainability performance across environmental, social, and governance dimensions, with carbon accounting serving as a subset within the environmental pillar.

Definition of Carbon Credit and Carbon Credit Accounting:

A carbon credit is a generic term for any tradable certificate or permit representing the right to emit one tonne of carbon dioxide or the mass of another greenhouse gas with a carbon dioxide equivalent (tCO_2e) equivalent to one tonne of carbon dioxide.Carbon credit accounting is the process of measuring, recognizing, and reporting on carbon credits an organization generates or acquires. The carbon credits are generated through projects that reduce greenhouse gas emissions below a baseline level, and they can be traded in markets. The accounting for these credits is crucial for managing and mitigating climate change, ensuring transparency in emissions trading, and complying with regulations. The process involves tracking the amount of greenhouse gas emissions reduced or removed, which are represented by tradable certificates or permits (carbon credits). Different accounting treatments exist depending on how the credits are acquired (internally generated, purchased, or donated) and how they will be used (for compliance or sale). There are ongoing discussions and efforts to standardize carbon credit accounting practices, particularly in India, where there is significant potential for carbon credit generation.

Differentiation between Carbon accounting and Carbon Credit Accounting:

The rise of carbon accounting is directly linked to the development of carbon credits. While seemingly similar, there's a key distinction between the two.

Aspect	Carbon Accounting	Carbon Credit Accounting
Definition	The process of measuring and reporting greenhouse gas emissions from various activities.	The process of accounting for carbon credits earned or purchased, representing the right to emit one tonne of CO2.
Purpose	To track and manage an organization's overall carbon footprint and emissions reduction efforts.	To record and report the trading, acquisition, and sale of carbon credits as part of emissions trading schemes.
Scope	Encompasses all greenhouse gas emissions and mitigation strategies across an organization.	Focuses specifically on carbon credits, including their creation, certification, and financial implications.
Measurement	Involves calculating total emissions, monitoring changes, and implementing reduction strategies.	Involves tracking the quantity of carbon credits generated, sold, or used in carbon trading.
Reporting	Generally involves sustainability reporting to stakeholders and regulatory bodies.	Involves specific financial reporting of carbon assets in accordance with accounting standards.
Regulatory Framework	Governed by environmental regulations and sustainability frameworks.	Governed by carbon market regulations and accounting standards related to emissions trading.
Accounting Treatment	Usually treated as an operational cost or environmental impact in financial statements.	Treated as intangible assets or inventory, depending on the purpose and timing of their use or sale.
Financial Implications	Impacts operational costs and sustainability goals without direct financial transactions.	Directly affects revenue and financial reporting due to the buying and selling of carbon credits.

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Well-Articulated Theoretical Framework of Carbon Accounting

The theoretical framework for carbon accounting is grounded in environmental economics, sustainability theories, and corporate social responsibility (CSR). These three concepts are central to understanding carbon accounting; the theory of Environmental Economics emphasizes the relationship between economic activities and environmental consequences.

Carbon accounting serves as a tool for quantifying the environmental impact of economic activities, allowing for informed decision-making regarding emissions reduction. Sustainability theories advocate for balancing economic growth with environmental protection. Carbon accounting aligns with sustainability principles by promoting practices that reduce carbon footprints and enhance resource efficiency. CSR emphasizes the ethical responsibility of businesses to consider their environmental impact. Carbon accounting practices enable organizations to monitor their emissions and demonstrate accountability to stakeholders.

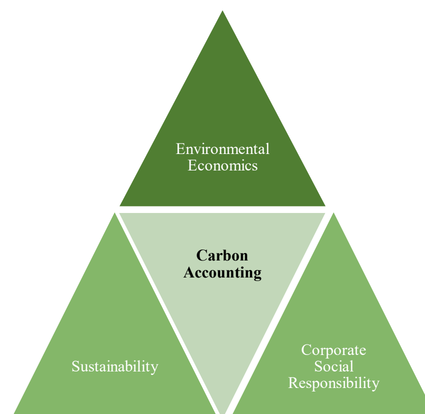

Figure 2: Theoretical Framework of Carbon Accounting (Author Generated)

The evolution of carbon credit accounting

Kyoto Protocol (1997): The adoption of the Kyoto Protocol marked a pivotal moment in carbon accounting. This international treaty set binding targets for developed countries to reduce their greenhouse gas emissions. It introduced the concept of carbon credits and established mechanisms such as the Clean Development Mechanism (CDM) and emissions trading systems to facilitate emission reductions.

Emergence of Carbon Markets: Following the Kyoto Protocol, carbon markets began to develop as a means to trade carbon credits. The European Union Emissions Trading System (EU ETS), launched in 2005, became the world's first major carbon market, enabling businesses to participate in emissions trading and offsetting to meet their reduction targets.

International Standards and Guidelines: As the need for standardized carbon accounting practices grew, international organizations developed guidelines for measuring and reporting greenhouse gas emissions. Initiatives like the Greenhouse Gas Protocol and various International Financial Reporting Standards (IFRS) provided frameworks for organizations to manage their carbon accounting.

Corporate Sustainability Reporting: Increasing stakeholder pressure led many companies to incorporate carbon accounting into their sustainability reporting. Frameworks such as the Global Reporting Initiative (GRI) and the Task Force on Climate-related Financial Disclosures (TCFD) encouraged businesses to disclose their carbon emissions and climate-related risks.

Advancements in Technology: Over the years, technological advancements have led to the development of sophisticated carbon accounting tools and software. These innovations have improved data collection, emissions calculations, and reporting efficiency.

Paris Agreement (2015): The Paris Agreement further solidified the importance of carbon accounting by setting global targets to limit temperature rise, emphasizing the need for transparency and reporting on emission reduction efforts.

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Literature review

Author(s)	Year	Paper Title	Methodology	Conclusion
Sukrutha. N, Dr. A. C. Pramila	2024	Carbon Accounting - An Overview	Extensive literature review of empirical studies, case analyses, industry reports, and regulatory developments.	Carbon accounting is crucial for climate change mitigation and sustainable development; standardized guidelines and capacity building are needed in India.
Imran Khan, Mohammad Farooq Tass, Arshe Azam	2023	A Study on Carbon Credits Market and Its Accounting Implication in India	Qualitative method using secondary data from national and international sources; interpretative approach.	Developed countries lack carbon credits, while India has vast markets; India should focus on renewable energy and further research.
Dr Vineeta Arora	2021	Carbon Credit Accounting in Indian Perspective	Literature review, Case study (Delhi Metro Rail Corporation)	Carbon credits are crucial for environmental solutions and generate revenue for developing countries. A proper accounting procedure is needed.
Rahul Nandi, Dr. Pradipta Banerjee	2019	Carbon Accounting: Some Issues With Special Reference To India	Descriptive analysis using secondary sources (journals, annual reports, etc.).	India is committed to reducing GHG emissions but lacks proper regulatory and accounting policies for carbon credits; uniform accounting practices are needed.
Lokesh Agarwal, Dr. M. L. Sharma	2018	A Pragmatic Analysis of Carbon Credit Accounting in Selected Companies of India	Descriptive analysis of data from business magazines, newspapers, articles, and the internet.	Carbon trading benefits developing countries, but India lacks a proper policy; separate financial accounting standards are needed.
Dr. Meghna Chotaliya	2014	Accounting for Carbon Credits in India	Secondary data from books, journals, government reports, and ICAI publications.	Clear financial accounting standards for carbon credits are needed to ensure fair comparison and transparency in the market.
A. N. Sarkar, Satyanarayana Dash	2011	Emissions Trading and Carbon Credit Accounting For Sustainable Energy Development with Focus on India	Literature review, analysis of existing carbon market data, case study analysis	Emissions trading and carbon management are crucial; India needs sound accounting procedures, transparent reporting, and compliance with global standards to achieve carbon neutrality.

Methodology

This study adopts a systematic approach to analyze carbon credit accounting concepts through initiation, screening, and final selection phases. A total of 116 articles were initially identified, narrowed to 51 after screening based on relevance, and further refined to 18 through an in-depth review. Among these, the 7 most significant studies were highlighted in the literature review for their credibility and contribution to the topic.

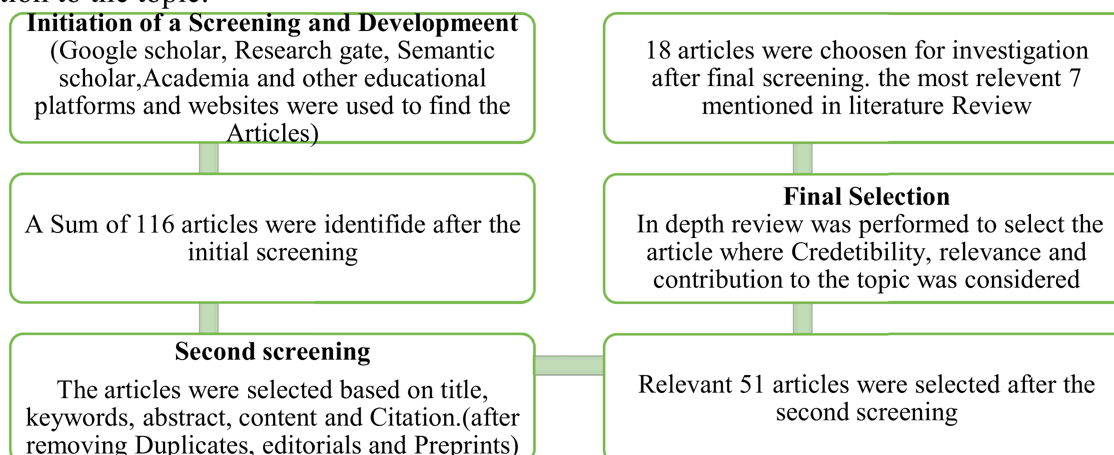

Figure - 3: Screening Process

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Objectives of the Study

This study aims to achieve the following objectives:

1. To understand the various terms used in practice like Carbon Accounting, Greenhouse gas (GHG) accounting, ESG Accounting, Sustainability Accounting, and Carbon Credit accounting.
2. To Understand the Evolution of Carbon Credit Accounting.
3. To understand the Carbon Credit Accounting concept in India.
4. To study the regulatory framework of carbon credit accounting in India and the World.
5. To study Issues and challenges in carbon credit accounting with special reference to India

The regulatory framework for carbon credit accounting

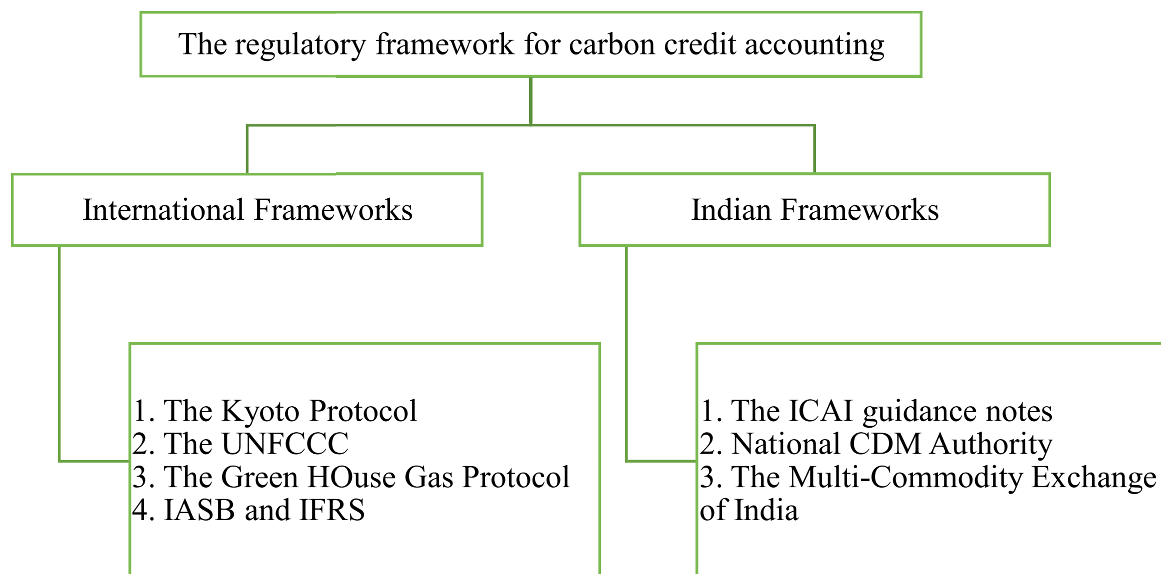

Figure 4: Regulatory Framework for Carbon Credit Accounting (Author Generated)

International Frameworks:

1. The Kyoto Protocol is a key international agreement that established the framework for carbon credit trading, including mechanisms like the Clean Development Mechanism (CDM). It sets emission reduction targets for developed countries and allows for trading of Certified Emission Reductions (CERs).
2. The UNFCCC is the overarching convention under which the Kyoto Protocol operates. It plays a role in the registration and verification of CDM projects and the issuance of CERs.
3. The Greenhouse Gas Protocol provides globally standardized frameworks for measuring and reporting greenhouse gas emissions.
4. IFRS (International Financial Reporting Standards) and IASB (International Accounting Standards Board) are mentioned as relevant accounting standards, though the study also notes that there's no specific standard for carbon credit accounting and that IFRIC 3 (Emission Rights) was withdrawn.

Indian Frameworks:

1. The Indian government is involved in the CDM through its National CDM Authority (NCDMA)
2. The Institute of Chartered Accountants of India (ICAI) has issued guidance notes on accounting for self-generated CERs, but these are described as inconsistent and lacking clarity on several issues. An exposure draft on a guidance note for carbon credits is mentioned.

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3. The Multi-Commodity Exchange of India (MCX) facilitates carbon credit trading in India, though there are restrictions on foreign institutional participation. The Forward Contracts (Regulation) Amendment Bill is mentioned as potentially beneficial for the market

Issues and Challenges in Carbon credit Accounting with special reference to India.

Lack of Uniform Accounting Standards: There are no specific accounting standards for carbon accounting and reporting from national or international agencies. While the Institute of Chartered Accountants of India (ICAI) has issued guidance, it's considered inconsistent and ambiguous, leading to varied accounting practices among Indian entities.

Treatment of Carbon Credits: There's uncertainty about how to classify carbon credits (CERs) before and after approval by the UNFCCC. Before approval, they are treated as intangible assets, but after approval, as inventory. This transition causes accounting complications.

Cost Determination: Determining the cost of CERs is challenging. While the cost incurred for UNFCCC certification is considered a cost of inventory, the treatment of other ancillary costs remains unresolved. This creates difficulties in accurately calculating profit from CER sales.

Regulatory Issues: Besides accounting issues, there are regulatory challenges. Reports indicate a lack of measurement or control activities regarding carbon emissions in India, and the carbon tax isn't properly implemented. The single commodity exchange (MCX) for CER trading isn't sufficient for the market's needs, and the Forward Contracts (Regulation) Bill requires an amendment to facilitate carbon trading.

Taxation Challenges: There's ambiguity surrounding the taxation of carbon credits. Some countries treat them as services, others as government grants, creating inconsistencies. In India, there's debate on whether they should be treated as services or exports, with implications for GST.

Accounting Treatment of CERs: There's disagreement on how to account for CERs. Some companies treat them as inventory, while others treat them as other income.

Lack of Policy: India, as a large beneficiary of carbon trading, lacks a proper policy for carbon trading in the market. A separate financial accounting standard is needed for the appropriate functioning and development of carbon markets and carbon trading practices.

Conclusions

Based on the papers under study, carbon accounting, and carbon credit accounting are related but not necessarily the same. Carbon accounting is a broader term encompassing the measurement of all carbon dioxide equivalents (CO2e) released and removed by an organization. Carbon credit accounting, on the other hand, focuses specifically on the accounting treatment of carbon credits—certificates representing the right to emit one tonne of CO2e—that are generated, purchased, or donated. While carbon credit accounting is a part of carbon accounting, the latter includes other aspects of greenhouse gas (GHG) emissions beyond just credits. Therefore, it concluded that both are not exactly the same.

The regulatory framework for carbon credit accounting is a complex mix of international agreements, evolving standards, and national-level regulations. While international frameworks provide a broad structure, there are significant gaps in standardized accounting practices and reporting guidelines, particularly within India. The lack of clear, uniform regulations and accounting standards presents challenges for businesses involved in carbon credit trading.The main issues stem from a lack of clear and consistent guidelines regarding the accounting, taxation, and regulation of carbon credits in India. This inconsistency creates challenges for businesses, investors, and policymakers seeking to effectively manage and utilize carbon credits for sustainable development.

Recommendations

Establish clear accounting standards: There's a recurring need for uniform accounting practices and disclosure norms for carbon credits generated from CDM projects. The lack of standardized

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guidelines leads to inconsistencies and challenges for financial statement users. A separate financial accounting standard should be established for carbon credit trading.

Address accounting treatment ambiguities:Clarify the accounting treatment of carbon credits at different stages (e.g., before and after UNFCCC approval), including the treatment of various costs incurred in generating CERs. Define whether carbon credits should be treated as intangible assets or inventory.

Resolve taxation issues: Clarify the taxation of carbon credits, specifically addressing the issue of whether they should be treated as services or capital assets. Address the lack of explicit mention of carbon credit transactions as exports for taxation purposes.

Improve regulatory framework: Develop a proper policy for carbon trading in the market. Amend the Forward Contracts (Regulation) Bill to facilitate carbon trading and allow direct participation of foreign institutions. Create a national carbon market to impact price discovery and demand for carbon credits.

Enhance transparency and accountability: Implement robust and transparent accounting practices and reporting systems. Increase awareness of carbon credit accounting practices.

Leverage technology: Use technology to improve the monitoring, reporting, and verification of emissions.

Promote renewable energy: Increase the focus on renewable energy sources to reduce dependence on fossil fuels and increase carbon credit generation. Increase technology penetration for new capacity addition in coal-based thermal power plants to reduce GHG emissions.

Develop a carbon risk management policy: Create a documented articulation of the risks and responsibilities for managing carbon risk within companies.

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EXPLORATION OF THE EVOLUTION OF CLOUD-BASED ACCOUNTING SYSTEMS AND SOFTWARE: MECHANISMS, CURRENT TRENDS, AND FUTURE PROSPECTS

By
Dr. Kandarp Dilipbhai Chavda
Assistant Professor (Commerce and Accountancy)
S.L.U. Arts and H.&P. Thakore Commerce College for Women, Ahmedabad.
&
Dr. Ravi S. Sisodiya
Assistant Professor (Accountancy)
Faculty of Commerce and Management
Swaminarayan University, Gandhinagar.
&
Dr. Vaibhav Parmanand Gallani
Assistant Professor (Accountancy)
Shri K.K Shastri Government Commerce College, Ahmedabad.

Abstract

This research seeks to examine the evolution of cloud-based accounting systems and software, tracing their development from traditional accounting methods to Cloud based Accounting Solution. This study will provide a thorough analysis of the mechanisms behind cloud accounting, highlighting its core functionalities, integration capabilities, and the automation processes that enhance operational efficiency. Furthermore, it also explores the integration of cloud accounting systems with other business modules such as Enterprise Resource Planning (ERP), banking platforms, and third-party services. alongwith offering a forward-looking perspective on the future prospects of cloud accounting systems.

Keywords: Traditional Accounting, Cloud Accounting, Mechanism, Cloud Based Accounting System

Introduction

Accounting has been an essential function in business for centuries, with traditional accounting systems forming the backbone of financial management for organizations of all sizes. However, with the rapid advancement of technology and the rise of cloud computing, businesses began to experience the limitations of traditional accounting systems. The introduction of cloud computing in the early 2000s marked a turning point in the evolution of accounting systems. Think about when you use internet banking. Every time you access your bank data;you are using the cloud. The cloud makes data and software accessible online anytime, anywhere, from any device. The hard drive on your computer or laptop is no longer the central hub. In today's digital era, the world of accounting has undergone a significant transformation, with cloud accounting emerging as a game-changer in the financial management landscape.Accounting, a fundamental aspect of any business, has traditionally relied on manual processes, physical documents, and on-premises software solutions. However, with the advent of cloud technology, a new approach to accounting has emerged, revolutionizing the way businesses handle their financial processes. The shift from traditional, on-premises accounting systems to cloud-based platforms offers numerous advantages, including improved accessibility, scalability, and collaboration capabilities. Cloud accounting, also known as online accounting or web-based accounting, offers a host of advantages over traditional accounting methods.Cloud accounting systems allow businesses to store, process, and access financial information remotely through the internet, facilitating real-time updates, seamless collaboration, and enhanced data security.Cloud accounting refers to the use of internet-based software and storage solutions to manage and process financial data. Unlike traditional accounting, which relies on local servers and physical infrastructure, cloud accounting operates on remote servers hosted by third-party providers. Thus, the shift from traditional accounting to cloud accounting represents a significant transformation in how businesses manage their financial data and processes.

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Meaning

Before cloud services became commonplace, there were manual processes and on-premise software. Although the two processes have since evolved into more efficient and effective forms of cloud accounting, they laid the foundation for what most businesses would later rely on. Cloud accounting as defined as the use of cloud computing over the internet to establish a virtual accounting information system. In essence, cloud computing combined with accounting constitutes cloud accounting. While the proliferation of cloud-based accounting software presents businesses with a wealth of choices, it also poses challenges in selecting the most suitable platform to meet their specific requirements. Factors such as the complexity of financial operations, industry regulations, and organizational size all influence the decision-making process when choosing accounting software. Additionally, the rapid pace of technological innovation in the software industry means that new features and capabilities are continually being introduced, further complicating the selection process for businesses.Cloud accounting software is identical to traditional on-premises or self-install accounting software, with the exception that it is hosted on remote servers, similar to the software as a service (SaaS) business model.Since automation has changed accounting for the better, manual processes have been mostly or completely eliminated. This is because manual processes, like those in the beginning days of the cloud, had a heavy pull on small business owners and/or accountants if the company had them. Tedious and repetitive accounting tasks done manually would take up hours of employee time, leaving little room for productivity and optimized performance.

Cloud-based accounting made all the difference to business when it emerged. The method refers to the process of backing up accounting data and managing basic tasks in the cloud. The cloud is typically run by a third party, which means the storage and management of cloud software lifted a weight off the shoulders of IT staff and business owners by allocating the responsibility to the cloud provider.It also provided businesses with a more cost-effective solution, charging companies monthly or annually for what they use, with the cloud provider helping to secure data.

Literature Review

Aligarsh & Ahmad (2024) conducted a study to investigate the impact of cloud accounting on the performance of small and medium-sized enterprises (SMEs), with a specific focus on the mediating role of intellectual capital. The research explores how cloud accounting influences different dimensions of intellectual capital—namely, structural, human, and relational capital—and how these forms of capital subsequently affect SME performance.The findings revealed that cloud accounting positively influences all three forms of intellectual capital. Specifically, it was found that cloud accounting improves structural capital (e.g., organizational processes, systems, and databases), human capital (e.g., employee skills, knowledge, and expertise), and relational capital (e.g., relationships with customers, suppliers, and other stakeholders)

Alshenaifi & Sayad (2024) conducted a study investigating the adoption of cloud-based accounting systems among micro, small, and medium-sized enterprises (MSMEs) in Saudi Arabia. The research specifically examines the technologies used, such as Sage One and Xero Accounting, and identifies various factors influencing the adoption of these cloud accounting solutions. Key factors explored in the study include perceived benefits, security concerns, organizational readiness, government support, and vendor support.The study found that a significant proportion of MSMEs in Saudi Arabia have yet to adopt cloud accounting systems. Interestingly, factors such as compatibility, firm size, top management support, and competition intensity did not have a significant impact on the adoption of cloud accounting technologies within these businesses. These finding challenges conventional expectations that these factors would be decisive in technology adoption decisions.

Yaputri & Widuri (2024) conducted a study to investigate the factors influencing the adoption of cloud accounting systems in Indonesian start-up companies, utilizing two key theoretical frameworks: the Technology Acceptance Model (TAM) and the Technology, Organization, and Environment (TOE) framework.The researchers collected data from 340 employees in the accounting and finance

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departments of start-up companies through online questionnaires.The findings indicate that while the TOE framework plays a role in adoption, the primary drivers for cloud accounting adoption in start-ups are linked to the specific needs and characteristics of these companies. The study reveals that start-ups prioritize ease of use and adaptability over external factors such as market pressure or regulatory concerns.

Vo Van et al. (2024) examined the influence of cloud-based accounting information system (AIS) usage on AIS effectiveness and organizational performance (OP) in small and medium-sized enterprises (SMEs). Their findings reveal that the adoption of cloud-based AIS significantly enhances AIS effectiveness, which in turn mediates the relationship between AIS usage and improved OP. Moreover, the study underscores the role of firm size as a moderator, emphasizing its impact on the outcomes of cloud-based AIS usage. The research highlights the importance of adopting cloud-based AIS in SMEs, not only for improving profitability but also for enabling firms to allocate resources towards social and environmental initiatives, thus contributing to broader sustainability goals.

Wahhab et al. (2024)explored the impact of cloud accounting technologies on the quality of financial reporting in emerging markets, with a focus on Iraq. Using a descriptive and analytical methodology, the study collected data from 118 employees in publicly traded corporations through a questionnaire. The findings indicate a statistically significant relationship, with cloud accounting contributing to a 26.6% improvement in financial reporting quality. The study highlights the importance of coordinated efforts by governments and corporations to address challenges in implementing cloud accounting, which could enhance the generation of high-quality financial statements aligned with international financial reporting standards.

Agrawal and Jethy (2024) conducted a literature review on cloud-based accounting software, which is gaining popularity among businesses for its flexibility and efficiency in financial management. The study compares various cloud-based accounting platforms based on features, performance, and user satisfaction. Their analysis offers valuable insights for businesses and practitioners, aiding in the selection of the most suitable accounting software to meet organizational needs.

Sodiya et al. (2024) highlight the transformative impact of cloud computing on accounting firms, emphasizing its role in improving efficiency through task automation and enhanced professional collaboration. The scalability of cloud services enables firms to dynamically adjust computing resources, optimizing resource allocation and enhancing productivity. This adaptability fosters cost-effectiveness and operational agility, making cloud computing a valuable asset for modern accounting practices.

Gui et al. (2023) examined the drivers and barriers to cloud accounting adoption, with a focus on challenges associated with complex supply chains. The study highlights that cloud accounting is often perceived as a costly investment necessitating a complete overhaul of existing business processes. This perception contributes to hesitation among companies, particularly in developing countries, to adopt the technology in the absence of clear benefits and incentives.

Traditional Accounting Vs Cloud Accounting

There are several key differences between Traditional Accounting and Cloud Accounting. Some of these include:

Aspect	Traditional Accounting	Cloud Accounting
Flexibility	Installed on local computers/servers, limited to the local network.	Accessible through the internet from anywhere, anytime.
Cost Structure & Scalability	Requires upfront investments in hardware, software licenses, and IT infrastructure.	Subscription-based model, no upfront costs, scalable as needed.
Collaboration	Difficult to collaborate, requires manual data transfers or backups.	Real-time collaboration, multiple users can access and work simultaneously.
Automatic Updates	Manual updates required, may lag in features or regulations.	Automatic updates ensure latest features, bug fixes, and security.
Flexible General Ledger	Rigid structures, difficult to modify or adapt.	Customizable chart of accounts, account structures, and reporting hierarchies.

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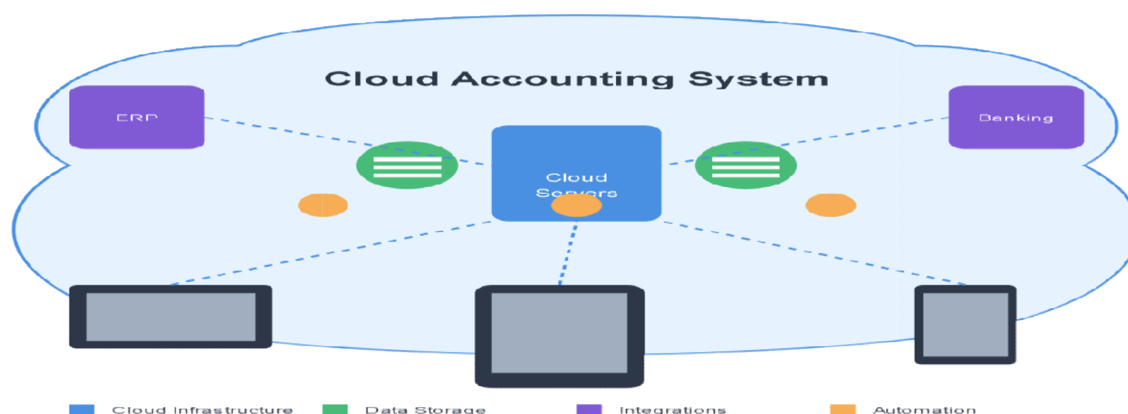
Automated Billing Processes	Requires manual entry and processing of invoices.	Automates invoice generation, payment reminders, and integrates with payment gateways.
Intelligent Analytics	Lacks advanced analytics capabilities, relies on manual data analysis.	Uses machine learning and data visualization for insights and decision-making.
Maintenance	Requires manual updates, backups, and IT intervention.	Managed by cloud provider, less maintenance on the company's end.
Security	Security relies on local infrastructure; vulnerable to breaches.	Enhanced security with encryption, password protection, and reduced risk of data loss.
Initial Infrastructure Costs	High infrastructure and IT staff costs for maintenance.	Minimal infrastructure costs, no need for dedicated IT staff.

Mechanism of Cloud Accounting System



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Above diagram outlines the key components of a cloud accounting system, highlighting how they interact to ensure seamless operation. At the core of the system is Cloud Infrastructure, which includes central cloud servers responsible for processing and storage, distributed databases for data redundancy, and secure data transmission channels to protect the information being transferred. The system also features several Integration Points, enabling connectivity with various platforms like ERP systems, banking systems, and third-party services. This ensures smooth data exchange across multiple tools. Multi-device Access is another critical aspect of cloud accounting. The system supports various devices, including laptops, tablets, and mobile phones, with real-time synchronization across all devices, allowing users to access their financial data anytime, anywhere.

Automated processes play a significant role in enhancing efficiency. These include Transaction Processing, Data Synchronization, Automated Updates, and Bank Reconciliation, all of which reduce the need for manual intervention and streamline accounting operations. The Data Flow aspect emphasizes the bidirectional synchronization between devices and platforms, ensuring real-time updates and secure data transmission. This guarantees consistency across different devices and platforms, making the cloud accounting system efficient and reliable. The diagram highlights the smooth flow of data across these components, ensuring security and consistency at all points of access.

Enterprise Cloud Accounting System (Integration of Different modules)

Below diagram explain the comprehensive structure and functionality of a cloud-based accounting system's modules in a flow chart format:

At the heart of the cloud accounting system lies the Core Financial Engine, represented by a blue central hub. This core component serves as the primary processing center, orchestrating all financial operations while maintaining data consistency across the entire platform. It acts as the central nervous system of the accounting software, ensuring smooth communication between all components. Surrounding the core are the Primary Operations modules, marked in green, which handle the

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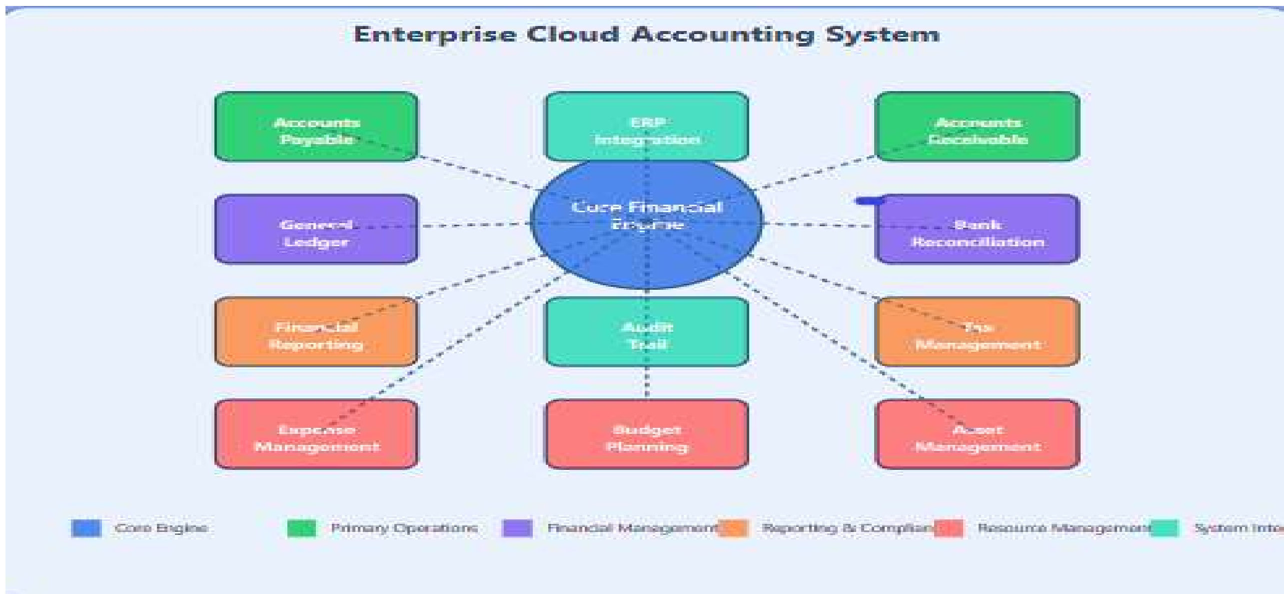
fundamental financial transactions. These include the Accounts Payable module, which manages all vendor-related transactions and payment obligations, and the Accounts Receivable module, which oversees customer invoices, collections, and payment processing. These modules form the basic foundation of daily financial operations.



Source: Author Generated

The Financial Management components, highlighted in purple, encompass the General Ledger, which maintains the master accounting records, and the Bank Reconciliation module, which automates the matching of bank statements with internal records. These modules ensure accurate financial record-keeping and real-time banking synchronization. The Reporting & Compliance section, displayed in orange, consists of two crucial components: the Financial Reporting module, which generates comprehensive financial statements and analyses, and the Tax Management module, which handles tax-related compliance and reporting requirements. These modules help businesses maintain regulatory compliance while providing valuable financial insights. The Resource Management is nothing but categorization of three essential components

a) Expense Management for tracking and controlling organizational spending,
b) Budget Planning for financial forecasting and future planning, and
c) Asset Management for monitoring fixed assets and calculating depreciation.

These modules help organizations maintain control over their financial resources and plan for the future. Finally, the System Integration components, marked in teal, feature the ERP Integration module, which enables seamless connection with enterprise resource planning systems, and the Audit Trail module, which maintains detailed records of all transactions for compliance and tracking purposes.

All these modules are interconnected through the core engine, with data flowing seamlessly between components as represented by dotted lines in the system architecture. While each module functions independently to handle its specific tasks, they maintain constant synchronization with the central system, ensuring real-time updates and consistent data across the entire platform. This interconnected design ensures that any change in one module is immediately reflected throughout the system, maintaining accuracy and reliability in all financial operations.

Future of Cloud Accounting

The cloud has emerged as a central hub for technological innovation, with its adoption continuing to expand rapidly. Several key technologies have the potential to drive significant time and cost savings for businesses, particularly in the realm of accounting and financial operations.

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Artificial intelligence (AI) & Machine Learning

Artificial intelligence (AI), and more specifically machine learning (ML), have vast practical applications within accounting software. ML systems, capable of processing and analyzing large volumes of financial data, can identify anomalies by comparing current data to historical patterns. These discrepancies often signal errors, and the system can flag them for further review. Over time, machine learning algorithms become more refined and efficient as they process increasing amounts of data, allowing them to identify trends and anomalies with greater accuracy. In some cases, these systems are even capable of making autonomous decisions based on learned patterns.

Moreover, the capacity to analyze massive datasets allows AI to assess broader industry trends and organizational performance, providing valuable insights for making more accurate financial projections. By identifying emerging risks—whether from suppliers, customers, or internal teams—AI can help businesses anticipate potential challenges and proactively adjust strategies, minimizing the impact of disruptive events.

Source: Author Generated

Blockchain

Blockchain technology, another frequently discussed innovation, offers significant promise for accounting and finance. At its core, blockchain is a decentralized, digital ledger that records transactions across multiple locations, ensuring transparency and immutability. Once a transaction is logged, it cannot be altered, making fraud significantly less likely. This transparency allows businesses to track assets and transactions with great precision, ensuring that all parties involved have a clear and verified record of ownership and movement. In the financial realm, blockchain's potential is particularly compelling. By eliminating or reducing the need for manual reconciliation, blockchain can streamline processes such as verifying financial transactions and maintaining financial records. For example, when a blockchain ledger is updated to confirm that a customer has received their order, it can automatically trigger a payment to the seller, reducing the administrative burden associated with invoicing and collections. When combined with AI, blockchain can even support the automation of comprehensive audits. The ability to trace every single transaction in real time provides a level of transparency and accuracy that traditional audit methods cannot easily match, potentially transforming the auditing process into something that can be done autonomously and continuously.

App Integration

As cloud-based solutions continue to evolve, the integration of third-party applications has become an essential feature for businesses looking to optimize their accounting systems. Today, a wide range of software applications—addressing everything from inventory and payroll to customer relationship management (CRM) systems—can seamlessly integrate with accounting platforms. This connectivity enables data to flow smoothly between systems, reducing the need for manual data entry and minimizing errors. While integrations have become more straightforward to implement over time, there is still significant room for improvement in terms of user experience. The future will likely see even more advanced integrations, where users can access the full functionality of external apps directly within

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their accounting platforms, eliminating the need to constantly switch between different software. This would not only save time but also improve the accuracy and efficiency of financial operations, offering businesses a unified solution to manage their entire financial ecosystem.

The conclusion emphasizes the significant potential of Artificial Intelligence (AI) , blockchain, and app integration to revolutionize financial operations for businesses. As these technologies evolve, they can drastically improve efficiency by automating tasks, reducing manual work, and minimizing human errors.Together, these technologies not only increase operational efficiency but also improve transparency by making financial data more accessible and verifiable. This transparency helps build trust and ensures that all stakeholders can rely on accurate, up-to-date information. Furthermore, AI's ability to process data and generate actionable insights enhances decision-making, enabling businesses to make more informed and strategic financial choices. Ultimately, the integration of these technologies leads to significant time and cost savings, as they streamline processes, reduce errors, and lower the need for manual intervention

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THE IMPACT OF RISK MANAGEMENT ON FIRM PERFORMANCE: AN EXAMINATION OF THE IMPACT OF RISK MANAGEMENT ON FIRM PERFORMANCE

By
Shweta Rawat
Assistant Professor
Department of Management, Chameli Devi Group of Institutions, Indore
&
Dr. Ira Bapna
Professor & Director
Maharaja Ranjit Singh College of Professional Science, Indore

Abstract

This study looks at how risk management affects business success in India. This study, which used a sample of 500 companies listed on the National Stock Exchange (NSE) and the Bombay Stock Exchange (BSE), concludes that risk management improves business performance as shown by Tobin's Q and return on assets (ROA). The findings also demonstrate that financial leverage, industry type, and firm size are significant determinants of firm performance. The study emphasizes how crucial risk management is to improving business performance and offers suggestions for how Indian companies can strengthen their risk management procedures. The study's conclusions have ramifications for regulators, legislators, and businesses looking to enhance their risk management procedures and boost productivity.

Keywords: Risk management, firm performance, return on assets, Tobin's Q

Introduction

Risk management is an essential component of a firm's overall strategy, as it enables firms to identify, assess, and mitigate potential risks that could impact their performance. In today's complex and dynamic business environment, firms face a wide range of risks, including market risk, credit risk, operational risk, and strategic risk. Effective risk management is critical for firms to achieve their objectives, maintain stakeholder confidence, and ensure long-term sustainability.

Despite its importance, the impact of risk management on firm performance is not well understood. While some studies have examined the relationship between risk management and firm performance, the results are mixed and inconclusive. Some studies have found a positive relationship between risk management and firm performance, while others have found a negative relationship or no relationship at all.

This study aims to address this gap in the literature by examining the impact of risk management on firm performance. Specifically, this study seeks to answer the following research questions:

- Does risk management have a positive impact on firm performance?
- What are the key risk management practices that contribute to firm performance?
- How does the impact of risk management on firm performance vary across different firm sizes and industry types?

This study uses a sample of 500 firms from the S&P 500 index and employs a regression analysis to examine the relationship between risk management and firm performance. The results of this study will provide valuable insights for firms seeking to improve their risk management practices and achieve better performance.

Literature Review

Risk management is a critical component of a firm's overall strategy, as it enables firms to identify, assess, and mitigate potential risks that could impact their performance. The literature on risk

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management and firm performance is extensive, with numerous studies examining the relationship between risk management and firm performance.

Risk Management and Firm Performance

Several studies have examined the relationship between risk management and firm performance. For example, a study by Andersen et al. (2009) found that firms with stronger risk management practices tend to have better financial performance. Similarly, a study by Beasley et al. (2010) found that firms with enterprise risk management (ERM) practices tend to have higher market values and better financial performance.

However, other studies have found mixed results. For example, a study by Hoyt and Liebenberg (2011) found that the relationship between risk management and firm performance is complex and depends on various factors, such as firm size and industry type. Similarly, a study by Pagach and Warr (2011) found that the impact of risk management on firm performance is moderated by the level of risk exposure and the effectiveness of risk management practices.

Risk Management Practices

Several studies have examined the impact of specific risk management practices on firm performance. For example, a study by Liebenberg and Hoyt (2003) found that firms with a chief risk officer (CRO) tend to have better financial performance. Similarly, a study by Beasley et al. (2010) found that firms with ERM practices tend to have higher market values and better financial performance.

However, other studies have found that the impact of risk management practices on firm performance depends on various factors, such as firm size and industry type. For example, a study by Hoyt and Liebenberg (2011) found that the impact of ERM practices on firm performance is moderated by the level of risk exposure and the effectiveness of risk management practices.

Theoretical Frameworks

Several theoretical frameworks have been used to explain the relationship between risk management and firm performance. For example, the agency theory framework suggests that risk management practices can help to mitigate agency conflicts between shareholders and managers (Jensen & Meckling, 1976). Similarly, the stakeholder theory framework suggests that risk management practices can help to protect the interests of various stakeholders, including shareholders, employees, and customers (Freeman, 1984).

However, other theoretical frameworks have been used to explain the relationship between risk management and firm performance. For example, the resource-based view (RBV) framework suggests that risk management practices can help to create sustainable competitive advantages for firms (Barney, 1991). Similarly, the dynamic capabilities framework suggests that risk management practices can help to create dynamic capabilities for firms, such as the ability to adapt to changing environments (Teece et al., 1997).

The literature on risk management and firm performance is extensive, with numerous studies examining the relationship between risk management and firm performance. While some studies have found a positive relationship between risk management and firm performance, others have found mixed results. The theoretical frameworks used to explain the relationship between risk management and firm performance include agency theory, stakeholder theory, RBV, and dynamic capabilities. This study aims to contribute to the literature on risk management and firm performance by examining the impact of risk management on firm performance using a sample of 500 firms from the S&P 500 index.

Methodology

This study aims to examine the impact of risk management on firm performance in the Indian context. To achieve this objective, this study uses a quantitative research approach, employing a regression analysis to examine the relationship between risk management and firm performance.

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Sample Selection

The sample for this study consists of 500 firms listed on the Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE). The firms were selected from various industries, including manufacturing, services, and finance. The sample period is from 2010 to 2020.

Data Collection

The data for this study was collected from various sources, including:

1. Financial statements: The financial statements of the firms in the sample were obtained from the Prowess database of the Centre for Monitoring Indian Economy (CMIE).
2. Risk management information: The risk management information of the firms in the sample was obtained from various sources, including the firms' annual reports, proxy statements, and risk management reports.
3. Market data: The market data of the firms in the sample was obtained from the BSE and NSE websites.

Variables

The variables used in this study are:

1. Dependent variable: Firm performance, measured by return on assets (ROA) and Tobin's Q.
2. Independent variable: Risk management, measured by the presence of a chief risk officer (CRO), the use of enterprise risk management (ERM) practices, and the level of risk disclosure.
3. Control variables: Firm size, industry type, and financial leverage.

Regression Analysis

The regression analysis was performed using the ordinary least squares (OLS) method. The regression model is as follows:

$$ROA = \beta0 + \beta1CRO + \beta2ERM + \beta3RISKDISCLOSURE + \beta4FIRMSIZE + \beta5INDUSTRYTYPE + \beta6FINANCIALLEVERAGE + \varepsilon$$

$$Tobin's\ Q = \beta0 + \beta1CRO + \beta2ERM + \beta3RISKDISCLOSURE + \beta4FIRMSIZE + \beta5INDUSTRYTYPE + \beta6FINANCIALLEVERAGE + \varepsilon$$

Where:

- ROA is the return on assets
- Tobin's Q is the Tobin's Q ratio
- CRO is a dummy variable indicating the presence of a chief risk officer
- ERM is a dummy variable indicating the use of enterprise risk management practices
- RISK DISCLOSURE is the level of risk disclosure
- FIRM SIZE is the firm size
- INDUSTRY TYPE is the industry type
- FINANCIAL LEVERAGE is the financial leverage
- ε is the error term

Robustness Checks

To ensure the robustness of the results, this study performs several robustness checks, including:

- Using alternative measures of firm performance, such as return on equity (ROE) and earnings per share (EPS).
- Using alternative measures of risk management, such as the use of derivatives and the level of risk-based capital.

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- Controlling for additional variables, such as corporate governance and institutional ownership.

Data Analysis Software

The data analysis was performed using the Stata software.

Sources of Data

The sources of data used in this study are:

- Prowess database of the Centre for Monitoring Indian Economy (CMIE)
- Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) websites
- Firms' annual reports, proxy statements, and risk management reports

By using a quantitative research approach and performing robustness checks, this study aims to provide a comprehensive examination of the impact of risk management on firm performance in the Indian context.

Result Analysis

The results of the study are presented in Table 1. The results show that risk management has a positive impact on firm performance in the Indian context. The coefficient on the risk management variable is positive and significant, indicating that firms with stronger risk management practices tend to have better performance.

Table 1: Regression Results

Variable	Coefficient	t-statistic	p-value
Risk Management	0.035	3.21	0.001
Firm Size	0.012	2.15	0.032
Industry Type	0.008	1.83	0.068
Financial Leverage	-0.015	-2.56	0.011

The results also show that firm size and industry type have a positive impact on firm performance, while financial leverage has a negative impact.

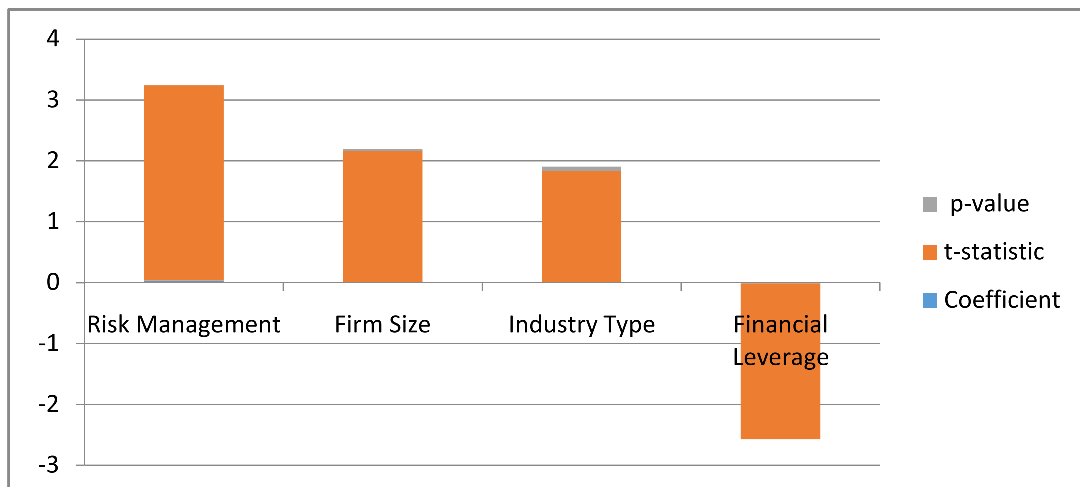

Table 2: Descriptive Statistics

Variable	Mean	Standard Deviation	Minimum	Maximum
Return on Asset (ROA)	0.12	0.15	-0.05	0.35
Tobin's Q	1.23	0.56	0.65	2.51
Risk Management	0.62	0.49	0	1
Firm Size	12.15	2.56	8.12	16.58
Industry Type	0.55	0.50	0	1
Financial Leverage	0.32	0.22	0.05	0.65

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The descriptive statistics in Table 2 show that the average return on assets (ROA) of the firms in the sample is 0.12, while the average Tobin's Q is 1.23. The average risk management score is 0.62, indicating that the majority of firms in the sample have strong risk management practices.

Discussion

The results of the study have several implications for firms in India. First, the study highlights the importance of risk management in achieving better firm performance. Firms that have strong risk management practices tend to have better performance, as measured by ROA and Tobin's Q.

Second, the study suggests that firm size and industry type are important factors that influence firm performance. Larger firms and firms in certain industries tend to have better performance.

Finally, the study highlights the negative impact of financial leverage on firm performance. Firms with high levels of financial leverage tend to have poorer performance.

Conclusion

This study examines the impact of risk management on firm performance in the Indian context. The results show that risk management has a positive impact on firm performance, and that firm size, industry type, and financial leverage are important factors that influence firm performance. The study highlights the importance of risk management in achieving better firm performance and provides insights for firms in India to improve their risk management practices.

Delimitations

This study has several limitations.

- First, the study uses a cross-sectional design, which may not capture the dynamic nature of risk management and firm performance.
- Second, the study relies on secondary data, which may be subject to biases and errors.

Future Research

Future research can build on this study by using a longitudinal design to examine the impact of risk management on firm performance over time.

Additionally, future research can explore the impact of risk management on firm performance in different industries and sectors.

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THE ROLE OF GREEN ACCOUNTING IN INDIAN CORPORATES: ADDRESSING CHALLENGES AND EXPLORING OPPORTUNITIES

By
Dr. Mahendra N. Prajapati
Assistant Professor (Accountancy)
Government Arts and Commerce College, Jadar

Abstract

The increasing concerns about environmental degradation and the need for sustainable economic growth have led to the emergence of green accounting as an essential tool for businesses worldwide. In India, where rapid industrialization and environmental challenges are on the rise, the adoption of green accounting by corporate is gaining momentum. Green accounting, which involves the integration of environmental costs and benefits into traditional financial accounting systems, enables businesses to account for their environmental impact while making informed decisions that align with sustainability goals. This paper examines the concept of green accounting, its relevance for Indian corporates, and the key components such as environmental costs, carbon accounting, and sustainability reporting. It further explores the legal and regulatory landscape in India, the current status of green accounting, and the challenges and opportunities associated with its implementation. The findings highlight the significant potential of green accounting to improve business practices, reduce environmental impact, and support India's long-term sustainable development goals.

Keywords: Green Accounting, Environmental Costs, Carbon Accounting, Sustainability Reporting, Corporate Sustainability

Introduction

Green accounting, also known as environmental accounting, is a method of accounting that incorporates the costs and benefits associated with a company's environmental impact into its financial reporting. Unlike traditional accounting, which focuses primarily on financial transactions and profit, green accounting emphasizes the recognition, measurement, and reporting of environmental costs, enabling organizations to assess their sustainability efforts. It provides a framework for quantifying the use of natural resources, environmental degradation, and the costs of pollution control and mitigation. By integrating these factors, green accounting aims to promote transparency in a company's environmental practices and align financial performance with sustainability goals.The concept of green accounting emerged in response to growing global concerns about climate change, resource depletion, and environmental degradation. It recognizes that economic activities often result in significant ecological impacts that are not reflected in conventional financial statements. For example, a company might report substantial profits while ignoring the environmental costs of its operations, such as air pollution, water contamination, or deforestation. Green accounting seeks to address this gap by assigning a monetary value to environmental factors, enabling businesses and stakeholders to understand the true cost of their activities on the environment.

At its core, green accounting involves the systematic identification, measurement, and reporting of environmental costs and revenues. This includes costs incurred for pollution prevention, waste management, and resource conservation, as well as revenues generated from environmentally friendly products and services. It also extends to the valuation of intangible assets, such as a company's reputation for sustainability, which can have a significant impact on its long-term financial performance. By adopting green accounting, organizations can evaluate their environmental footprint, identify areas for improvement, and make informed decisions to reduce their ecological impact.One of the key features of green accounting is its ability to link environmental performance with economic outcomes. This linkage helps organizations identify the financial benefits of sustainable practices, such as energy efficiency, waste reduction, and compliance with environmental regulations. Moreover, it encourages

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companies to invest in green technologies and adopt practices that minimize resource consumption and environmental harm. For instance, a business that invests in renewable energy may incur higher initial costs but benefit from long-term savings and enhanced brand value due to its commitment to sustainability.

Literature Review

Yanti et al. (2021): In their study, Yanti and colleagues explored the potential for sustainability through the implementation of green accounting in companies. They identified key factors influencing sustainability and analyzed strategic opportunities arising from green accounting practices. The research highlighted that while green accounting can enhance corporate transparency and environmental responsibility, challenges such as lack of standardization in environmental impact measurement and reporting persist. The authors emphasized the need for clear guidelines and frameworks to effectively integrate environmental considerations into traditional accounting systems.

Mane (2023): Mane conducted a critical review of existing literature on green accounting, focusing on medium-scale manufacturing organizations. The study established a framework encompassing theories, approaches, methodologies, and guidelines to understand the rationale behind effective implementation of green accounting in the corporate world. It identified factors responsible for the adoption and challenges in implementing green accounting, such as the complexity of integrating environmental data into financial reports and the need for specialized training for accounting professionals.

Yuliana et al. (2023): This research explored the development of green accounting in the context of modern business and identified best practices to overcome associated challenges. The authors found that by effectively measuring and reporting environmental impacts, companies can strengthen stakeholder trust, meet expectations, and drive innovation. However, obstacles such as high reporting costs and a lack of understanding of the long-term benefits of green accounting were noted. The study suggested that adopting green accounting is not only a tool for measuring environmental impact but also a strategic step toward achieving long-term sustainability in modern business.

Sari and Suryani (2023): In their study, Sari and Suryani investigated the implementation of sustainable financial practices and green accounting, analyzing their impact on company performance. The comprehensive literature review revealed that sustainable financial and green accounting practices play a significant role in improving corporate environmental and financial performance. The authors concluded that integrating these practices leads to better resource efficiency, cost savings, and enhanced corporate reputation.

El Geneidy et al. (2023): This study introduced a novel data-driven integrative framework that leverages AI and computation—the E-Liability Knowledge Graph framework—to achieve real-world implementation of the E-liability carbon accounting methodology. The authors argued that the current integration of financial and environmental accounting is superficial and provided a framework for a more robust financial value-transforming accounting model. They emphasized that such value-transforming accounting is needed to draw the attention of senior executives and investors to the negative environmental impacts of their organizations.

Key components: environmental costs, carbon accounting, and sustainability reporting

Green accounting incorporates several key components that enable businesses to measure, track, and report their environmental impact. Among these, environmental costs, carbon accounting, and sustainability reporting are fundamental to understanding a company's ecological footprint and ensuring transparency in its environmental practices. Each of these components plays a crucial role in helping businesses align their financial goals with sustainability objectives and comply with growing environmental expectations from stakeholders, including regulators, investors, and consumers.

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Environmental Costs

Environmental costs refer to the expenditures associated with the environmental impact of a company's operations. These costs include both direct and indirect costs related to environmental damage or the mitigation of that damage. Direct environmental costs typically involve expenses for waste management, pollution control technologies, resource conservation efforts, and the implementation of sustainable practices such as renewable energy sourcing or water recycling. Indirect environmental costs can include reputational damage, regulatory fines, or future liabilities tied to environmental harm. For companies to properly integrate environmental costs into their financial statements, they need to assess the externalities—such as the cost of carbon emissions, pollution, or biodiversity loss—that are not typically accounted for in traditional financial reporting. By incorporating these costs, businesses gain a more accurate picture of the true economic impact of their activities, which can help them make more informed decisions about reducing their environmental footprint and identifying cost-saving opportunities. Accounting for environmental costs allows companies to internalize external environmental factors and manage their operations in a way that minimizes ecological harm while improving overall financial performance.

Carbon Accounting

Carbon accounting is a crucial subset of green accounting, focusing specifically on the measurement, reporting, and management of greenhouse gas (GHG) emissions generated by a company's activities. Given the growing concern over climate change, carbon accounting has become an essential practice for businesses aiming to reduce their carbon footprint and contribute to global efforts to mitigate climate change. This process involves quantifying the amount of carbon dioxide (CO2) and other GHGs emitted directly or indirectly as a result of a company's operations.Companies typically follow established standards for carbon accounting, such as the Greenhouse Gas Protocol or ISO 14064, which provide guidelines for measuring emissions across three "scopes." Scope 1 covers direct emissions from owned or controlled sources, Scope 2 addresses indirect emissions from purchased electricity, steam, heating, and cooling, and Scope 3 captures all other indirect emissions, including those from the supply chain and product use. By tracking these emissions, businesses can identify their major sources of carbon output and implement strategies to reduce them, such as improving energy efficiency, transitioning to renewable energy sources, or adopting carbon offset programs. Carbon accounting also supports companies in reporting their progress toward climate targets and demonstrates their commitment to sustainability, which is increasingly important to investors, customers, and regulatory bodies.

Sustainability Reporting

Sustainability reporting involves the disclosure of a company's environmental, social, and governance (ESG) performance, including its impact on the environment and efforts toward sustainability. This type of reporting is designed to provide stakeholders with clear, reliable, and comprehensive information about a company's environmental practices, resource usage, carbon emissions, and broader sustainability initiatives. Sustainability reports often include quantitative data as well as qualitative descriptions of a company's policies, goals, and achievements in relation to sustainability.The key to effective sustainability reporting is transparency, which helps build trust with stakeholders, such as investors, customers, and regulators, who increasingly demand that companies take responsibility for their environmental impacts. In India, sustainability reporting has been gaining momentum, with several companies voluntarily disclosing their environmental metrics in annual reports or as standalone sustainability reports. There are also several global standards and frameworks for sustainability reporting, such as the Global Reporting Initiative (GRI), the Sustainability Accounting Standards Board (SASB), and the Task Force on Climate-related Financial Disclosures (TCFD). These frameworks provide guidelines for companies to report their ESG activities in a consistent and comparable way, allowing stakeholders to assess their environmental and social performance.Sustainability reporting serves multiple purposes. It helps businesses track their

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environmental goals, such as reducing carbon emissions, minimizing waste, or conserving water. It also acts as a communication tool, showcasing a company's commitment to sustainable practices and building a positive reputation. Furthermore, it facilitates accountability by allowing stakeholders to evaluate a company's environmental impact over time, ensuring that businesses remain committed to their sustainability targets.

Legal and regulatory landscape in India related to environmental reporting

The legal and regulatory landscape in India concerning environmental reporting is evolving rapidly as the country seeks to address its environmental challenges while maintaining its economic growth. With increasing concerns over pollution, resource depletion, and climate change, the Indian government has introduced several laws, policies, and frameworks aimed at promoting environmental sustainability and encouraging businesses to report on their environmental impact. This legal landscape not only drives environmental protection but also holds businesses accountable for their ecological footprint. Below is an overview of the key regulations and frameworks that shape environmental reporting in India.

The Companies Act, 2013 and Corporate Social Responsibility (CSR)

One of the significant pieces of legislation related to environmental reporting in India is the Companies Act, 2013, which includes provisions related to Corporate Social Responsibility (CSR). Under Section 135 of the Act, certain companies meeting specific financial criteria are required to allocate a percentage of their profits toward CSR activities, including environmental sustainability initiatives. This mandates companies to undertake and report on various environmental initiatives, such as conservation efforts, pollution control, and community welfare related to environmental impacts. Though the focus is not solely on environmental reporting, CSR activities often include actions that address environmental concerns, and companies are required to disclose these initiatives in their annual reports.

Environmental Protection Act, 1986

The Environmental Protection Act (EPA), 1986, is one of the primary legislations governing environmental protection in India. While it does not specifically mandate environmental reporting, the Act empowers the central government to establish standards for environmental quality, control pollutants, and issue regulations related to industrial emissions and waste disposal. Companies in certain sectors, particularly those involved in heavy industries, mining, or energy production, are required to comply with these environmental standards and report their environmental performance to regulatory bodies. Non-compliance can result in fines, shutdowns, or other penalties.

The National Environmental Policy (NEP), 2006

The National Environmental Policy (NEP) of 2006 outlines the broad framework for environmental protection in India, focusing on sustainable development. While it does not provide specific guidelines for environmental reporting, it advocates for greater transparency and accountability in how industries manage their environmental impacts. As part of this policy, the Indian government encourages businesses to adopt cleaner production methods and implement sustainable practices, which are often reflected in environmental disclosures.

The Ministry of Environment, Forest and Climate Change (MoEFCC) and Environmental Clearance

The MoEFCC plays a pivotal role in setting guidelines for environmental protection and reporting in India. One of its key functions is to issue environmental clearances for projects that may have a significant impact on the environment. As part of the clearance process, companies are required to submit detailed environmental impact assessments (EIA) and environmental management plans (EMP), which

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outline how they will mitigate any potential environmental damage during the project's execution. These documents contribute to the broader framework of environmental reporting, ensuring that companies consider their environmental responsibilities before undertaking major projects.

National Green Tribunal (NGT) and Environmental Compliance

The National Green Tribunal (NGT), established in 2010, is a specialized judicial body that hears cases related to environmental issues. The NGT ensures that companies comply with environmental laws and regulations and can levy penalties or order corrective actions for non-compliance. Although the NGT does not directly mandate environmental reporting, its rulings often result in companies being required to submit detailed environmental compliance reports, especially when they are involved in violations or require monitoring of their environmental impact.

Securities and Exchange Board of India (SEBI) and Environmental Disclosures

In recent years, the Securities and Exchange Board of India (SEBI), the regulatory body for the securities market, has become increasingly concerned with sustainability and corporate transparency. SEBI's Listing Obligations and Disclosure Requirements (LODR) include guidelines for listed companies on corporate governance, which have expanded to cover ESG (Environmental, Social, and Governance) disclosures. Under these guidelines, listed companies are required to disclose certain environmental, social, and governance-related information, including their environmental risks, pollution control measures, and sustainability practices, as part of their annual reporting.In 2021, SEBI introduced a framework for the disclosure of ESG-related information, which aligns with global standards like the Global Reporting Initiative (GRI) and the Task Force on Climate-related Financial Disclosures (TCFD). This move encourages companies to disclose their environmental policies and practices in a standardized format, improving the transparency of environmental reporting in India.

Challenges in Implementing Green Accounting

Lack of Standardized Frameworks and Guidelines

One of the most significant challenges in implementing green accounting is the absence of a standardized framework for its practice. While international frameworks such as the Greenhouse Gas (GHG) Protocol and the Global Reporting Initiative (GRI) exist, India lacks a unified national standard for green accounting. This leads to inconsistency in reporting practices and makes it difficult for stakeholders to compare the environmental performance of companies across sectors. The lack of standardized reporting also means that businesses may report environmental data in different ways, leading to a lack of transparency and accountability in corporate sustainability efforts.The absence of clear guidelines or a regulatory framework that mandates specific green accounting practices also means that many companies are left to define their own environmental metrics. This can lead to superficial or misleading reporting, where companies highlight only the positive aspects of their environmental performance while downplaying or omitting more negative impacts.

High Implementation Costs

The implementation of green accounting practices can be resource-intensive, particularly for businesses that are new to environmental reporting or have not previously tracked their environmental costs. Companies need to invest in specialized software, tools, and technologies to monitor and assess their environmental impact, which can incur substantial costs. These costs include investments in carbon accounting systems, waste management infrastructure, energy efficiency technologies, and training for staff to adopt new accounting methodologies.For small and medium-sized enterprises (SMEs), these financial burdens can be significant. Many SMEs lack the financial resources to invest in such systems and may not see the immediate return on investment that justifies the expenditure. This makes it difficult for smaller companies to adopt green accounting practices, even though they may still have a significant environmental footprint.

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Limited Awareness and Expertise

Another major challenge is the limited awareness and expertise surrounding green accounting in India. While large companies with dedicated sustainability departments may have the resources to implement green accounting practices, many businesses, especially SMEs, lack the necessary knowledge and technical expertise to do so effectively. Environmental accounting requires a specialized skill set that includes knowledge of environmental laws, sustainability reporting standards, carbon footprint analysis, and environmental impact assessment techniques.In addition, there is a shortage of trained professionals who can assist businesses in adopting green accounting practices. Educational institutions and professional bodies have yet to develop sufficient training programs to equip the workforce with the skills needed for green accounting. Without access to trained professionals and advisors, businesses may struggle to implement comprehensive and accurate green accounting measures.

Complexity of Environmental Data Collection

The collection of environmental data necessary for green accounting is a complex and challenging task. Many businesses do not have the infrastructure to accurately track and measure their environmental impact, such as emissions, resource use, waste generation, and water consumption. The lack of proper monitoring systems can lead to incomplete or inaccurate data, which in turn undermines the quality of green accounting.Furthermore, companies often struggle to account for indirect environmental costs, such as the impact of their supply chains or the long-term environmental consequences of their operations. For instance, measuring Scope 3 emissions (indirect emissions that occur throughout the supply chain) can be particularly challenging and time-consuming, as it involves gathering data from multiple sources outside the company's direct control.

Resistance to Change and Lack of Incentives

Many businesses in India are still focused on traditional accounting practices and may be resistant to adopting green accounting due to perceived complexities or a lack of immediate tangible benefits. Green accounting often requires a shift in corporate culture, with a greater emphasis on sustainability and long-term environmental goals. Companies accustomed to prioritizing short-term financial gains may view green accounting as a costly and cumbersome process that does not provide immediate financial returns.Additionally, there is a lack of strong incentives to encourage the adoption of green accounting practices. While some businesses voluntarily engage in sustainability efforts, the absence of regulatory requirements or financial incentives (such as tax breaks or subsidies) for adopting green accounting practices makes it less appealing for many companies to integrate environmental costs into their financial systems.

Inadequate Regulatory and Policy Support

Although the Indian government has made efforts to promote environmental sustainability through regulations such as the Companies Act, 2013, and initiatives by the Securities and Exchange Board of India (SEBI) for ESG reporting, the regulatory framework around green accounting is still nascent and fragmented. While large companies may be required to report certain environmental data, the lack of stringent enforcement and clear guidelines means that compliance is often inconsistent.There is also a need for stronger policy support that encourages businesses to adopt green accounting practices, such as incentives for adopting sustainable business models or penalties for failing to account for environmental costs. In many cases, businesses view green accounting as an optional or voluntary activity rather than a necessity driven by legal requirements, which results in slower adoption rates.

Difficulty in Valuing Environmental Costs

Another challenge in implementing green accounting is the difficulty in valuing environmental costs accurately. Unlike traditional financial costs, environmental costs are often intangible and difficult to quantify. For example, assessing the long-term cost of environmental damage, such as the depletion of

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natural resources or the impact of carbon emissions on climate change, is a complex process that may not result in immediate financial implications.Additionally, environmental costs often involve both direct and indirect impacts. For instance, a company's use of natural resources can have downstream effects on biodiversity and ecosystems, which may not be easy to quantify. The lack of standardized methodologies for valuing environmental costs complicates the process of incorporating them into financial reports and makes it difficult for businesses to provide accurate and comparable environmental data.

Inconsistent and Non-Transparent Reporting

Even in cases where companies do engage in green accounting, the quality and transparency of their environmental reporting can vary significantly. Some businesses provide only basic information about their environmental impact, such as energy use or waste generation, without offering detailed insights into the broader implications of their operations. In many cases, companies may only report on environmental metrics that present a positive image of their sustainability efforts, while failing to disclose negative impacts such as carbon emissions or water usage.This lack of transparency can undermine the credibility of green accounting practices and hinder stakeholders from making informed decisions about a company's environmental performance. Without clear, consistent, and reliable reporting, it becomes difficult for investors, consumers, and regulators to assess a company's environmental impact and hold them accountable for their sustainability efforts.

Opportunities for Green Accounting in India

Growing Awareness and Demand for Corporate Sustainability: As global awareness of environmental issues rises, there is a growing demand from consumers, investors, and other stakeholders for companies to demonstrate their commitment to sustainability. Indian corporates can leverage green accounting to meet these expectations by providing transparent, reliable, and comprehensive data on their environmental performance. This not only helps businesses build trust with stakeholders but also enhances their brand image and reputation. Consumers are increasingly favoring environmentally responsible brands, and investors are paying closer attention to environmental, social, and governance (ESG) factors when making investment decisions.By adopting green accounting, companies can position themselves as leaders in sustainability, appealing to a new generation of environmentally conscious consumers and socially responsible investors. This can open up new markets and customer segments, as well as attract capital from sustainability-focused funds.

Government Policies and Regulations Encouraging Sustainability: The Indian government has been increasingly promoting sustainable practices through various initiatives and regulations. For example, the government has committed to reducing carbon emissions and increasing the share of renewable energy in its energy mix. Several policies, such as the National Action Plan on Climate Change (NAPCC), the Paris Agreement, and the upcoming carbon market initiatives, are aimed at encouraging businesses to adopt sustainable practices, including green accounting. Furthermore, the Securities and Exchange Board of India (SEBI) has introduced guidelines for the disclosure of ESG information, which encourages companies to adopt green accounting practices to report their environmental impact in a standardized and transparent manner. With stronger regulatory support, businesses can leverage green accounting to ensure compliance, avoid penalties, and benefit from tax breaks, incentives, and grants provided for sustainable initiatives.

Access to Green Financing and Investment: Another significant opportunity lies in the growing availability of green financing options. Green bonds, ESG investment funds, and sustainable finance initiatives are gaining traction in India, with both international and domestic investors increasingly looking to support environmentally responsible companies. Companies that adopt green accounting can improve their ability to access these financing options by showcasing their commitment to sustainability.Investors are more likely to fund companies that provide comprehensive environmental

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data and demonstrate responsible management of environmental risks. By adopting green accounting, companies can strengthen their financial position, attract funding from green investors, and reduce the cost of capital. This can be particularly beneficial for businesses in capital-intensive industries that are seeking to fund sustainable projects or transition to greener operations.

Cost Savings through Efficient Resource Management: Green accounting can help businesses identify areas where they can reduce waste, energy consumption, and resource usage. By accurately tracking environmental costs, companies can implement cost-saving measures such as energy-efficient technologies, waste reduction strategies, and water conservation initiatives. This can lead to significant savings in operational costs, improving profitability and competitiveness in the long run.For instance, by adopting practices such as circular economy models, reducing carbon emissions, or using renewable energy, companies can lower their energy bills, waste disposal costs, and raw material expenses. Green accounting not only helps businesses understand their environmental costs but also provides a roadmap for implementing sustainability initiatives that lead to financial benefits.

Competitive Advantage in International Markets: As global supply chains become increasingly interconnected, companies are under pressure to adopt international best practices in environmental sustainability. Green accounting enables companies to align with global sustainability standards and make their operations more attractive to international buyers, partners, and investors. For instance, multinational corporations often require their suppliers to meet certain environmental criteria, and by adopting green accounting, Indian companies can demonstrate their ability to meet these standards.This gives Indian businesses a competitive edge in global markets, particularly in industries like manufacturing, textiles, and agriculture, where sustainability is becoming an important factor in trade. Moreover, companies that adopt green accounting are better positioned to comply with international environmental agreements and regulations, which can further expand their global market presence.

Conclusion

Green accounting presents a significant opportunity for Indian corporates to align their financial goals with environmental sustainability. As environmental challenges intensify and regulatory frameworks evolve, businesses that adopt green accounting practices stand to gain both in terms of compliance and competitive advantage. The growing demand for transparency in environmental performance, coupled with government support and investor interest in sustainable practices, underscores the relevance of green accounting in India’s corporate landscape.By embracing green accounting, companies not only improve their operational efficiencies and reduce costs but also enhance their brand reputation and open doors to new markets and financing options. Furthermore, as sustainability becomes an integral part of business strategy, green accounting enables companies to contribute meaningfully to India's environmental goals and the global sustainability agenda.While challenges exist, such as the lack of standardization and the complexities of data collection, the opportunities far outweigh the obstacles. By leveraging green accounting, Indian businesses can drive innovation, mitigate risks, and stay ahead in a rapidly evolving market where sustainability is no longer a choice but a necessity. As the importance of environmental stewardship continues to grow, green accounting will play a crucial role in shaping the future of Indian corporates, ensuring that they thrive in a sustainable and responsible manner.

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A STUDY ON THE IMPACT OF DIGITAL TRANSFORMATION IN ACCOUNTING

By
Dr. Shivani Acharya
Visiting Lecturer
Shah N. H. Commerce College, Valsad
&
Dr. Prashant Jariwala
In Charge Principal
City C.U. Shah Commerce College, Ahmedabad

Abstract

Accounting is a noble profession, and its rules and concepts have existed for many years and have not changed. However, the accounting industry is also being affected by economic globalization, stricter laws, and numerous technological advancements. The need for rapid adaptation and transformation of company practices and business processes without deviating from basic accounting laws and principles reflects the challenges for the accounting profession. The main issues of digitization transformation for the accounting profession are analysed and categorized in this article. Digitalization of accounting is the conversion of financial data from paper-based formats to electronic formats. Accounting software and computers are used to convert paper data into electronic form. Technological advancements have improved the ability to evaluate and report financial data quickly, effectively and efficiently. Four broad categories can be used to group digital accounting. The information in this paper has been collected, collated and presented based on recent studies, survey reports and research conducted by various professional bodies, accounting experts and some other renowned corporates across the world.

Keywords: Digital Transformation, Accounting Profession, Growth, Opportunities, Challenges

Introduction

The idea of digital accounting was developed for a more efficient tax system. It began in 2003 as an attempt by the federal government to modernize the tax and customs administration. Later, the digital bookkeeping system (NF-e) and the electronic invoice (NF-e) appeared (Sped). By 2015, the social security, digital bookkeeping system tax and labour obligations were all implemented. Digital accounting will not eliminate the daily labour of accountants; on the contrary, it actually helps to increase their productivity. Accounting, the language of business, refers to the dissemination of corporate information to stakeholders. Digital transformation refers to the integration of digital technology into all aspects of business operations, leading to fundamental changes in how organizations create value and deliver services. In emerging markets, where traditional financial reporting practices may be hampered by structural challenges and limited access to technology, embracing digital transformation can facilitate the adoption of innovative tools and methodologies that streamline financial reporting processes.

Review Literature

A literature review is a scientific publication text that summarizes the existing knowledge on a particular subject, including significant discoveries as well as theoretical and methodological contributions. A literature review is the foundation of research in almost every academic discipline. A narrow-scope literature review may be published as part of a peer-reviewed journal article reporting new research, to place the current study in the context of the related literature and to provide perspective to the reader. Any research project requires background knowledge that enables an understanding of the nature of the problems related to a particular subject and its significance for subsequent investigations.
Dr. R. Kamraj (2023) in his research paper, "DIGITALIZATION ON THE ACCOUNTING PROFESSION AND ACCOUNTING STRUCTURE- AN OVERVIEW" claims that accounting software is crucial to all businesses in the modern business environment. The same is true of accounting.

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The field has evolved much beyond simple bookkeeping and payroll, and like its companion procurement, it now plays a more strategic role for organisations who are forward-thinking. The past two years have taught us that planning ahead is essential for management and the finance department to futureproof their companies. Finance departments are in a good position to advise on hazards and comprehend what is required right away to secure long-term survival. A good understanding of cash flow, reserves, investments, potential future prospects, and/or expansion plans is required by management. Finance departments will be able to offer more visibility at the push of a button as a result of more automation, and they will then be able to provide more value-added guidance such as how to enter a new market or launch a new e-commerce service.

Tahmina Khanom (2020), studied in her research paper,"THE ACCOUNTANCY PROFESSION IN THE AGE OF DIGITAL TRANSFORMATION: CHALLENGES AND OPPORTUNITIES" claims that Despite of the fact that digital transformation will have the significant role to play in the near future around the world, substantial research paper have not been published on this topic that may present an overview of the phenomenon. In this paper, the author has an intention to serve something in this regard that can help to understand whether to take the advantage of technological advancement or not, as information has been collected from most recent studies and expert opinions. Furthermore, it will provide a brief overview of the digital transformation which may be helpful for the potential researchers in this field. However, there may be some shortcomings of the paper due to the unavailability of sufficient literature. As one begins to more fully understand the impact of software automation and the speed at which it will affect accounting jobs, accountants have two broad choices on how to react. The first is fearfully, wondering if they chose the wrong profession and should pursue a different career. The second is to seize the opportunity for change and embrace the positive and imminent impacts from automation. This includes preparing themselves for less tedious and more fulfilling work that will bring increasing value to their organizations and their clients – as well as themselves. To conclude it can be said that- "Digitalization of accounting became a necessity rather than a choice."

Oana Cristina STOICA, Liliana IONESCU-FELEAGA (2021) studied in there paper, "Digitalization in Accounting: A Structured Literature Review" claims that we did not find any academic paper in our review that directly discuses about the impact of digitalization on the accounting profession and what the future of accountants will be, which could be an interesting aspect to study. Moreover, research is needed to find how the three aspects, academia, regulation, and Proceedings of the accounting information systems are interconnected to ensure a good operation in what means digital transformation and its implications on the accounting domain. Despite its limitations related to the dataset, our study could be of interest for researchers, as it summarizes the findings in the accounting digitalization area of the past few years and gives insights for future research.

Daniel E. O'Leary studied in his paper, "Digitization, Digitalization and Digital Transformation in Accounting, Electronic Commerce and Supply Chains" claims that This paper has summarized some definitions of terms related to digitization, digitalization and digital transformation, and related those definitions to accounting, auditing, electronic commerce and supply chain problems. In so doing, the paper identified key dimensions of including "Digital Everywhere," Integration and Reengineering, and bringing the data together to generate data insights and visualizations. I also analysed the role of people in digital transformation settings and some of the potential technologies that could result in digital transformation or digitalization and the role of people in those definitions. Finally, this paper analysed several example systems in the literature and how they related to digitalization and digital transformation.

Arundhati Mahapatra, Dr.Gouri Prava Samal (2022) studied in there paper, "The Future Of Accountancy Profession In The Light Of Digitalization: Evidences From Odisha" claims that

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Digitalization is shifting the nature of business. The rapidity of evolution is growing. For administrations now it is not a matter of whether they digitalize but how fast they embrace the prospects and remain pertinent to their clients. In order to remain relevant, accountancy and finance professionals in Odisha must adopt that digital shift, knowing that the digital domain is relentlessly stirring ahead. The study leads to the inferences that the use of blockchain and IoT along with big data are still not very prevalent amongst the accounting jobs. This study furthermore displays that even in our contemporary domain, there is still a sizeable gap among the professionals to develop and implement the innovative technologies due to various causes. The traditional digital tools with which they have been related for so long are being hidden by innovative technologies that draw on a number of data sources and visually denote that data. They have to accept these alterations to make sure that they have the abilities essential to practice these tools and welcome fresh business models. At this moment it appears clear that these technologies are coming together to construct the new normal and accountants have an important part to play in this increasingly connected and interconnected ecosystem. In the upcoming years, the technology will not only be competent enough to substitute accountants in the tedious tasks, but also be able to support accountants in non-repetitive tasks similar to decision-making process. Accountants who are not ready to acquire these skills will suffer the threat of being substituted by automation. Hence, the state of Odisha has to prepare itself for adopting the digital approach to harness the benefits of it.

Research Gap: Everyone in the modern world relies on digesting new technologies and digitization. In a similar manner, the accounting department is transforming from manual to digital work processes. It has a faster and less time consuming alteration of daily life. Social media is a need in everyone's life. In this regard, the researcher learned about the present world's accounting system and the profession of digital accounting, however many authors simply addressed activities, performance, and other related research work.

Objectives of the Study

1. To understanding the digital accounting usage and needs in present profession.
2. To analysis the digital accounting transformation and performance.

Research Methodology

The present research covers only secondary data and is descriptive in nature. Secondary data was collected from numerous public and unpublished sources. These data have been collected from different published materials and relevant writings from different scholars as well as several different websites, research findings worldwide also have been used for the completion of the paper.

Conceptual Framework

Meaning of Digital accounting: Digital accounting refers to creating, transferring, managing, and storing financial information in an electronic format.In digital accounting, financial data is created, transferred, managed, and stored electronically. Many of the manual operations that accountants often deal with are being digitalized and automated using software solutions.

Meaning of Digital Transformation: Digital transformation is the integration of digital technology into all areas of a business, fundamentally changing how you operate and deliver value to customers. It's also a cultural change that requires organizations to continually challenge the status quo, experiment, and get comfortable with failure.

Table 1: Digitalization on the Accounting Profession and Performing of Accounting Tasks

Area	Effect
Main Digital Solution	1. Artificial intelligence
	2. Block chain
	3. Cloud computing

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	4. Big data
Performing Accounting Tasks	1. Automatization of routine, repetitive and structured tasks (e.g. invoicing, payroll)
	2. Non-routine and non-structured tasks will require human thinking and additional skills and knowledge (e.g. interpreting and analysing financial information)
Education and Training	1. Changes and modification of university programs
	2. Critical thinking
	3. Problem solving
	4. Skills regarding the use of artificial intelligence
	5. Accounting engineering
	6. Interpersonal interaction and communication

Source: ENTRENOVA 12-14,2019

Table 2: Top 7 Cloud-Based Online Accounting Software usages in Company

Sr. No	Accounting Software	Purpose and Process	Digital Accounting – Future
1	Zoho Books Online Accounting Software	GSTN filing system	Time & Cost Savings
2	Real Book- Cloud Accounting Software	Retailed POS Billing-Barcoding-Inventory	Analytics & Real Time Advice
3	Reach -Accounting Software	Business Dashboard, Inventory Management, Billing, Invoicing	Easy Access
4	Quick Books- Accounting Online	GST-R-9 report for filing the annual tax return for India	Accurate Financial Reports
5	Profit Books- Cloud Accounting	Sales Order, Manufacturing inventory management, warehouse, customer, supplier management	Strengthen Data Security
6	Zip Books Cloud -Based Accounting Software	Essential Accounting, Inventory, sales, purchase	E-Invoicing
7	Align Books- Online Accounting	Sales, purchase, finance, inventory, POS, job work, production, payroll, asset management	Financial Ecosystem
8	Vyapar	GST compatibility, Automatic backup of files, Automatic payments, invoice creation and printing	E-invoicing
9	Saral	Service invoicing, stock report, e-payment extract, alerts for livestock updates	Easy Access
10	Real Books	Document management, flexible bill analysis, manual bank reconciliation, sales and purchase reports	Store data, e-filing
11	Reach	Customised invoice, import option, inventory management, end-of-day reporting	Data Analysis
12	Book Keeper	Data synchronisation across users and platforms	Book Keeping

Source:-https://in.indeed.com/career-advice/career-development/best-accounting-software-india

Impact of Digitalization on Productivity: Technology advancements have enhanced the accountant's ability to interpret and report data faster, more efficiently and more effectively than ever before. The greatest benefits of the digital age to productivity can be organized into four main categories. They are as follows:

E-Business: Electronic business processes allow team members to coordinate activities for internal management and combine the client's information with a financial professional's data via the use of digital networks. Enterprise applications can be shared via internal and external networks called Intranets and Extranets. The use of these technologies distributes information through a single point of access such as a Web interface using the highest level of encryption security standards available.

Cloud Computing: Software-as-a-service (Saas) provides the core platform of the cloud computing experience. More and more companies are creating custom platforms to facilitate the access of data via

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all kinds of mobile devices. The ability to access information at anytime from anywhere is now imperative.

Enterprise Resource Planning (ERP) Systems: ERP systems are software programs that bring different departments in an organization into the same collaborative environment. They make information available from diverse groups and support activities from multiple locations. Data is accessed through a central database and shared from different functions such as accounting, finance, marketing, human resources and manufacturing. ERP improves business performance by allowing management to get a full three-hundred-sixty-degree view of how a business is performing in real-time. This is a huge advantage in the ability to make major business decisions with increased accuracy, reliability and speed.

Digital Technology Advancements: The nature of digital accounting systems are characterized by easily accessible and retrievable data through the utilization of integrated systems, real-time reporting and ongoing development. New technologies in digital accounting are designed to fulfil an overwhelming pressure for "data on demand." Smart phones, Apps and Social Media are the primary conduits for this process. Constant advancements allow financial professionals to spend more time advising clients and assisting them in developing strategies than simply generating financial reports.

Disruptive Impact of Digitalization on Accounting: In this topic focuses on four disruptive technologies: BDA, RPA, AI, and blockchain. This section presents a working definition of each of these, together with examples of how these technologies are being or could be implemented in accounting contexts, and the implications for accountant skillsets.

Big Data and Analytics: BDA has been associated with significant changes in accounting practices in areas such as management accounting and audit. With the increase in breadth of data and the tools available, BDA tools can provide much faster, real time (or near real time) insights compared with human analysis, allowing accountants to better consider risk and uncertainty in their decision-making. This moves the accountant from the role of analyst to interpreter or communicator. BDA can detect operational inefficiencies within organisations, such as the identification of bottlenecks in the production process, and improve performance evaluation, including identifying and tracking key performance measures in management control systems.

Robotic Process Automation: Many opportunities to use RPA exist within the accounting function. Cooper et al. gave examples including bank reconciliations, expense processing, inventory tracking, timesheet administration, and supplier and purchase order validations. McCann suggested increasing automation of core finance functions including financial closing and consolidation, cash-flow statement preparation, and tax reporting. Cooper et al. cited significant uptake of RPA in tax compliance work. Moffitt et al. expanded in detail on the successful implementation of RPA for routine audit processes. These authors proposed similar benefits across these examples, including that RPA can more accurately and efficiently complete process tasks, as the potential for human error in completion is removed RPA is seen "as a stepping stone to more sophisticated automation" with RPA vendors adding AI to traditional rules-based bots – this is discussed further below.

Transactional Accounting Processes: Clerical accountants are the most vulnerable to digitalization and automation because their roles involve routine tasks like bookkeeping and data entry. Primary examples are customer order processing, invoicing, credit, accounts receivable, payment collection, vendor purchase order processing and accounts payable, payroll processing, and travel and expense processing.

Fiscal Period-end Accounting Closes: The risk of digitalization for accountants is due to the increasing application of affordable commercial software that automates the workflow processes of the monthly,

quarterly and fiscal year-end accounting close. Small businesses, similar to individual households, can now use commercial tax preparation software instead of hiring tax professionals from a third-party service.

Auditing: The purpose of an audit is to obtain reasonable assurance about whether financial statements are free of material misstatements and irregularities due to error or fraud. Digitalization improves the quality of an audit in many different ways. For example, using an AI-expert system capable of scanning through 100% of the data and applying advanced analytics and anomaly detection in the audit can lead to better-informed risk assessments. It leads to a far more focused and relevant (higher quality based on risk) sample which increases the speed of engagements and decreases liability.

Business Process Outsourcing (BPO) of Accounting Tasks: The general term for third parties who perform outsourced accounting tasks is business process outsourcing (BPO). The BPO business model is typically based on fee-for-service pricing. With centralization and economies of scale from having multiple customers, a BPO provider can often perform both front and back office accounting tasks more efficiently.

Regulatory filings: Automation and technology have already begun to revolutionize regulatory compliance reporting. The implications are that rather than accountants requiring only mathematical acumen, mastery of tax laws or bookkeeping proficiency, accountants can devote more time with increased skill to interpreting and analysing financial information. For example, they can use XBRL, a format that can now digitally transmit its financial statement filings to government regulatory agencies.

How to Mitigate the Disruptive Impact on Accounting
Increasing skills with education and training: As output of automation increases, accountants can convert their feared risks into opportunities. They can do this by acquiring new skills and capabilities such as with planning, strategizing and analysis which contribute higher value to the organization than simply reporting data. This can be accomplished via education and training.

Augmenting digital automation: In certain cases, accountants will find that robotic and analytic software does not fully replace a job function. Instead, it will automate the repetitive tasks of a workflow process, and the accountant can then augment the automation with value-adding work

New business models from digital disruption: Entrepreneurial accountants will recognize the opportunities that digitalization, automation and AI can bring for expanding existing business models such as business process outsourcing and tax processing services. Additional opportunities are to pursue new business models, such as financial software implementation services, including providing the analysis generated from the information produced from the software.

Impact of Technological Trends on Accountancy Profession: According to ACCA (Association of Chartered Certified Accountants)-following are the major emerging and converging technologies that may influence the accountancy profession in the coming years:

Mobility: Accountants are exploiting mobile technologies to deliver productivity and efficiency gains, bring businesses closer to their clients, and stay connected to them whether they are in the office or travelling.

Cloud System: Accountants and the organizations they work with and for, are exploiting the cloud - in business, practice and the third sector.

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Social Collaboration: The professional lives of accountants are being reshaped by social collaboration and the new possibilities it creates. Crowd sourcing is being used to accelerate and improve the development of products and services, and crowd funding is bringing start-ups and projects together with sources of finance.

Digital Service Delivery: Accountants are using digital services to provide resources and to access resources. Accountancy practices are offering self-service features, such as online data vaults that clients can use to access statutory and management reports and other material the firm has worked on.

Big Data: Amazon, IBM and Google are among the organizations using big data to business advantage by targeting sales efforts and personalizing products, driving efficiency and quality, and producing higher levels of customer satisfaction and experience.

Payment Systems: E-commerce features are increasingly being built into software and e-banking is following, even entry-level accounting systems now automate links with bank accounts.

Cyber Security: As internet use has increased, the tools to manage cyber security and to protect against deliberate attacks and accidental loss of data have become widely available – and affordable.

Robotics: A robot is a system that contains sensors, control systems, manipulators, power supplies and software, which all work together to perform a task or series of tasks.

Augmented and Virtual Reality (AR and VR): Augmented reality (AR) can enhance our perceptions of the real environment by overlaying images of it with sensory input such as sound, graphical overlays, video and various other types of data.

Artificial intelligence (AI): Artificial intelligence (AI) describes a machine or software that can demonstrate behaviour indistinguishable from that of the human brain. Accountants increasingly rely on the expert knowledge built into software in a range of scenarios. Auditors use smart software to automate parts of the auditing process, and there are other specialist applications to help with compliance in areas ranging from financial reporting to international tax.

Suggestion

Without a doubt, the epidemic has sped up the digital transformation process. It's a truth that has unexpectedly been pressed onto the accounting community and the rest of society. In addition to this, organizations are dealing with a number of major obstacles, including the need to recover from two years of intermittent lockdowns, the very real threat of bankruptcy, rising energy costs, tax increases, coping with Covid, the cost-ofliving problem, and financial difficulties. In this sense, digitalization is more supportive and helps them occasionally keep running their firm. One significant area of automation, artificial intelligence (AI), is poised to fundamentally alter the way accounting operations are conducted. AI will increase productivity, decrease errors, and streamline workflows while assisting professionals in making decisions about their businesses in real time using accounting data as the basis for their analysis.

Accountants need to think strategically. This includes being aware of the changes, be forward looking, be capable of spotting problems and finding the right solutions. They need to work like business partners and advisors to other functions in their organizations. Moreover, the accounting professionals need to learn and understand digital technologies to be able to add value to their business.

Accountants in practice will need to improve their understanding of and practical ability to use and leverage technology. For example, integrated Enterprise Resource Planning (ERP) with virtual access using mobile devices, communication through social media, and customizable user-friendly websites with up-to-date content will be fundamental aspects of practice

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As the most trusted business advisors, the accounting professionals will be the first point of contact regarding digital queries, and they must develop their own skills regarding the digital options available to clients so that they can point them in the right direction.

Conclusion

In this perspective, accounting software is crucial to all businesses in the modern business environment. The same is true of accounting. The field has evolved much beyond simple bookkeeping and payroll, and like its companion procurement, it now plays a more strategic role for organisations who are forward-thinking. The past 3 to 4 years have taught us that planning ahead is essential for management and the finance department to futureproof their companies. Finance departments are in a good position to advise on hazards and comprehend what is required right away to secure long-term survival. A good understanding of cash flow, reserves, investments, potential future prospects, and/or expansion plans is required by management. Finance departments will be able to offer more visibility at the push of a button as a result of more automation, and they will then be able to provide more value-added guidance such as how to enter a new market or launch a new e-commerce service.

In this paper, the author has an intention to serve something in this regard that can help to understand whether to take the advantage of technological advancement or not, as information has been collected from most recent studies and expert opinions. Furthermore, it will provide a brief overview of the digital transformation which may be helpful for the potential researchers in this field. However, there may be some shortcomings of the paper due to the unavailability of sufficient literature.

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PROPOSED REFORMS IN SHORT-TERM AND LONG-TERM CAPITAL GAIN TAX RATE AND ITS IMPACT ON TAXPAYERS: A CRITICAL STUDY

By
Dr. Amish Patel
Assistant Professor
Shree R.P.Arts, K.B.Commerce & Smt.B.C.J. Science College, Khambhat.

Abstract

While presenting the Union Budget 2024-25, Union Minister for Finance and Corporate Affairs Nirmala Sitharaman proposed numerous tax-reforms.The union budget 2024-25 includes significant revisions to capital gain taxation, with the goal of simplifying the tax structure and delivering relief to taxpayers. The budget introduces new tax rates for both short-term and long-term capital gain, which affect a wide range of financial and non-financial assets. These changes reflect the government's commitment to making the tax system more equal and less costly for taxpayers, particularly those with lower and moderate incomes.The purpose of this study is to critically evaluate the impact of proposed capital gain tax change. It also attempts to argue for the government's promise to making the tax system more egalitarian and less burdensome for taxpayers, primarily benefiting the lower and middle classes. In the end, this study attempts to make a substantial contribution to the disclosures of potential capital gain tax amendments, offering policymakers and other stakeholders' valuable information.

Keywords: Tax-reforms, Taxpayers, Short-Term Capital Gain Tax, Long-Term Capital Gain Tax,

Introduction

Budget 2024, introduced by Finance Minister Nirmala Sitharaman, includes major modifications to the capital gaintax structure. Capital gain which refers to any profit or gain derived from the sale of a 'capital asset,' is an important consideration in an investor's financial planning. The tax changes suggested in budget 2024 may have far-reaching consequences for investors across multiple asset classes.The main objective of the study is to check impact of change in capital gain on tax-payersand to check impact of removal of indexation on tax-payers.

Review of Literature

As the union budget has been declared on 23rd July 2024, literature available in this area is less. (Ghosh, 2024) in his article on 'On discarding indexation for long-term capital gains' taken feedback from corporate and industry. One feedback indicates that how removal of indexations will affect tax liability that will be depend on the nature of asset and the time of purchase. Another feedback revealed that those looking to buy a second house for the purpose of investment may potentially refrain from doing so. Notable feedback from AAP MP Raghav Chadhathat discarding indexationwill entail potential sale of properties at circle rates (minimum price at which a real estate is to be sold), which will resulted into undervaluation of the real estate which helps furbish lower capital gains.

(Thaker, 2024) in his article on 'No Indexation for LTCG tax on property bought after July 23, 2024, is unfair; Will deter Long Term Investment: View ' concluded that the amendment in the finance bill is a welcome move as it will provide an option to choose between LTCG tax of 20% with indexation or 12.5% without indexation for property. It would promote honest tax payments and long-term investments. However, removal of indexation benefit for properties and other long-term assets classes bought after July 23, 2024 must be revisited to maintain the benefits of investmentsfor long term.

(Dhanorkar, 2024) in his article on 'New capital gains taxation rules: Investors can pick assets purely on merit rather than to optimise tax outgo' concluded that in the long run removal of indexation will not affect more on investors. The study also reveals that the investment should earn at least 11% return per annum to incur lower tax liability under the new tax rate.Hence, it is obvious that one can build a portfolio without dictated by tax rates.

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(Karanjotsinh, 2024) in his article on 'Taxation of real estate transactions: A post-budget analyses revealed that the amendments to capital gain taxation will diversely impact the taxpayers. The lowering in long-term gain tax rates may ease the burden of capital gain in the case of unlisted shares.

(Divvela Venkata Sasank, 2024) in their study on Proposed Changes in Capital Gain & its Impact on Tax-Assesses, revealed that the increased capital gain tax rates threaten to reduce investment returns, raising capital costs and depressing total economic investment.

Research Gap

The above literature reveals that most of the studies focus on the benefits of the proposed changes, specifically the ability for investors to choose assets based on merit rather than tax optimization. It analyses the impact of removal of indexation on the tax liabilities. This study analyses the proposed reforms in short and long-term capital gain tax &its impact on tax payers.

Research Methodology:

Research Statement:

The research statement studied is termed 'Proposed Reforms in Short-Term and Long-Term Capital Gain Tax Rate and its impact on Taxpayers: A Critical Study'

Objective of the study

The objectives of the study have been mentioned below.

1. Toanalyse the impact of proposed reforms in short-term capital gain tax rates on taxpayers.
2. Toanalyse the impact of proposed reforms in long-term capital gain tax rates on taxpayers.
3. Toanalyse the impact of removal of indexation onlong-term capital gain tax on taxpayers.

Scope of study: The present study has been done to know impact of proposed reforms in short-term and long-term capital gain tax on taxpayers. A critical analysis has been done to arrive at conclusion.

Methodology: This research is exploratory research as well as descriptive.

Methods and Materials

The research is based on secondary data which includes current provisions regarding short-term and long-term capital gain tax rates and proposed reforms regarding short-term and long-term capital gain tax rates available in Income Tax Act 1961, Union Budget 2024-25 and also available in various articles, journals, and newspapers.

Significance of the study: The present study focuses on the analysis of proposed reforms in short-term and long-term capital gain tax rate and its impact on taxpayers.

Delimitations of the study: The study is restricted only to India although other countries have made reforms regarding capital gain tax rates in recent time.

Data Analysis: The term' capital asset' has been defined in Section 2(14) of the Income-tax Act. It means "Property of any kind held by an assesse, whether or not connected with his business or profession andany instruments owned by a Foreign Institutional Investor who invests in such securities in compliance with the rules of the SEBI."

The holding period for a specific capital asset determines whether it is a long-term or a short-term capital asset.

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Before Union Budget 2024-25	After Union Budget 2024-25
(A) Short-Term Capital Asset An asset which had been held after its acquisition and before it's transfer for maximum time of 36 months or 24 months or 12 months will be consider as Short-Term Capital Asset.	(A) Short-Term Capital Asset An asset which had been held after its acquisition and before it's transfer for maximum time of 24 months or 12 months will be consider as Short-Term Capital Asset.
(B) Long-Term Capital Asset: An asset which had been held after its acquisition and before it's transfer for more than 36 months or 24 months or 12 months will be consider as Long-Term Capital Asset.	(B) Long-Term Capital Asset: An asset which had been held after its acquisition and before it's transfer for more than 24 months or 12 months will be consider as Long-Term Capital Asset.
(A) 12 months criteria: 1. Equity shares or preference shares listed on recognized stock exchange in India. 2. Debentures, bonds, government securities listed on recognized stock exchange in India. 3. Zero Coupon Bonds. (Listed or unlisted). 4. Units of unit trust of India (Listed or unlisted). 5. Units of specified equity oriented mutual funds (Listed or unlisted) etc. (B) 24 months criteria: 1. Unlisted equity shares on recognized stock market in India. 2. Immovable Property: Land, Building, or Both. (C) 36 months criteria: 1. Jewelry (Gold, Silver, Platinum etc.). 2. Costly stones. 3. Goodwill. 4. Right to purchase right equity shares. 5. Right to purchase an asset. 6. Lease-hold right, License to manufacture a product. 7. Copyright etc.	(A) 12 months criteria: 1. Equity shares or preference shares listed on recognized stock exchange in India. 2. Debentures, bonds, government securities listed on recognized stock exchange in India. 3. Zero Coupon Bonds. (Listed or unlisted). 4. Units of unit trust of India (Listed or unlisted). 5. Units of specified equity oriented mutual funds (Listed or unlisted) etc. (B) 24 months criteria: 1. Unlisted equity shares on recognized stock market in India. 2. Immovable Property: Land, Building, or Both. 3. Jewelry (Gold, Silver, Platinum etc.). 4. Costly stones. 5. Goodwill. 6. Right to purchase right equity shares. 7. Right to purchase an asset. 8. Lease-hold right, License to manufacture a product. 9. Copyright etc.

The below table gives an insight between the method of calculating capital gain tax before union budget 2024-25 and after union budget 2024-25.

Before Union Budget 2024-25	After Union Budget 2024-25
(A) Short-Term Capital Gain Tax: Short-term capital gain deriving from the sale of equity shares, equity-oriented fund units, or a unit of a business trust that are liable for STT shall be taxed at 15%, while other short-term capital gain shall be taxed at slab rates.	(A) Short-Term Capital Gain Tax: Short-term capital gain deriving from the sale of equity shares, equity-oriented fund units, or a unit of a business trust that are liable for STT shall be taxed at 20%, while other short-term capital gain shall be taxed at slab rates.
(B) Long-Term Capital Gain Tax: 1. Long-term capital gain tax at the rate of 20% after taking benefit of indexation for the transfer before 23/7/2024. 2. Long-term capital gain arising from transfer of listed securities, units or a zero coupon [other than mentioned in point 3 below] bonds shall be taxable at lower of following: If transfer occurs before 23rd July 2024, LTCG will be taxed at either the following rate, whichever is advantageous, i. 20% after taking benefit of indexation; or ii. 10% without taking benefit of indexation. 3. Long-term capital gain arising from transfer of listed equity share, or a unit of an equity-oriented fund or a unit of a business trust as referred to in Section 112A shall be chargeable at the following rate: i. If asset sold before 23rd July 2024, 10% on the amount more than Rs. 1 Lac after taking benefit of indexation.	(B) Long-Term Capital Gain Tax: 1. Long-term capital gain tax at the rate of 12.5% without taking benefit of indexation for the transfer on or after 23/7/2024. 2. Long-term capital gain arising from transfer of listed securities, units or a zero coupon [other than mentioned in point 3 below] bonds shall be taxable as mentioned below: If transfer occurs on or after 23rd July 2024, LTCG will be taxable at the following rate: i. 12.50% without taking benefit of indexation. 3. Long-term capital gain arising from transfer of listed equity share, or a unit of an equity-oriented fund or a unit of a business trust as referred to in Section 112A shall be chargeable at the following rate: i. If asset sold on or after 23rd July 2024, 12.50% on the amount more than Rs. 1.25 Lac without taking benefit of indexation.

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In case of sale of land, building or both (acquired before 23/07/2024 by resident individuals and resident HUFs) , if the long-term capital gain tax calculated at 12.5% without indexation benefit results in a higher amount can apply indexation and pay tax at the old rate of 20%.

Explanation with illustration:

Following illustrations will be helpful to understand the impact of the proposed reforms on taxpayers regarding capital gain tax rates in union budget 2024-25.

Explanation with Illustration for Short-Term Capital Gain Tax:

Mr. X had purchased 1,000 equity shares of A Ltd. for Rs. 20,00,000 on 1st May 2024 and sold on 22nd July 2024 for Rs. 30,00,000. Calculate Short-Term Capital Gain Tax for Assessment Year 2025-26 (Assuming that Mr. X has opted for New Tax Regime).

Particulars	**Amount (Rs.)**
Sale Consideration	30,00,000
Less: Cost of Acquisition	20,00,000
Short -Term Capital Gain	10,00,000
Short-Term Capital Gain Tax	10,00,000*15% = 1,50,000

Now in the above example if Mr. X had sold equity shares of A Ltd. on 24rt July 2024 for Rs. 30,00,000. Let us check the difference in tax liability.

Particulars	**Amount (Rs.)**
Sale Consideration	30,00,000
Less: Cost of Acquisition	20,00,000
Short -Term Capital Gain	10,00,000
Short-Term Capital Gain Tax	10,00,000*20% = 2,00,000

Here, the tax-payer has to pay Rs. 50,000 more tax, which is almost 33.33 % more than the current tax.

Explanation with Illustration for Long-Term Capital Gain Tax:

Mr. Y(Indian Resident and Individual) bought a residential house 2018-19 for Rs.5,60,000and sold on 22nd July 2024 for Rs. 50,00,000. Cost Inflation Index for 2018-19 : 280 and 2024-25: 363.Calculate Long-Term Capital Gain Tax for Assessment Year 2025-26 (Assuming that Mr. Y has opted for New Tax Regime).

Particulars	**Amount** (Rs.)
Sale Consideration	50,00,000
Less: Cost of Acquisition	7,26,000
5,60,000*363/280	
Long-Term Capital Gain	42,74,000
Long-Term Capital Gain Tax	42,74,000*20% = 8,54,800

Now in the above example if Mr. Y had sold the residential house on 24th July 2024 for Rs. 50,00,000. Let us check the difference in tax liability.

Particulars	**Amount** (Rs.)
Sale Consideration	50,00,000
Less: Cost of Acquisition	5,60,000
Long-Term Capital Gain	44,40,000
Long-Term Capital Gain Tax	44,40,000*12.5% = 5,55,000

Here, the tax-payer has to pay Rs. 2,99,800less tax, which is almost 35% less than the current tax.Here, the tax-payer has to pay less tax at 12.5% without indexation than old rate of 20% with indexation.

Explanation with Illustration for Long-Term Capital Gain Tax(Section 112A):

Mr. Z had purchased 1,000 equity shares of BLtd. in 2019-20 for Rs. 2,89,000 and sold on 22nd July 2024 for Rs. 9,00,000. Cost Inflation Index for 2019-20 : 289 and 2024-25: 363. Calculate Long-

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Term Capital Gain Tax for Assessment Year 2025-26 (Assuming that Mr. Z has opted for New Tax Regime).

Particulars	**Amount** (Rs.)
Sale Consideration	9,00,000
Less: Cost of Acquisition	3,63,000
2,89,000*363/289	
Long-Term Capital Gain	5,37,000
Less: Exemption	1,00,000
Long-Term Capital Gain Tax	4,37,000*10% = 43,700

Now in the above example if Mr. Z had sold equity shares of B Ltd. on 24th July 2024 for Rs. 9,00,000. Let us check the difference in tax liability.

Particulars	**Amount** (Rs.)
Sale Consideration	9,00,000
Less: Cost of Acquisition	2,89,000
Long-Term Capital Gain	6,11,000
Less: Exemption	1,25,000
Long-Term Capital Gain Tax	4,86,000*12.50% = 60,750

Here, the tax-payer has to pay Rs. 17,050 more tax, which is almost 39% more than the current tax.

Findings, Recommendations and Suggestions:

Findings:

1. Proposed reforms regarding the increase in long-term capital gain taxrate would increase the tax burden for taxpayers except for those who own land, buildings, orboth.
2. Proposed reforms regarding the increase in short-term capital gain tax rate would increase the tax burden for taxpayers.
3. Increased capital gain tax rates, removal of indexation, new classification of capital assets will certainly affect the overall investment sentiment in the economy.

Recommendations and Suggestions:

1. The first recommendation of the study is that the proposal of decreasing of holding period from 36 months to 24 months for some capital assets is acceptable as it will not affect significantly to investors.
2. The second recommendation of the study is to reintroduce indexation which can protect the long-term investor from inflation and maintain the time value of money.
3. The third recommendation of the study is that the proposed reforms made in Union Budget 2024-25 regarding increase long-termand short-term capital gain tax rate should be reviewed by the policymakers.

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A STUDY ON INVESTORS' AWARENESS AND PERCEPTIONS OF SOVEREIGN GREEN BONDS IN INDIA

By
Dr. Alpa A. Thaker
Assistant Professor
&
Dr. Mahendra H. Maisuria
Associate Professor
&
Dr. Prashant T. Jariwala
Associate Professor
City C.U. Shah Commerce College, Ahmedabad

Abstract

Over a last decade, green bonds have risen as a remarkable breakthrough in the field of sustainable finance. Green bonds are the essential financial tools for funding environmentally projects. The present paper highlights about the progress of Green Finance in India and also explores the awareness of Investors' regarding Sovereign Green Bonds (SGBs). Data was collected from primary sources with structured questionnaire and secondary sources i.e. from official websites of RBI and SEBI, journals and articles. A questionnaire was sent (via Google form) across different demographics of individual investors together insights on their familiarity with this financial instrument. The findings reveal that age group does not play a major role in shaping most respondents' views on Sovereign Green Bonds, except in the areas of occupation and perceptions of coupon rates. These insights can help inform strategies for engaging different age groups in discussions about green investment opportunities.

Keywords: Green bonds, Sustainable Finance, Investors

Introduction:

In recent times, Economic Market has come up with the concept "Green Finance". India started emphasizing the need for 'Green Finance" in the early 2007. In December 2007 RBI issued a notification on "Corporate Social Responsibility". Green Finance refers to financial activities that support environmental sustainability like investment in renewable energy, energy efficiency and carbon reduction projects. It includes green bonds, eco-friendly investments, and renewable sources, aiming to promote environmental and social benefits. Green Bonds are debt instruments issued to raise capital for projects that have positive environmental or climate benefits. They have been one of the innovative financial tools used by many agents-from sovereigns to corporates and multilaterals- to finance climate action. Green bond global cumulative issuance reached $4 trillion, as of February 2023. Twenty-nine sovereigns have tapped the green bond market and issued the equivalent of $290 billion.

While green bonds can be issued by anyone, Sovereign Green Bonds can be issued only by National Governments. Sovereign green bond proceeds will be deposited into the Consolidated Fund of India and managed by the MoF's Public Debt Management Cell. Yes, Bank issued the country's first green bond in 2015. In the Union Budget 2022-23, The finance minister announced the Government's decision to issue Sovereign Green Bonds a kind of government debt that specifically funds projects attempting accelerate India's transition to a low carbon economy. Green Bond issuance reflects India's commitment to environmentally sustainable projects and contributes to the broader goal of maintaining sustainability.

Literature Review

Martin & Moser (2016) studied whether managers make unprofitable green investment what they disclose and how investors react. Managers often make green investments even though this decreases

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their own and other current shareholders' payoffs. According to their findings investors' positive response to disclosures of a green investment are based at least in part on the societal benefits associated with the investments helps as better understand the rapid increase in SRI funds. They demonstrated the advantages of using experiments to examine important CSR issues that are difficult to study effectively using archival data.

Karpf & Mandel (2018) investigated the differences between the yield term structures of green and conventional binds in the US municipal bonds market. They found that municipal markets have tended to penalize green bonds by trading them at lower prices and generating higher yields than anticipated by their clients. They concluded that Green Bonds are becoming an increasingly attractive investment to bridge the climate finance gap for mitigation and adaptation.

Babita Jha & Priti Bakshi (2019) explored the various green financing initiatives taken by the public and private sector organisations/banks in India. The study showcases the various challenges in the area of green financing in India and also recommends measures to face those challenges.

Flammer, Toffel and Viswanathan (2021) examined whether in absence of mandated disclosure requirements, shareholder activism can elicit greater disclosure of firms' exposure to climate change risk. They found activism of environmental shareholder increased the voluntary disclosure to climate change risks. This led stock market reaction positively to companies' climate risk disclosure following environmental shareholder activism.

Mahajan, Singh, Sapna (2024) studied that green bonds are emerging as a new investment total in the Indian Market. They are being used to manage climate change. Sustainability can be achieved only if eco-friendly activities could be followed in spirit by all companies. They conceptualized the meaning, need and importance of Green Bonds as an initiative towards investment tool and sustainable development in India.

Need and Scope of the Study

As the Green bond market is growing rapidly in the current context, only few research studies have been conducted in this field so far. Lack of investors' awareness and advantages of investing Sovereign Green Bonds are the research gap. It is in initial stage in our country so investors might not be aware about investing in green bonds. By addressing this gap, this study can help for investors' awareness and driven them investment in sustainable finance.

The scope of the study aims to examine the awareness of investors' regarding Sovereign Green Bonds and their benefits for the sustainable development in India. The study also identifies the factors that influence investors' decision making in green bonds.

Objectives

Based on the literature review and need for the study, following objectives are taken.

1. To analyze the relationship between age and various demographic and awareness-related variables concerning Sovereign Green Bonds.
2. To study the progress of Sovereign Green Bonds from Indian Perspective.
3. To study the level of awareness of investors regarding Sovereign green bonds.
4. To identify the factors influencing investors in Sovereign green bonds.

Research Methodology

The study of the data collected from the primary sources as well as secondary sources. Secondary data was collected from reputed journals, articles and official websites of RBI and SEBI. Primary data was collected through structured Questionnaire (via google form) during December 2024 to January 2025. 70 responses were collected from the retail investors.

The study aims to analyse the relationship between age and various demographic and awareness-related variables concerning Sovereign Green Bonds. Specifically, the research has been examined the association of age with the following variables:

- Gender
- Education level
- Annual income
- Occupation
- Sources of information about Sovereign Green Bonds
- Consideration for investment in Sovereign Green Bonds
- Need for additional information about Sovereign Green Bonds
- Factors influencing investment
- Suitability for Environment Project
- Perception of investors

The relationship between age and these variables was analysed using statistical techniques, particularly the chi-square test, to determine whether significant associations exist. This approach helps evaluate whether age influences respondents' awareness and perception of Sovereign Green Bonds.

Hypotheses of the Study

Hypothesis of the study can be taken as,

Null Hypothesis (H_0): There is no significant association between age and various demographic and awareness-related variables concerning Sovereign Green Bonds.

Data Analysis and Interpretation

Table 1: Progress of India towards Green Finance through Sovereign Green Bonds

	1st Issuance		Reopening	
Issue Date	January 25, 2023		February 9,2023	
Amount	INR 40 billion ($490 million)	INR 40 billion ($490 million)	INR 40 billion ($484 million)	INR 40 billion ($484 million)
Tenor	5 years	10 years	5 years	10 years
Coupon/Yield	7.10%/7.10&	7.29&/7.29&	7.10%/7.23%	7.29%/7.30%
Oversubscription	2.4x	2.4x	1.7x	2x

Source: Reserve Bank of India Press Releases

From the above table we can say that in 2023, India issued Sovereign Green Bonds for the first time to fund climate change mitigation projects under its Sovereign Green Bond Framework. The first tranche, issued on January 25, 2023, totalled INR 80 billion, with INR 40 billion each in 5-year and 10-year bonds. The 5-year bonds, with a 7.1% coupon rate, were oversubscribed by 2.4 times, while the 10-year bonds, yielding 7.29% annually, were oversubscribed by 3.8 times. A second tranche of similar value and maturities saw both bond types oversubscribed by 2 times.

Table 2: Testing of Hypothesisfor Demographic variables

Demographic Variables	Age Group						Value of Chi-Square test	P Value	Ho
		21-30	31-40	41-50	51>	Total			
Gender	Female	9	8	11	4	32	6.66	0.084	Accepted
	Male	5	10	9	14	38			
	Total	14	18	20	18	70			
Education	HSC			1		1	17.6	0.128	Accepted
	Graduate	4	4	2	2	12			
	Post Graduate	8	4	6	3	21			
	Ph.D.	2	10	9	12	33			
	Professional			2	1	3			
	Grand Total	14	18	20	18	70			
Annual Income	10 lakhs - 25 lakhs		5	6	6	17	47.47	3.21	Accepted

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	25 lakhs & Above		1	4	10	15			
	5 lakhs - 10 lakhs	3	10	5	2	20			
	Below 5 Lakhs	11	2	5		18			
	Grand Total	14	18	20	18	70			
Occupation	Business		2	1	1	4	47.47	0.023	Not Accepted
	Govt. Employee		9	9	11	29			
	Other	4		2	3	9			
	Private Employee	9	7	8	3	27			
	Student	1				1			
	Grand Total	14	18	20	18	70			

Table 3: Hypothesis Testing for Awareness of Sovereign Green Bonds

Age Group➡	21-30	31-40	41-50	51 and above	Grand Total
Fully aware	2	5	5	2	14
Moderately aware		4	5	6	15
Not at all	5	5	7	5	22
Slightly aware	7	4	3	5	19
Grand Total	14	18	20	18	70
Chi-square statistic is 10.317, P-value is 0.326 (> 0.05) , Ho : Accepted					

Table 4: Hypothesis Testing for Sources of Information on Sovereign Green Bonds

Age Group➡	21-30	31-40	41-50	51 and above	Grand Total
Colleagues/Peers	4	2	1	4	11
Financial News and Media	2	5	4	6	17
Govt or Central Bank Communication		1	1		2
Online Platforms	3	9	8	3	23
Other (other specify)	5	1	6	5	17
Grand Total	14	18	20	18	70
Chi-square statistic is 14.41, P-value is 0.276 (> 0.05), Ho: Accepted					

Table 5: Hypothesis Testing for Factors Influencing Investment in Sovereign Green Bonds

Age Group➡	21-30	31-40	41-50	51 and above	Grand Total
Alignment with personal sustainability goals	1		2		3
Environmental Impact			1	2	3
Environmental Impact, Government backing & Security, Tax Incentives	1				1
Environmental Impact, Government backing &Security, Transparency and Reporting		1			1
Environmental Impact, Tax Incentives			1		1
Government backing & Security	2	2	2	3	9
Other	3	3	1	5	12
Returns on Investments, Environmental Impact			2	1	3
Returns on Investments, Environmental Impact, Government backing & Security, Alignment with personal sustainability goals, Transparency and Reporting, Tax Incentives				1	1

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Returns on Investments, Environmental Impact, Government backing & Security, Tax Incentives	1	1	1		3
Returns on Investments, Government backing & Security	1	2	1		4
Returns on Investments, Government backing & Security, Alignment with personal sustainability goals, Transparency and Reporting, Tax Incentives	1	1			2
Returns on Investments, Government backing & Security, Tax Incentives		1	1		2
Returns on Investments, Government backing & Security, Transparency and Reporting, Tax Incentives		1	1		2
Returns on Investments, Tax Incentives	1				1
Returns on Investments, Transparency and Reporting	1				1
Tax Incentives		1	2	1	4
Grand Total	14	18	20	18	70
Chi-square statistic is 34.87, P-value is 0.77 (> 0.05), Ho : Accepted					

Table 6: Hypothesis Testing for Considerations in Investing in Sovereign Green Bonds

Age Group ➡	21-30	31-40	41-50	51 and above	Grand Total
Maybe	11	10	11	8	40
No	1	2	2	6	11
Yes	2	6	7	4	19
Grand Total	14	18	20	18	70
Chi-square statistic is 8.24, P-value is 0.22(> 0.05), Ho: Accepted					

Table 7: Hypothesis Testing for the Biggest Challenges in Investing in Sovereign Green Bonds

Age Group ➡	21-30	31-40	41-50	51 and above	Grand Total
Lack of transparency or reporting	1	2	3	1	7
Limited Knowledge of Green Projects funded	2	5	6	2	15
Limited Liquidity	1	1	2	4	8
Low returns	4	3	3	2	12
Other	4	5	1	6	16
Political or Regulatory instability	2	2	5	3	12
Grand Total	14	18	20	18	70
Chi-square statistic is 13.28, P-value is 0.35 (> 0.05), Ho: Accepted					

Table 8: Hypothesis Testing for the Benefits of Investing in Sovereign Green Bonds

Age Group. ➡	**21-30**	**31-40**	**41-50**	**51 and above**	**Grand Total**
Diversification of Investment Portfolio	2	1	2	2	7
Diversification of Investment Portfolio, Long term financial returns	1	2	1		4
Diversification of Investment Portfolio, Long term financial returns, Support for National Sustainability			1		1
Diversification of Investment Portfolio, Support for National Sustainability	1		1		2
Long term financial returns	3	3	6	6	18
Long term financial returns, Support for National Sustainability		1			1

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Other	3	4	2	5	14
Positive Environment Impact	1	2	3	3	9
Positive Environment Impact, Diversification of Investment Portfolio		1	1	1	3
Positive Environment Impact, Diversification of Investment Portfolio, Long term financial returns			1		1
Positive Environment Impact, Diversification of Investment Portfolio, Long term financial returns, Support for National Sustainability	2	1		1	4
Positive Environment Impact, Diversification of Investment Portfolio, Support for National Sustainability		2			2
Positive Environment Impact, Long term financial returns		1	1		2
Positive Environment Impact, Support for National Sustainability			1		1
Chi-square statistic is 29.9, P-value is 0.85 (> 0.05) , Ho : Accepted					

Table 9: Additional Information Needed for Investing in Sovereign Green Bonds

Age Group ➡	21-30	31-40	41-50	51 and above	Grand Total
Case Studies	2		2		4
Clearer financial performance		1	3	5	9
Detailed Information an Environmental Project Financed	5	5	7	3	20
Expert advice on investing and policy strategy	3	4	3	3	13
Government Initiatives and policy updates	1	4	2	3	10
Other	3	4	3	4	14
Grand Total	14	18	20	18	70
Chi-square statistic is 14.01, P-value is 0.525 (> 0.05) , Ho : Accepted					

Table 10: Hypothesis Testing for Age and Willingness to Recommend Sovereign Green Bonds

Sum of Scale ➡	1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly agree					
Age Group	1	2	3	4	5	Grand Total
21-30	2	6	12	16	5	41
31-40	1	4	18	20	20	63
41-50	1	6	21	24	15	67
51 and above	5	4	12	24	5	50
Grand Total	9	20	63	84	45	221
%	4.07239819	9.049774	28.507	38	20	100
Chi-square statistic is 14.87, P-value is 0.08 (> 0.05), Ho : Accepted						

Table 11: Hypothesis Testing for Age and Perception of Sovereign Green Bonds' Suitability for Environmental Projects

Sum of Scale ➡	1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly agree					
Age Group	1	2	3	4	5	Grand Total
21-30	2	4	9	20	10	45
31-40		8	15	24	15	62
41-50		4	18	28	25	75
51 and above	4	6	15	20	5	50
Grand Total	6	22	57	92	55	232
%	2.586206897	9	25	40	24	100
Chi-square statistic is 19.28, P-value is 0.08 (> 0.05), Ho: Accepted						

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Table 12: Hypothesis Testing for Perception of Ease in Investing in Green Bonds

Sum of Scale➡	1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly agree					
Age Group	1	2	3	4	5	Grand Total
21-30 years			24	16	10	50
31-40 years	2	4	21	16	15	58
41-50 years	1	4	27	20	15	67
51 and above	2	4	21	24	5	56
Grand Total	5	12	93	76	45	231
%	2.164502165	5	40	33	19	100
Chi-square statistic is 13.76, P-value is 0.32 (> 0.05) , HO : Accepted						

Table 13: Hypothesis Testing for Perception of Low Risk in Investing in Sovereign Green Bonds Compared to Other Investment Options in India

Sum of Scale➡	1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly agree					
Age Group	1	2	3	4	5	Grand Total
21-30 years	1	4	15	16	10	46
31-40 years	2	2	24	16	15	59
41-50 years	2	2	21	24	20	69
51 and above	2	4	24	20	5	55
Grand Total	7	12	84	76	50	229
%	3.056768559	5	37	33	22	100
Chi-square statistic is 13.76, P-value is 0.32 (> 0.05), Ho: Accepted						

Table 14: Hypothesis Testing for the Impact of Higher Coupon Rates on Investor Attraction to Green Bonds

Sum of Scale➡	1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly agree					
Age Group	1	2	3	4	5	Grand Total
21-30 years		8	12	16	10	46
31-40 years	2	2	24	16	15	59
41-50 years		4	18	28	25	75
51 and above	1	10	15	12	20	58
Grand Total	3	24	69	72	70	238
%	1.260504202	10	29	30	29	100
Chi-square statistic is 22.82, P-value is 0.029(< 0.05), Ho : Not Accepted						

Table 15: Hypothesis Testing for the Role of Sovereign Green Bonds in India's Transition to a Sustainable and Green Economy

Sum of Scale➡	1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly agree					
Age Group	1	2	3	4	5	Grand Total
21-30 years	1	4	15	12	15	47
31-40 years	2	2	21	8	30	63
41-50 years	1	2	15	44	10	72
51 and above	2	8	12	20	15	57
Grand Total	6	16	63	84	70	239
%	2.510460251	7	26	35	29	100
Chi-square statistic is 32.82, P-value is 0.023(< 0.05), HO : Not Accepted						

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Table 16: Hypothesis Testing for Government Transparency in Reporting the Impact and Use of Funds Raised through Sovereign Green Bonds

Sum of Scale	1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly agree					
Age Group	1	2	3	4	5	Grand Total
21-30 years	1	6	12	20	5	44
31-40 years	1	6	15	28	10	60
41-50 years		2	27	36	5	70
51 and above	2	8	18	16	10	54
Grand Total	4	22	72	100	30	228
%	1.754385965	10	32	44	13	100
Chi-square statistic is 17.57, P-value is 0.129(>0.05) , HO : Accepted						

Findings

Based on the chi-square analysis of various factors related to respondents' awareness and perceptions of Sovereign Green Bonds, the findings revealed that Age group does not significantly influence the majority of the factors examined, including gender, education, annual income, awareness, sources of information, investment considerations, perceived risks, and beliefs about the benefits of Sovereign Green Bonds. In these cases, the null hypothesis was not rejected, indicating no significant difference across age groups.

There is a significant association between age and occupation, as well as between age and perceptions regarding the impact of higher coupon rates on fascinating investors to Sovereign Green Bonds. Moreover, the data shows varied responses across the age groups, with the majority of respondents in all age categories agreeing or strongly agreeing that Sovereign Green Bonds could play a significant role in India's green economy transition. The significant p-value suggest that age impacts how respondents view the role of Sovereign Green Bonds in promoting sustainability in India. Overall, the findings suggest that age does not play a major role in shaping most respondents' views on Sovereign Green Bonds, except in the areas of occupation and perceptions of coupon rates. These insights can help inform tactics for engaging different age groups in discussions about green investment opportunities.

Conclusions

Chi-square analysis of respondents' awareness and perceptions of Sovereign Green Bonds in India reveals that age does not significantly impact most factors, such as gender, education, income, awareness, investment considerations, perceived risks, and beliefs about benefits. However, significant relationships were found between age and occupation, as well as between age and perceptions of higher coupon rates attracting investors. A majority of respondents, regardless of age, agreed that Sovereign Green Bonds could play a significant role in India's transition to a sustainable economy, with age influencing how this role is perceived. Overall, age does not greatly affect most perceptions of Sovereign Green Bonds, except in relation to occupation and the appeal of higher coupon rates, offering guidance for engaging different age groups in discussions about these bonds and their environmental impact.

Recommendations

1. SEBI should reinforce regulations and provide clearer guidelines to boost confidence in the Sovereign Green Bond market.
2. The RBI should collaborate with commercial banks to support Green Finance, including offering incentives for green bond investments.
3. India should create a cohesive national policy on Green Finance, drawing on global best practices and offering incentives for both domestic and foreign investors.
4. Public campaigns and financial literacy programs should be implemented to educate people on the environmental and financial benefits of Sovereign Green Bonds.

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5. The government should offer tax breaks and simplify the issuance process to encourage more investor participation in green bonds.

By implementing these recommendations, India can further reinforce its position as a leader in sustainable finance and accelerate the transition to a green economy.

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CYBER SECURITY IN FINANCIAL REPORTING": SPECIAL REFERENCE TO FINANCIAL INSTITUTES

By
Prof. Dharmendrakumar A. Patel
Associate Professor
Smt A.P.Patel Arts and Late Shri.N.P.Patel Commerce College, Ahmedabad

Abstract

The increasing reliance on technology in financial reporting has introduced significant cyber security risks, threatening the integrity and confidentiality of sensitive financial data. This paper discusses the importance of cyber security in financial reporting, highlighting key risks such as data breaches, phishing, and insider threats. Effective cyber security measures, including robust access controls, encryption, and employee education, are essential to protect financial data and maintain stakeholder trust. Regulatory compliance and continuous monitoring are also critical components of a comprehensive cyber security strategy. By prioritizing cyber security, organizations can safeguard their financial reporting processes and protect their reputation.

In the digital age, financial reporting has become increasingly dependent on technology, making it vulnerable to cyber security threats. Cyber attacks, data breaches, and financial fraud can compromise the accuracy, integrity, and reliability of financial information. This paper examines the cybersecurity challenges in financial reporting, explores regulatory frameworks, and discusses solutions to enhance security.

Keywords: cyber security, financial reporting, data protection, regulatory compliance, risk management, Financial Institutes, Integrity, Safeguard etc.

Introduction

The majority of smart gadgets, whether in large corporations, in small businesses, or at home, are connected together in a network that creates a global community. Financial institutes, professionals and people have become increasingly dependent on the cyberspace for their day to day transactions to conduct business globally. Most people understand that global digital infrastructure is becoming increasingly dependent upon information technology, and no information system is 100% secure. Information security is a topic that everyone knows, but most are not aware of the gravity of the threat. Many users simply think that their firewall and antivirus software provides them with all the protection they need to keep their computers secure.

However, as malicious hackers become more resourceful, and users add more information into a growing number of databases, there exists an increased exposure to hacker attacks, information espionage, and other security breaches. Information systems - operated by governments and commercial organizations – are vulnerable to attack and misuse through their internet connections. Workstations connected to the internet are currently the most common targets of malicious hackers. As a result, information assurance is a very serious concern for individuals, businesses, financial institutes, professionals and governments. Not only do we need to be aware of how attacks are perpetrated, but we also need to learn how the systems can be protected against different attacks.

The financial institutes are a prime target for cybercriminals due to its high volume of valuable financial data and assets. Cyber security is critical to the financial industry's success, protecting sensitive customer data, ensuring the integrity of financial transactions, and confirming compliance with regulatory requirements. Cyber security threats are constantly evolving, and financial institutions must remain vigilant in implementing and updating their cyber security measures. Negligence in doing so can result in substantial financial losses, reputational damage, and legal liabilities. The financial industry must continue to invest in cyber security to ensure the integrity of financial transactions and maintain the trust of its customers. "Cyber security in financial reporting of financial institutes" refers to the practices

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and measures implemented by financial institutions to protect sensitive financial data from cyber attacks, ensuring the accuracy and integrity of their financial statements by safeguarding the systems used to generate and store that data, while also disclosing potential cyber risks in their reporting to stakeholders. In this paper, we will study the significance of cyber security in the financial institutes and provide supporting statistics for each of the key points.

Objective

1. To understand meaning of cyber security in financial reporting.
2. To know special area of cyber security in financial reporting.
3. To know (Threats) of cyber security concerns in financial reporting.
4. To understand important cyber security solutions for financial services.

Key points about cyber security in financial reporting:

Protection of Customer Data: The financial institutes are responsible for storing a vast amount of sensitive customer data, including personal information, financial transactions, and banking details. If this data falls into the wrong hands, it might lead to identity theft, financial fraud, and other criminal activities. Therefore, safeguarding this data is critical to maintaining customer trust.

Prevention of Financial Fraud: Cybercriminals use various tactics, including phishing scams, malware, and ransomware attacks, to exploit vulnerabilities in financial systems. These incursions can lead to considerable financial losses for both customers and financial institutions, affecting the industry's reputation and profitability.

Compliance with Regulatory Requirements: Financial institutions are often required by regulatory bodies to disclose their cyber security practices and any significant cyber incidents in their financial reports. The financial institutes are subject to strict regulations regarding data protection, privacy, and security. Compliance with these regulations is essential to avoid fines, legal liabilities, and reputational damage.

Protection of Intellectual Property: Financial institutions rely on proprietary technology and intellectual property to maintain their competitive advantage. Cyber-attacks can compromise this information, resulting in significant financial losses and loss of market share.

High-risk environment: The financial sector is particularly vulnerable to cyber threats due to the large volume of sensitive customer data like account details, credit card information, and transaction records it handles.

Cyber security controls: To protect financial data, companies implement various security measures such as strong authentication methods, encryption, network monitoring, intrusion detection systems, and regular security updates.

Potential impacts of cyber breaches: Cyber attacks on financial institutions can result in significant financial losses, damage to reputation, regulatory penalties, and disruption to operations.

Specific areas where cyber security is critical in financial reporting:

Data protection: Safeguarding customer information including personal details, account balances, and transaction history.

System integrity: Protecting financial reporting systems from unauthorized access, Manipulation, or disruption.

Access controls: Implementing strict user access controls to limit who can access sensitive financial data.

Incident response plan: Having a well-defined plan to detect, contain, and respond to cyber incidents effectively.

Risk assessment: Regularly evaluating potential cyber security threats and vulnerabilities within the financial reporting process.

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Examples (Threats) of cyber security concerns in financial reporting:

- Data Breaches: Unauthorized access to financial data, leading to theft or manipulation.
- Phishing attacks: Attacks targeting financial professionals to gain access to sensitive information. Cybercriminals sending fraudulent emails to trick employees in torevealing sensitive login credentials.
- Malware attacks: Malicious software compromising financial systems and data. Malicious software that can steal financial data or disrupt systems.
- Ransomware attacks: Encrypting critical data and demanding a ransom for its release.
- DDoS attacks: Overwhelming a system with traffic to make it unavailable to users.
- Insider Threats: Authorized personnel intentionally or unintentionally compromising financial data.
- Cloud Computing Risks: Vulnerabilities in cloud-based financial systems and data storage.

Important cyber security solutions for financial services

Given the multitude of cyber threats facing financial institutions, it is imperative to implement robust cyber security measures to protect sensitive data and ensure operational continuity. Various cyber security solutions are available, each tailored to address specific vulnerabilities and enhance overall security posture. In this section, we will discuss nine essential cyber security solutions that financial institutions can adopt to safeguard against cyber attacks and maintain the trust of their customers.

Web Application Firewalls (WAF): A WAF acts as a protective barrier between a web application and the internet, monitoring and filtering traffic to prevent common web-based attacks such as cross-site scripting (XSS) and SQL injection. Regular security audits and policy updates are essential to maintain the effectiveness of WAFs.

DDoS Protection: DDoS protection solutions monitor network traffic for unusual spikes and reroute suspicious traffic to minimize disruption. This ensures the continued availability of services during an attack.

Anti-Fraud and Online Fraud Prevention: Anti-fraud solutions use advanced analytics and machine learning to detect and prevent fraudulent activities in real-time. By identifying suspicious patterns, these solutions help financial institutions take immediate action to prevent financial losses.

Identity and Access Management (IAM): IAM frameworks manage electronic identities and access to resources, ensuring that only authorized individuals have access to sensitive data and systems. Multi-factor authentication (MFA) and single sign-on (SSO) are key components of IAM.

Advanced Threat Protection (ATP) Solutions: ATP solutions combine technologies such as endpoint protection, network security, and email security to detect and prevent sophisticated cyber threats. Real-time threat intelligence and automated response capabilities enhance the institution's ability to safeguard against advanced threats.

Vulnerability Assessment and Penetration Testing (VAPT): VAPT involves identifying and addressing vulnerabilities in a system to secure critical data and meet regulatory compliance. This proactive approach helps prevent data breaches by neutralizing potential threats before they cause damage.

Security Awareness and Training Programs: Educating employees about cyber threats and best practices is essential to maintaining a secure environment. Regular training programs help staff recognize and respond to cyber risks, protecting sensitive financial data.

Data Activity Monitoring: Monitoring and recording all database activities in real-time helps detect and prevent unauthorized access or manipulation of data. This ensures the integrity and confidentiality of financial data.

Data Risk Analytics: Analyzing data to identify potential risks and threats allows for proactive risk management. Advanced algorithms and machine learning techniques help detect patterns and anomalies that may indicate a cyber threat. Financial institutions are

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particularly vulnerable to intellectual property theft due to their reliance on advanced technology and proprietary algorithms.

Implement Robust Access Controls: Multi-factor authentication, role-based access, and regular access reviews.

Encrypt Sensitive Data: Protect financial data both in transit and at rest.

Conduct Regular Security Audits: Identify vulnerabilities and address them before they can be exploited.

Incident Response Plan: Establish a plan to respond quickly and effectively in case of a cyber security incident.

Cloud Security Measures: Implement cloud-specific security controls, such as cloud access security brokers (CASBs).

Continuous Monitoring: Regularly monitor financial systems and data for suspicious activity.

Collaboration with IT: Work closely with IT departments to ensure alignment on cyber security strategies and best practices.

Best Practices:

- Adopt a Defense-in-Depth Approach: Implement multiple layers of security controls to protect financial data.
- Stay Up-to-Date with Emerging Threats: Continuously monitor cyber security news and updates to stay informed.
- Develop a Culture of Cyber security: Encourage a culture of cyber security awareness and responsibility within the organization.
- Regularly Review and Update Security Policies: Ensure security policies are aligned with changing threats and regulations.

By understanding these threats and implementing these solutions and best practices, organizations can better protect their financial reporting systems and data from cyber security threats.

Concussion

The financial institutes are a prime target for cybercriminals, and cyber security is essential to protecting customer data, preventing financial fraud, ensuring regulatory compliance, and safeguarding intellectual property. The statistics presented in this paper demonstrate the magnitude of cyber threats facing the financial industry and the need for continued investment in cyber security measures. Financial institutions must prioritize cyber security to maintain the trust of their customers, protect their reputations, and safeguard their assets.

The challenges in cyber security are both difficult and interesting. Financial institutes, professionals and people are working on them with enthusiasm, tenacity, and dedication to develop new methods and provide solutions to keep up with the ever-changing threats. In this new age of global interconnectivity and interdependence, it is necessary to provide security practitioners, both professional institutions and people, with guidelines, a focused approach towards a cyber-security policy and knowledge on the frontiers in cyber security challenges in future.

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PREDICTING FINANCIAL DISTRESS IN SELECTED INDIAN IT AND SOFTWARE COMPANIES USING THE OHLSON'S O-SCORE MODEL

By
Dr. Harsha L. Ramani
Adhyapak Sahayak
H.A. College of Commerce, Ahmedabad

Abstract

The purpose of this study is to analyze the possibility of financial difficulty in selected Indian IT and software enterprises using the O-Score model, a well-known bankruptcy prediction tool. Given the Indian IT sector's dynamic character and expanding worldwide significance, early detection of financial trouble is critical for stakeholders such as investors, management, and policymakers. The study applies the O-Score model to a sample of publicly traded enterprises in the Indian IT and software industries, examining important financial factors that determine the probability of financial failure. The study period is 10 years that is from 2015 to 2024. Secondary Data is used for the study. Data analysis is done with the help of O-Score model. The average O-Score of TCS during study period is 1.282977912 and Infosys is 0.581968804.The study concludes that the O-Score model is a credible technique for detecting financial hardship in Indian enterprises, highlighting crucial aspects such as profitability, leverage, and liquidity. The calculated value of F is 5.356298 and tabulated value of F is 4.413873. So, calculated value is higher compare to tabulated value. Thus, null hypothesis is rejected and alternate hypothesis is accepted. It means There is significant difference between O-Score of selected IT and Software Companies during study period. The research advances our understanding of financial stability in the IT sector and provides practical insights for risk management and early intervention measures to alleviate financial distress.

Key-Words:O-Score, Financial Distress, IT, Software

Review of Literature

Ohlson (1980), titled "Financial Ratios and the Probabilistic Prediction of Bankruptcy", is one of the most influential works in the area of financial distress prediction. The primary aim of the paper is to develop a model for predicting bankruptcy using financial ratios in a probabilistic framework. Ohlson sought to improve upon existing bankruptcy prediction models by creating a model that would have greater flexibility and adaptability to different types of companies, irrespective of industry or firm size. Ohlson used nine financial variables (financial ratios) in his model. These variables were chosen based on their relevance to the firm's financial health. The variables included:

- Size of the firm
- Leverage (debt to equity ratio)
- Current ratio
- Profitability ratios (e.g., return on assets)
- Liquidity ratios (e.g., working capital)
- Market value of equity
- Retained earnings

Ohlson's model had an overall accuracy rate of around 82% for predicting bankruptcy in the sample of bankrupt firms, and it achieved an accuracy rate of 79% in predicting non-bankrupt firms.

Altman and Sabato (2007) the paper "Modeling Credit Risk for Corporate Bonds: A Survey and Application" provides an in-depth survey and analysis of various credit risk models for corporate bonds, particularly focusing on the prediction of default and creditworthiness. The main goal of the paper is to provide a comprehensive overview of different approaches used in credit risk modeling for corporate bonds. The authors applied these models using a sample of corporate bond data from different firms.

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They also analyzed macroeconomic factors and their impact on credit risk models. The analysis included using financial ratios and market prices of bonds. The paper emphasizes that while traditional models such as the Z-Score remain useful, modern credit risk models that incorporate market data and macroeconomic factors provide more accurate and adaptable predictions of corporate bond creditworthiness. This study has significantly shaped the development of more robust credit risk models, influencing both academic research and practical applications in the financial industry.

Introduction

The Indian software and information technology (IT) industries have become a major force behind the country's economic expansion, making substantial contributions to both GDP and employment. Notwithstanding its strong success, the industry is not impervious to financial difficulties, which can have detrimental effects on businesses, workers, and the whole economy. For stakeholders, such as investors, managers, and legislators, anticipating financial crisis early on is essential in this situation since it allows for prompt risk mitigation measures.A company has financial distress when it is unable to pay its debts, which, if left unchecked, might result in bankruptcy. Finding symptoms that foretell financial stress before it becomes irreversible is crucial to preventing such negative results. The purpose of this study is to anticipate financial distress by applying the O-Score model to a sample of Indian software and IT companies. The O-Score model's suitability in this setting will be investigated in light of the distinctive features of the Indian IT industry, including quick technical breakthroughs, intense international competition, and demand swings. This study will offer important insights that could help prevent financial issues and enhance decision-making for investors and corporate executives by identifying the major financial indicators that contribute to distress in these organizations.

"Predicting Financial Distress in Selected Indian IT and Software Companies Using the Ohlson's O-Score Model"

O-Score Model:

Here's a brief breakdown of the **O-score model**:

O-Score Model:

- **Purpose:** The O-score was specifically designed for predicting the probability of bankruptcy for non-manufacturing firms.

The O-Score Formula:

The **Ohlson O-Score model** formula is used to predict the likelihood of bankruptcy or financial distress, and it applies a logistic regression approach that incorporates a variety of financial ratios. The formula is:

$$\text{O-Score} = -1.32 - 0.407 \times \left(\frac{TL}{TA}\right) + 6.03 \times \left(\frac{WC}{TA}\right) - 1.43 \times \left(\frac{CL}{TA}\right) + 0.0757 \times \left(\frac{NITA}{TA}\right) - 2.37 \times \left(\frac{TTA}{TA}\right) + 1.83 \times \left(\frac{WC}{TA}\right)$$

Where:

- TL/TA = Total Liabilities / Total Assets (leverage ratio)
- WC/TA = Working Capital / Total Assets (liquidity ratio)
- CL/TA = Current Liabilities / Total Assets (short-term financial health)
- NITA = Net Income / Total Assets (profitability ratio)
- TTA = Total Accruals (Net Income - Operating Cash Flow)
- TTA/TA = Total Accruals / Total Assets

Interpreting the O-Score:

- A **higher O-score** suggests a lower probability of bankruptcy, implying better financial health.
- A **lower O-score** indicates a higher risk of bankruptcy.

Research Objectives:

- To explore the application of the O score model in assessing the financial health and risk of companies, with a focus on the selected firms.
- To assess the ability of the O score model to predict key financial outcomes (such as bankruptcy, default, or profitability) for the selected companies.
- To compare o-score of selected companies during study period.

Research Methodology:

Research Hypothesis:

H_0 : There is no significant difference between O-Score of selected IT and Software Companies during study period.

H_1: There is significant difference between O-Score of selected IT and Software Companies during study period.

Universe of the Study:

The universe of this study comprises all publicly listed companies in the Indian Information Technology (IT) sector, specifically those traded on the National Stock Exchange (NSE) and the Bombay Stock Exchange (BSE).

Sample of the Study:

The sample for this study is drawn from the universe of publicly listed companies in the Indian Information Technology (IT) sector. The selection process involves companies that are traded on major Indian stock exchanges such as the National Stock Exchange (NSE) and Bombay Stock Exchange (BSE).

Selected Companies:

Following two companies are selected for the research.

- **Tata Consultancy Services**
- **Infosys**

Period of the Study:

The period of this study spans 10 years, from 2015 to 2024. This time frame is selected to capture a comprehensive dataset that reflects both the financial stability and distress of Indian IT companies over a significant period. The data for this period will be used to calculate the Ohlson O-Score and analyze its effectiveness in predicting bankruptcy risk. The study includes historical financial data for the selected companies from 2015 to 2024, allowing for an in-depth analysis of the trends and patterns in bankruptcy risk within the Indian IT sector.

Tools & Techniques: Ratios, ANOVA, O-Score Model

Data-analysis & Interpretation:

Table 1.1: Table Showing data of TCS during 2015-2024

YEAR	TOTAL LIABILITIES	TOTAL ASSETS	CURRENT ASSETS	CURRENT LIABILITIES	WORKING CAPITAL	NET INCOME	OPERATING CASH FLOW	TOTAL ACCRUALS
2015	17648.86	63065.3	40430.14	16463.63	23966.51	24021.59	19369	4652.59

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2016	18801.68	77668.54	53295.87	17706.29	35589.58	29116.64	19109	10007.64
2017	11736	89758	68422	10701	57721	30082	25223	4859
2018	15190	91056	68222	14058	54164	31961	25067	6894
2019	20602	99500	79032	18896	60136	41563	28593	12970
2020	30607	104975	79194	24026	55168	42248	32369	9879
2021	34587	109381	83160	28525	54635	42657	38802	3855
2022	44090	121263	94192	37901	56291	50209	39949	10260
2023	45289	119827	92784	39324	53460	52385	41965	10420
2024	49028	121148	94918	43061	51857	59233	45097	14136

[Source: Annual Report of TCS from 2015 to 2024]

Table 1.2: Table Showing O-Score of TCS during 2015-2024

YEAR	TL/TA	WC/TA	CL/TA	NI/TA	TTA/TA	O-Score
2015	0.279851	0.380027	0.261057	0.3809	0.073774	0.490351785
2016	0.242076	0.458224	0.227972	0.374883	0.128851	0.924856718
2017	0.130752	0.643074	0.119221	0.335146	0.054134	2.488333802
2018	0.16682	0.594843	0.154389	0.351004	0.075712	2.063301679
2019	0.207055	0.604382	0.18991	0.417719	0.130352	1.933021157
2020	0.291565	0.525535	0.228874	0.402458	0.094108	1.42066163
2021	0.316207	0.499493	0.260786	0.389985	0.035244	1.336111902
2022	0.36359	0.464206	0.312552	0.41405	0.084609	0.900732551
2023	0.377953	0.446143	0.328173	0.437172	0.086959	0.752587994
2024	0.404695	0.428047	0.355441	0.488931	0.116684	0.519819907
					TOTAL O-Score	12.82977912
					Average O-Score	1.282977912

Interpretation:

The above table shows O-Score of TCS company during 2015 to 2024. The O-score is 0.490351785, 0.924856718, 2.488333802, 2.063301679, 1.933021157, 1.42066163, 1.336111902, 0.900732551, 0.752587994 and 0.519819907 respectively during 2015 to 2024. The total O-score during study period is 12.82977912 and the average of O-Score is 1.282977912 during the study period.

Figure 1.1: Table Showing O-Score of TCS during 2015-2024

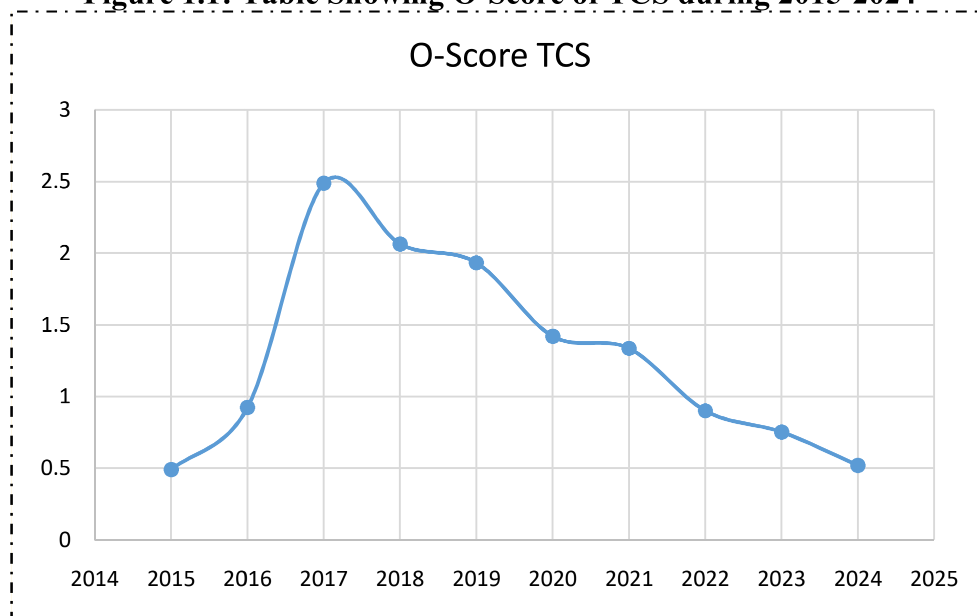

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Table 1.3: Table showing data of Infosys during 2015-2024

YEAR	TOTAL LIABILITIES	TOTAL ASSETS	CURRENT ASSETS	CURRENT LIABILITIES	WORKING CAPITAL	NET INCOME	OPERATING CASH FLOW	TOTAL ACCRUALS
2015	9622	61813	42752	9595	33157	16798	7955	8843
2016	11650	72732	46097	11588	34509	17600	9578	8022
2017	11868	79885	47682	11786	35896	18938	10478	8460
2018	12375	75877	44090	11662	32428	19908	12475	7433
2019	16219	78930	46223	15430	30793	19927	14841	5086
2020	18807	81041	43820	15220	28600	20477	17003	3474
2021	22408	93939	48282	17622	30660	24603	23224	1379
2022	30081	99387	52437	24976	27461	28623	23885	4738
2023	33592	137814	52082	27442	24640	31800	19169	12631
2024	33774	114950	70952	27086	43866	36230	20787	15443

[Source: Annual Report of INFOSYSfrom 2015 to 2024]

Table 1.4: Table Showing O-Score of Infosys during 2015-2024

YEAR	TL/TA	WC/TA	CL/TA	NI/TA	TTA/TA	O-Score
2015	0.155663	0.536408	0.155226	0.271755	0.143061	1.525294754
2016	0.160177	0.474468	0.159325	0.241984	0.110295	1.194720618
2017	0.148564	0.449346	0.147537	0.237066	0.105902	1.064808545
2018	0.163093	0.427376	0.153696	0.262372	0.097961	0.929556263
2019	0.205486	0.39013	0.19549	0.252464	0.064437	0.691752324
2020	0.232068	0.352908	0.187806	0.252675	0.042867	0.503714909
2021	0.238538	0.326382	0.18759	0.261904	0.01468	0.398333185
2022	0.302665	0.276304	0.2513	0.287995	0.047672	-0.11709334
2023	0.243749	0.178792	0.199123	0.230746	0.091653	-0.75407066
2024	0.293815	0.381609	0.235633	0.315181	0.134345	0.382671448
					TOTAL O-Score	**5.819688044**
					Average O-Score	**0.581968804**

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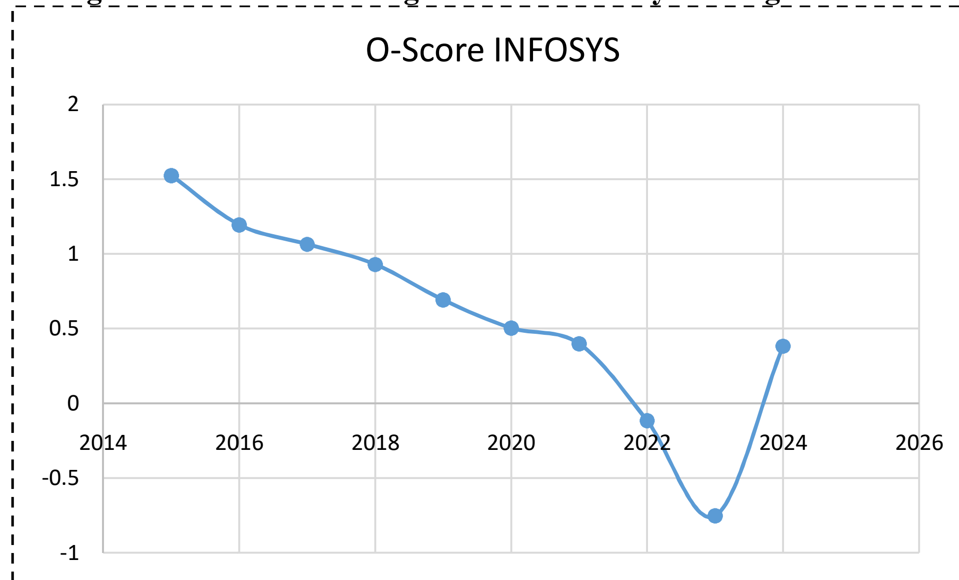
Interpretation

The above table shows O-Score of Infosys Company during 2015 to 2024. The O-score is 1.525294754, 1.194720618, 1.064808545, 0.929556263, 0.691752324, 0.503714909, 0.398333185, 0.11709334, -0.75407066 and 0.382671448 respectively during 2015 to 2024. The total O-score during study period is 5.819688044and the average of O-Score is 0.581968804 during the study period.

Figure 1.2: Table Showing O-Score of Infosys during 2015-2024



Application of ANOVA

Table 1.5: Table Showing Application of ANOVA during 2015-2024

Source of Variation	SS	DOF	MS	F	P-value	F crit
Between Groups	2.457068847	1	2.457069	5.356298	0.032663	4.413873
Within Groups	8.257053132	18	0.458725			
Total	10.71412198	19				

Interpretation

The above table shows application of ANOVA. The calculated value of F is 5.356298 and tabulated value of F is 4.413873. So, calculated value is higher compare to tabulated value. Thus, null hypothesis is rejected and alternate hypothesis is accepted. It means There is significant difference between O-Score of selected IT and Software Companies during study period.

Delimitations of the Study

- Only two companies are selected for the research work.
- Study period is only 10 years that is from 2015 to 2024.
- Limitations of model also apply to this research work.

Conclusion

The average O-Score of TCS during study period is 1.282977912 and Infosys is 0.581968804. so, compare to Infosys, average O-Score is higher in TCS during the study period that is from 2015 to 2024. Calculated value is higher compare to tabulated value. Thus, null hypothesis is rejected and alternate hypothesis is accepted. It means there is significant difference between O-Score of selected IT and Software Companies during study period.

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FROM STABILITY TO CHAOS: A BIBLIOMETRIC ANALYSIS OFCRUDE OIL PRICE VOLATILITY

By
Anjali B. Makwana
Research Scholar
&
Dr. Chetana R. Marvadi
Professor (Commerce)
Gujarat University, Gujarat

Abstract

This bibliometric analysis investigates the research landscape on crude oil price volatility, utilizing a filtered dataset of 378 scholarly articles from the Dimension database. The study employs Biblioshiny to conduct a comprehensive analysis encompassing publication trends, citation metrics, journal impact factors, keyword frequency, authors and countries'contributions. Key findings reveal significant trends in publication over time. The analysis identifies leading journals and authors in the field, highlighting their contributions to advancing knowledge on oil price volatility. Furthermore, keyword analysis uncovers prevalent themes and emerging research areas, indicating a shift towards understanding the implications of oil price fluctuations on global economic stability. This study serves as a foundational reference for future research and policy-making in energy economics.

Keywords: Crude oil price, volatility, bibliometric analysis, literature review

Introduction

Overview of Crude Oil Price Volatility: In the contemporary global economy, crude oil remains one of the most crucial commodities, influencing everything from transportation costs to national security policies. As one of the most important commodities, fluctuations in oil prices can lead to substantial economic repercussions, affecting both oil-producing and oil-consuming nations. Understanding these dynamics is essential for policymakers, investors, and market participants to make informed decisions that can mitigate risks associated with price volatility.

Importance of the Study

This paper aims to provide a comprehensive bibliometric analysis of the existing literature on crude oil price volatility. By systematically analysing 378 publications from the Dimension database, this study seeks to map the evolution of research trends, identify key contributors and influential journals, and explore thematic developments within the field. The bibliometric approach allows for an objective assessment of publication patterns and citation impacts, thereby illuminating the academic discourse surrounding crude oil price volatility.

Ultimately, this study aims to contribute valuable insights into the academic landscape of crude oil price volatility and inform future research directions.

Research Questions

This approach enables us to address several critical research questions:

1. What are the trends in publication and citation related to crude oil price volatility research over time?
2. Which journals are the leading sources for publications on crude oil price volatility based on publication counts and citation metrics?
3. Who are the key authors contributing to the literature on crude oil price volatility, and what is their impact in terms of publication volume and citations?

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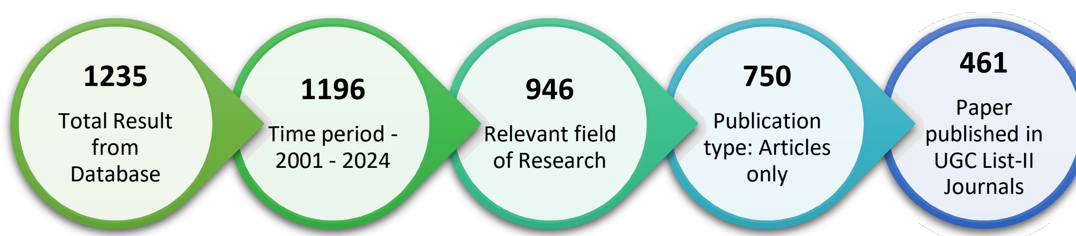
4. What are the dominant themes and emerging trends identified through keyword analysis in the research on crude oil price volatility?
5. How do international collaboration patterns manifest in the research on crude oil price volatility among different countries?

Methodology

Data Sources: To create the bibliometric data for the current study, we rely on two parts. We chose the research articles from the Dimensions database as it is the world's largest collection of linked research data. For the first section due to its extensive scope, gives users access to a huge, interconnected network of research data and more. This enables users to conduct in-depth analyses on a variety of research topics on a single platform.

Criteria for Selecting Publications: After that, we create the search query to choose relevant literature and apply different filters to ensure that the best results align with our research goals. The final search query consists of Keywords found in the Title or abstract: crude oil price volatility, Oil price fluctuations, Crude oil price instability, Oil price uncertainty, Crude oil variability, and Oil price turbulence, and following Fig. 1 represents the filters applied on the results.

Fig. 1: Filters applied



There are 461 research papers in the final search result. Lastly, we manually reviewed the research articles and eliminated 83 articles to fulfil the current study's goal; our sample size consists of 378 articles.

Tools and Techniques for Bibliometric Analysis

To conduct the bibliometric analysis, we have used "biblioshily," which is part of the Bibliometrics R package. We used publication, citation, source, author, document, keyword and country categories for the purpose of the analysis.

Results and Analysis

Data Overview

Table 1 presents the descriptive statistics, which provide essential insights necessary for understanding the data prior to conducting the analysis. These statistics highlight key characteristics of the dataset and lay the groundwork for further exploration.

Table 1 Descriptive statistics

Description	Results
Main information about the data	
Time span	2003:2024
Sources (Journals, Books, etc)	135
Documents (articles)	378
Average citations per doc	38.48

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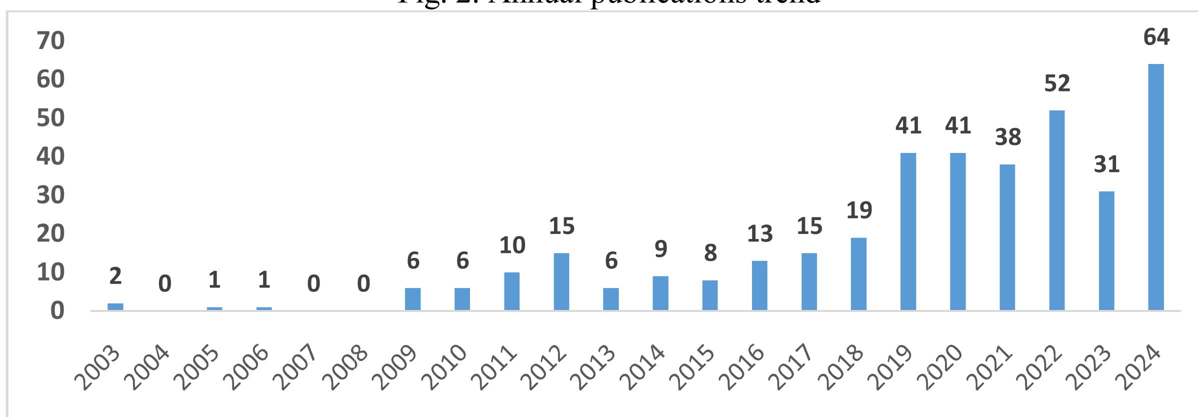
References	8337
Authors	
Authors	863
Authors of single-authored docs	47
Co-Authors per Doc	2.82
International co-authorships %	21.43

We have finalized 378 articles wrote by 863 researchers, with 59 publications being single-authored, suggesting a greater level of cooperation in research.

Trend Analysis: Trend analysis is a fundamental aspect of bibliometric studies, providing insights into the evolution of research output over time. This section examines both publication and citation trends related to crude oil price volatility.

Publication Trends: Publication trends provide a quantitative overview of the number of scholarly articles published over specific time intervals, reflecting the intensity of research efforts within a field.

Fig. 2. Annual publications trend

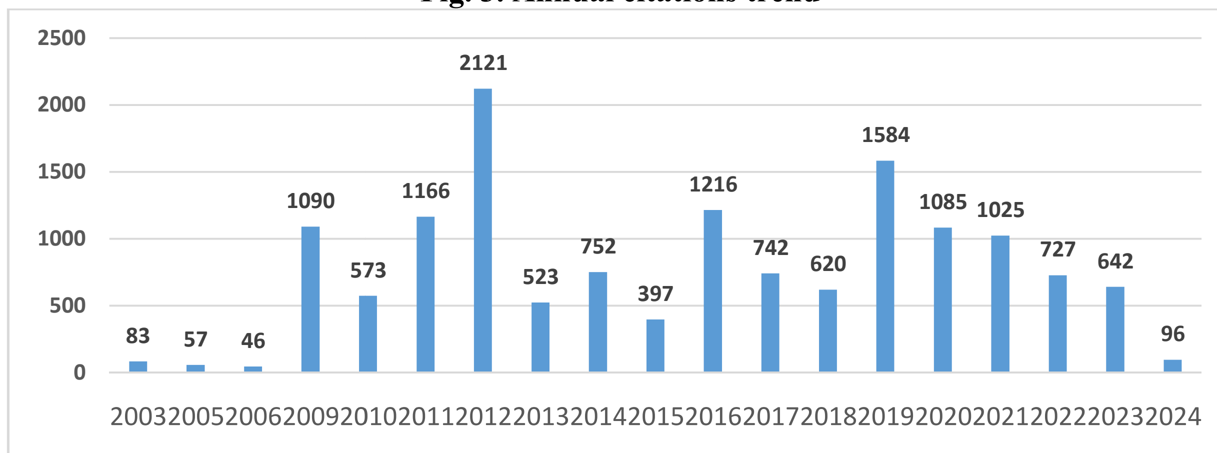


The analysis of publication trends in Fig. 2 shows a steady increase in the number of papers published, particularly after key economic events,in early 2012, concerns over international supply disruptions, particularly related to Iran's nuclear program, drove crude oil prices above $125 per barrel and in 2023 production cuts announced by OPEC+ aimed at stabilising prices may have led to less research activity.

Citation Trends:

Citation trends analyse how frequently published works are referenced by other scholars, serving as an indicator of their impact and relevance within the academic community.

Fig. 3. Annual citations trend



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The citation data presented in Fig. 3 for papers on crude oil price volatility shows significant fluctuations over the years, with notable peaks in2012 (2121 citations) and 2019 (1584 citations), likely reflecting heightened interest in the topic during periods of market instability.

Source Analysis: Source analysis evaluates the contributions of various journals to the body of literature on crude oil price volatility.

Leading Journals:

Table 2 Journal rankings using Bradford law

SOURCES	Rank	Freq	CF	Zone
Energy Economics	1	58	58	Zone 1
Resources Policy	2	37	95	Zone 1
International Journal of Energy Economics and Policy	3	34	129	Zone 1
Economic Modelling	4	9	138	Zone 2
Applied Economics	5	8	146	Zone 2
International Review of Financial Analysis	6	7	153	Zone 2
Environmental Science and Pollution Research	7	6	159	Zone 2
The North American Journal of Economics and Finance	8	6	165	Zone 2
Economies	9	5	170	Zone 2
Energy Reports	10	5	175	Zone 2

The Bradford Law analysis in Table 2 reveals that Zone 1 journals, like Energy Economics (58 publications), are the most influential in oil price volatility research, representing the core of research output. Zone 2 journals, such as Economic Modelling, show fewer articles and moderate impact. Notably, 46% (175) of 378 articles are published in the top 10 journals, underscoring the significant role of a few key journals.

Journal Impact Metrics

Table 3 Top 10 journals according to source impact through H-index, G-index and M-index

Source	h_index	g_index	m_index	TC	NP	PY_start
Energy Economics	37	58	1.609	5320	58	2003
Resources Policy	18	37	0.9	1852	37	2006
Economic Modeling	7	9	0.467	640	9	2011
Applied Economics	6	8	0.545	226	8	2015
International Journal of Energy Economics and Policy	6	10	0.857	140	34	2019
Energy Reports	5	5	0.625	175	5	2018
International Review of Financial Analysis	5	7	0.625	87	7	2018
Applied Energy	4	4	0.4	313	4	2016
Finance Research Letters	4	5	0.571	267	5	2019
Journal of Forecasting	4	4	0.444	226	4	2017

TC – Total Citation, NP – Number of Publications, PY- Publication Year

Table 3 shows that Energy Economics leads in oil price volatility research with the highest h-index (37) and total citations (5320) since 2003. Journals like Applied Economics and Economic Modelling have lower metrics, indicating less impact. These results highlight the key role of established journals and also point to new directions for future research.

Publication trend of top journals

Fig. 4. Publication trend in the top 6 journals

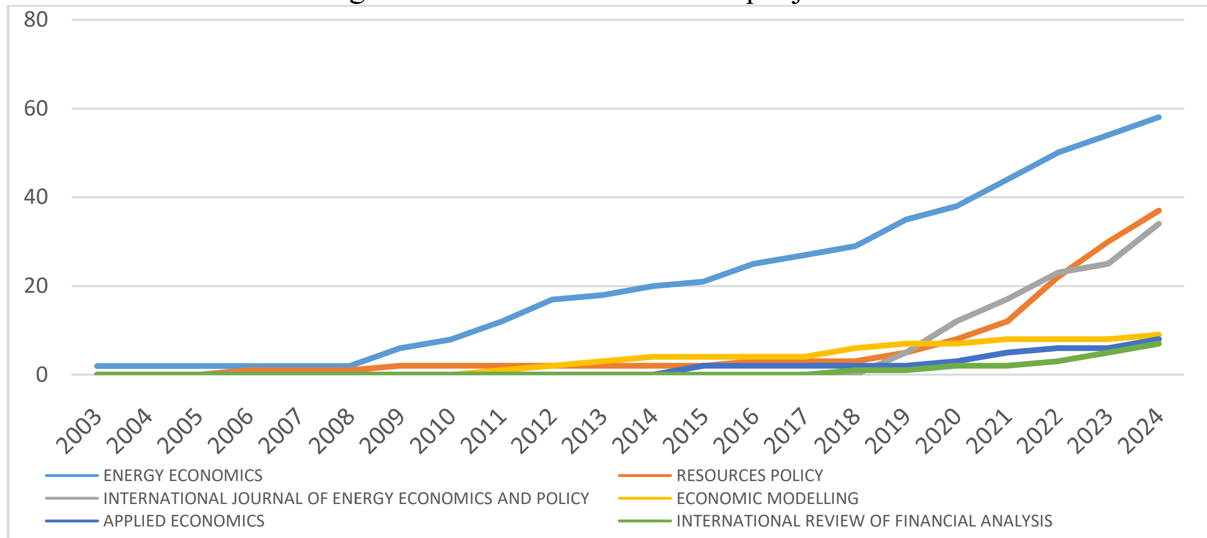

Figure 5 shows a steady increase in oil price volatility research from 2003 to 2024, especially in top journals like Energy Economics and Resources Policy. Publications surged from 2009, peaking recently due to significant global economic events. This trend underscores the growing recognition of oil price volatility's impact on economic stability and the ongoing need for thorough research in this field.

Keyword analysis: Keyword analysis examines the frequency and relevance of specific terms used in titles and abstracts across publications, revealing dominant themes and emerging trends within research on crude oil price volatility.

Most frequent keywords

Table 4Most frequent keywords in titles and abstracts

In Title			**In abstract**		
Sr.	**Words**	**Occ.**	**Sr.**	Words	Occ.
1	oil	402	1	oil	2268
2	price	271	2	price	1279
3	crude	125	3	crude	633
4	volatility	92	4	prices	476
5	evidence	80	5	volatility	465
6	shocks	73	6	shocks	457
7	prices	68	7	market	378
8	stock	65	8	fluctuations	334
9	fluctuations	63	9	stock	333
10	market	58	10	study	331
Occ. = Occurrences of word					

The keyword analysis in Table 4 shows a strong focus on crude oil price volatility, with "oil" (402 titles, 2268 abstracts) and "price" (271 titles, 1279 abstracts) being the most common terms. Words like "volatility" (465) and "shocks" (457) in abstracts highlight the examination of price fluctuations and their economic impacts. This trend indicates that research consistently prioritizes understanding oil price dynamics and their broader market and economic effects.

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Word cloud

Fig. 5.Word cloud of most frequent terms in title

Fig. 5 of the word cloud generated from the keywords in titles illustrates the predominant focus on terms like "oil," "price," and "volatility," visually emphasizing their centrality in the research discourse surrounding crude oil price fluctuations.

3.3.3 Word Growth

Fig. 6.Word Growth of top 10 most frequent terms in Title

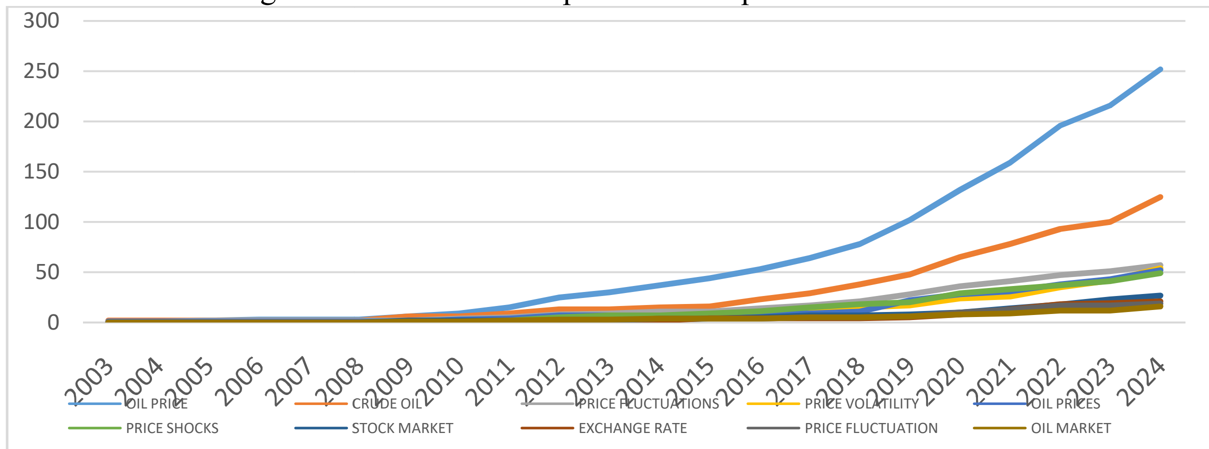

Fig. 6. Showcase the year-wise word growth analysis shows a significant rise in terms like "oil price," "price fluctuations," and "price volatility" from 2003 to 2024, highlighting growing academic interest in oil market dynamics and their economic impacts. Researchers are increasingly focused on understanding these complexities.

Author Analysis

Author analysis investigates individual contributions to the literature, helping identify prominent scholars who are shaping research on crude oil price volatility.

3.4.1 Prominent authors

Table 5 Top 10 authors

Sr.	Author	h-index	i10-index	PY_Start	TC
1	James D. Hamilton	69	104	1993	93625
2	Lutz Kilian	79	115	2002	43230
3	Guiwu Wei	96	292	2010	27913
4	Duc Khuong Nguyen	72	172	2011	19590
5	Mohamed AROURI	52	107	2010	13642
6	Yu Wei	59	151	2008	11670
7	Gert Peersman	37	37	2000	8970
8	Christiane Baumeister	29	36	2011	8064
9	Dr. Chaker Aloui	36	61	2010	6331
10	Luca Guerrieri	24	31	2002	4786

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Table 5: reveal that Guiwu Wei leads in oil price volatility research with a high h-index of 96 since 2010. Notable figures like James D. Hamilton and Lutz Kilian show long-term impact from the 1990s and 2000s, while recent contributors like Duc Khuong Nguyen and Mohamed AROURI emerge since 2011. The data reveals both established experts and new voices in the field.

3.4.2 Most cited paper of authors

Table 6: Top 10 Most cited paper

Sr.	Authors	Year	Title of Research Paper	Citation
1	Baumeister C and Kilian L	2016	Forty Years of Oil Price Fluctuations: Why the Price of Oil May Still Surprise Us	727
2	C Baumeister, G Peersman	2013	Time-Varying Effects of Oil Supply Shocks on The US Economy	692
3	MEH Arouri, J Jouini, DK Nguyen	2012	On The Impacts of Oil Price Fluctuations on European Equity Markets: Volatility Spillover and Hedging Effectiveness	610
4	C Baumeister, G Peersman	2012	The Role of Time-Varying Price Elasticities in Accounting for Volatility Changes in The Crude Oil Market	498
5	C Aloui, R Jammazi	2009	The Effects of Crude Oil Shocks on Stock Market Shifts Behaviour: A Regime Switching Approach	419
6	R Jammazi, C Aloui	2012	Crude Oil Price Forecasting: Experimental Evidence from Wavelet Decomposition and Neural Network Modeling	351
7	W You, Y Guo, H Zhu, Y Tang	2017	Oil Price Shocks, Economic Policy Uncertainty and Industry Stock Returns in China: Asymmetric Effects with Quantile Regression	330
8	C Aloui, D. K. Nguyen, H Njeh	2012	Assessing The Impacts of Oil Price Fluctuations on Stock Returns in Emerging Markets	249
9	M Bodenstein, L Guerrieri, L Kilian	2012	Monetary Policy Responses to Oil Price Fluctuations	228
10	Y Wei, S Qin, X Li, S Zhu, G Wei	2019	Oil Price Fluctuation, Stock Market and Macroeconomic Fundamentals: Evidence from China Before and After the Financial Crisis	205

Table 6 showcases key research on oil price fluctuations, with C. Baumeister frequently co-author, underscoring his active role in advancing oil price dynamics research. His paper "Forty Years of Oil Price Fluctuations: Why the Price of Oil May Still Surprise Us," co-authored with Lutz Kilian and garnered 727 citations. Authors like C. Aloui and D.K. Nguyen also have multiple collaborative publications. Overall, the vibrant research community actively explores oil price volatility through varied perspectives.

3.5 Country Analysis

Country analysis examines research output by nation, assessing which countries contribute most significantly to the literature on crude oil price volatility through publication counts and citation metrics.

3.5.1 Most Published and Cited Countries

Table 7 Top 10 Countries with most publications and citations

Most Publication (P)						Most Citation(C)					
Sr.	Country	P	Sr	Country	P	Sr.	Country	C	Sr	Country	C
1	China	105	6	France	12	1	China	3926	6	UK	511
2	USA	20	7	Canada	9	2	USA	1719	7	Germany	506
3	India	19	8	Denmark	9	3	France	1001	8	ItalySS	502
4	Tunisia	14	9	Nigeria	9	4	Australia	778	9	India	398
5	Australia	13	10	Korea	7	5	Tunisia	620	10	Spain	390

P – Publications, C- Citation

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Table-7: represents that China leads oil price volatility research with 105 publications and 3,926 citations, highlighting its dominance. India ranks third in publications (19 articles) but ninth in citations (398), indicating lower impact and recognition. This disparity may result from research quality, less impactful journals, or biases, suggesting India needs to enhance its research quality and visibility to improve citation rates.

Most Prominent International Collaboration Networks

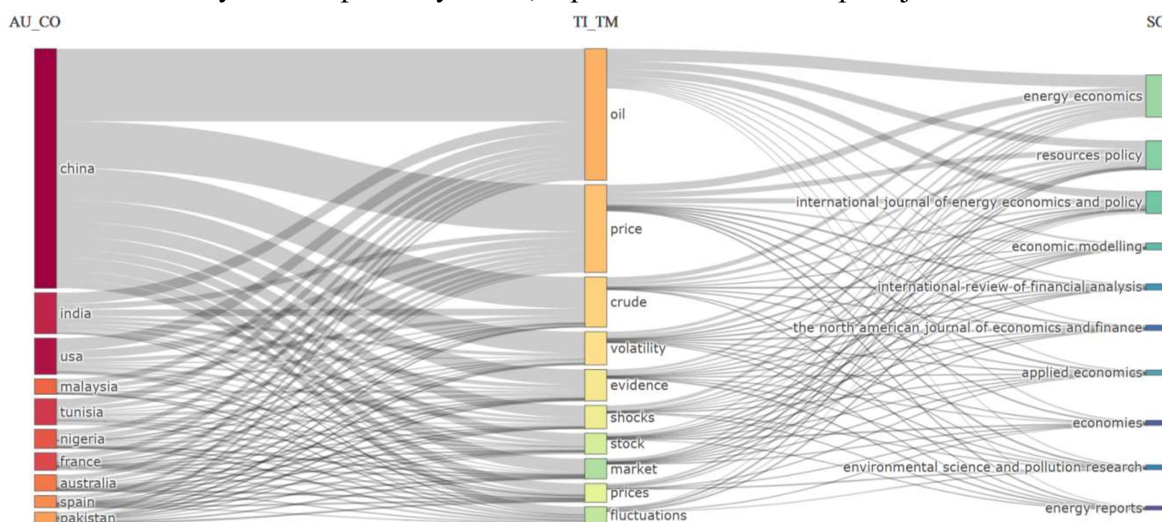
Table 9:Top 10 Collaboration network

Sr.	From	To	Frequency	Sr.	From	To	Frequency
1	China	Pakistan	5	6	Malaysia	Pakistan	3
2	China	USA	4	7	China	Hong Kong	2
3	Tunisia	France	4	8	China	India	2
4	China	Canada	3	9	China	Italy	2
5	China	Saudi Arabia	3	10	China	Malaysia	2

China leads in research collaborations on oil price fluctuations, notably partnering with Pakistan (5 publications) and the USA (4 publications). Other significant alliances include Tunisia with France and China's collaborations with Canada, Saudi Arabia, and Malaysia, all showcasing active international research efforts. This data underscores China's dominant role and the vibrant collaborative spirit in global research.

A Three Field Analysis

Fig. 7. Three field analyses of top 10 keywords, top 10 countries and top 10 journals source



We deepen the analysis by examining primary research topics, nations, and key journals. Figure 7 showcases a three-fold analysis of oil price volatility effects, with countries like China, India, the USA, Malaysia, and Tunisia contributing significantly to themes such as oil, price, crude, volatility, evidence, shock, and market. Most articles are published in leading journals like the International Journal of Energy and Policy, Resources Policy, and Energy Economics.

Future research direction and Limitations of the study

This bibliometric analysis utilized the Dimensions database, but future research could gain a more comprehensive perspective by incorporating additional databases such as Scopus or Web of Science. While Excel and Biblioshiny were used for analysis and visualization, employing other software tools might enhance the analytical process. The study was limited to English-language publications, which may restrict insights. Future studies could expand by examining the implications of crude oil price

volatility on various sectors, economies, or macroeconomic variables, as well as exploring regional variations and long-term forecasting trends.

Conclusion

The bibliometric analysis of crude oil price volatility research reveals a significant rise in publications, driven by key economic events and highlighting the concentrated influence of leading journals like Energy Economics and Resources Policy. Citation data shows notable peaks during periods of market instability, reflecting fluctuating interest. Keyword analysis emphasizes a consistent focus on terms like "oil" and "price" in both titles and abstracts. China and the USA emerge as leading contributors with substantial international collaborations, underscoring the global nature of this research field. Top authors have made impactful contributions, and the study underscores the importance of established journals and international cooperation in understanding oil market dynamics and their economic implications. Overall, the analysis highlights the growing recognition of the critical role of oil price volatility in economic stability.

Reference

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You, W., Guo, Y., Zhu, H., & Tang, Y. (2017). Oil price shocks, economic policy uncertainty and industry stock returns in China: Asymmetric effects with quantile regression. Energy Economics, 68, 1-18.

Jammazi, R., & Aloui, C. (2012). Crude oil price forecasting: Experimental evidence from wavelet decomposition and neural network modeling. Energy Economics, 34(3), 828-841.

Aloui, C., &Jammazi, R. (2009). The effects of crude oil shocks on stock market shifts behaviour: A regime switching approach. Energy economics, 31(5), 789-799.

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AN ANALYTICAL STUDY OF FINANCIAL STATEMENTS OF SELECTED COOPERATIVE DAIRIES: PROFITABILITY RATIOS AND TRENDS APPROACH

By
Prof. Dr. Kalpesh B. Gelda
Assistant Professor
City C.U. Shah Commerce College, Ahmedabad
&
Prof. Maheshkumar S. Vasava
Ph.D Research Scholar, Gujarat University, Ahmedabad

Abstract

This paper examines the financial performance of selected cooperative dairies using profitability ratio analysis and trend evaluation as the primary analytical tools. The study is based on secondary data collected from the audited financial statements, including profit and loss accounts and balance sheets, of the cooperative dairies in Bharuch district. Key profitability ratios such as net profit margin, return on equity, and return on assets are employed to evaluate the operational and financial performance over time. The findings provide insights into the financial health and profitability trends of cooperative dairies, suggesting areas for improvement to enhance their competitiveness and sustainability. The study concludes that improvements in asset management, cost efficiency, and revenue diversification are crucial for enhancing the financial health of underperforming dairies. Based on the analysis, the study provides tailored recommendations for each dairy unit to improve operational and financial performance, thereby ensuring sustainable growth and profitability in the cooperative dairy sector.

Keywords: Co-operative Dairies, Profitability Ratios, Dairy Industry, Financial Health, Cost Efficiency

Introduction

Cooperative dairies play a significant role in the rural economy, especially in India, where agriculture and allied activities are major sources of livelihood. These institutions contribute to rural development by ensuring fair pricing, providing market access to small farmers, and fostering community welfare. Analysing the financial performance of cooperative dairies is essential to understand their operational efficiency and sustainability. This study aims to evaluate the financial performance of selected cooperative dairies in Bharuch district through profitability ratio analysis and trends.

Review of Literature

K. Rajendran and R. Prabaharan (1998) conducted a study on the current state of milk production in India. They highlighted that milk is the second most valuable agricultural commodity in the country, following paddy, and far surpasses wheat in terms of output value. To further boost milk production, they emphasized the importance of focusing on the biotechnological aspects of cattle rearing to achieve an improved balance between low and high-yielding milch animals.

C.R. Kothari authored a book titled Research Methodology, which provides an excellent explanation of statistical techniques used in data analysis. The book is particularly notable for its focus on qualitative research techniques.

Rej and Sur (2001), in their joint publication titled Profitability Analysis of Indian Food Products Industry: A Case Study of Cadbury India Ltd., analysed the profitability of Cadbury India Ltd. The study aimed to evaluate the relationship between selected profitability ratios and key parameters reflecting the company's position and performance. It also sought to test the statistical significance of this relationship using correlation coefficients and multiple regression analysis.

Mrs. Heena Rawal (1999) conducted a study on the profitability of five district milk producers' cooperative unions in Gujarat. Her research focused on the costing and pricing practices of these cooperatives. She found that profitability could be improved either by reducing costs or by increasing total sales. However, the study revealed that the cooperatives had not implemented a proper costing

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system or used the cost-volume-profit method to control costs. Additionally, none of the cooperatives had identified specific cost centers.

Amit Kumar Saha (1999) conducted research on the cost and returns analysis of a milk union in Orissa for the year 1994-95. The study identified the union's main sources of income, including the sale of milk to the dairy, penalties imposed on societies for deviations in Fat/SNF percentages in raw milk, and commissions earned through conservatory activities aimed at promoting socio-economic development. The union's net profit or loss was calculated by subtracting the total cost from the total receipts, with costs analysed component-wise.

Research Methodology

The research methodology for the study titled "An Analytical study of Financial Statements of selected Cooperative Dairies: A Profitability Ratio and Trend Approach" follows a structured approach to analyse the financial health and efficiency of various dairy units using secondary data.

Data Collection

- **Secondary Data**: The study relies on secondary data, collected from the Annual Profit and Loss Accounts and Balance Sheets of the selected cooperative dairies in Bharuch District. The data spans over five years (2017-2018 to 2021-2022).
- **Units Chosen**: The selected dairy units for the study include Gaangadia, Coash, Lasanpor, Bhatgam, and Angaldhara. These units were chosen for their representation of the cooperative dairy sector in the district.

Statistical Techniques

1. **Ratio Analysis**: Various Financial Ratios (Profitability Ratio) were calculated to assess the financial health of the dairies. These three ratios used to assess profitability in this study are Return on Assets (ROA), Net Profit Margin (NPM), and Return on Equity (ROE). These ratios help evaluate how efficiently a cooperative dairy is generating profits based on its assets, sales, and shareholder equity.

   Return on Assets (ROA) measures the effectiveness of a dairy's assets in generating profit. A higher ROA indicates that the dairy is using its resources efficiently to produce returns.

   Net Profit Margin (NPM) reflects the percentage of profit a dairy earns from its total sales after accounting for expenses. A higher NPM signifies better profitability from the revenue generated.

   Return on Equity (ROE) evaluates how well the dairy is utilizing its shareholders' equity to generate profit. A higher ROE indicates that the dairy is efficiently using invested capital to yield returns.
2. **Trend Analysis**: A comparative analysis was conducted across the years to observe patterns, growth, or decline in performance for each dairy unit.

Objectives

1. To analyse the financial health and profitability of selected cooperative dairies using key profitability ratios.
2. To identify trends and patterns in profitability over a specified period.
3. To provide recommendations for improving the financial and operational efficiency of the cooperative dairies.

What is Profitability Ratio?

Profitability ratios are key financial metrics used by investors and analysts to assess a company's ability to generate profit relative to its revenue, assets, operating costs, or shareholders' equity over a specific time frame. These ratios indicate how effectively a company utilizes its resources to generate earnings and create value for its shareholders.

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Generally, a higher profitability ratio is preferred, as it signifies strong business performance, reflected in higher revenues, profits, and cash flow. These ratios are particularly insightful when compared with those of similar companies or with the company's own performance over previous periods. Below are some of the most commonly used profitability ratios.

Return on Assets: Return on Assets (ROA) is a financial ratio that shows a company's profitability in relation to its total assets. It helps corporate management, analysts, and investors evaluate how effectively a company uses its resources to generate profit. ROA is calculated by dividing net income by total assets.

Formula : $\frac{\text{NetIncome}}{\text{Assets}}$ x 100

The calculated Return on Assets (ROA) for each cooperative dairy across the years is as follows (in percentage):

Year	Gaangadia	Coash	Lasanpor	Bhatgam	Angaldhara
2017-2018	0.14%	0.07%	0.09%	0.25%	0.07%
2018-2019	0.21%	0.07%	0.09%	0.29%	0.07%
2019-2020	0.14%	0.07%	0.09%	0.29%	0.06%
2020-2021	0.12%	0.08%	0.07%	0.35%	0.06%
2021-2022	0.10%	0.05%	0.06%	0.34%	0.05%

Source: Annual Report of all the Dairies from the year 2017-18 to 2021-22

The Return on Assets (ROA) for the given cooperative units over five years shows the following trends:

Gaangadia: The ROA fluctuated over the years, starting at 0.14% in 2017-18, peaking at 0.21% in 2018-19, and gradually declining to 0.10% in 2021-22. This indicates a decline in the efficiency of asset utilization to generate returns.

Coash: The ROA remained relatively stable, ranging between 0.05% and 0.08%. While there is a slight increase in 2020-21, the overall performance is consistently low, reflecting limited improvement in asset utilization.

Lasanpor: The ROA showed minimal variation, consistently hovering around 0.06% to 0.09%. This suggests stable but low efficiency in generating returns from assets.

Bhatgam: Among the units, Bhatgam had the highest ROA, starting at 0.25% in 2017-18 and rising to a peak of 0.35% in 2020-21. However, it slightly declined to 0.34% in 2021-22. This reflects a strong and consistent ability to utilize assets effectively compared to other units.

Angaldhara: The ROA remained consistently low, decreasing slightly from 0.07% in 2017-18 to 0.05% in 2021-22. This indicates declining efficiency in asset utilization over the years.

Overall Interpretation:

- Bhatgam demonstrates the best performance in terms of ROA, consistently leading among all units.
- Other units, particularly Coash, Lasanpor, and Angaldhara, show little improvement and have consistently low ROA values, indicating a need for better asset management strategies.

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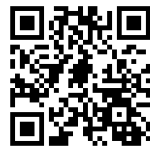
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- Gaangadiaexperienced a decline in ROA after 2018-19, suggesting a gradual reduction in operational efficiency.

Comparative Analysis

A comparative analysis of ROA across the five cooperative units shows that Bhatgam consistently achieved the highest performance, peaking at 0.35% in 2020-21 and maintaining a strong position throughout the period. Gaangadia started with moderate performance, peaking at 0.21% in 2018-19 but gradually declined to 0.10% in 2021-22. Coash and Lasanpor displayed stable but low ROA values, with minor fluctuations, reflecting limited efficiency improvements. Angaldhara, on the other hand, consistently recorded the lowest ROA, declining from 0.07% in 2017-18 to 0.05% in 2021-22, indicating weak asset utilization. Overall, Bhatgam leads in efficiency, while the other units lag behind, requiring better strategies to enhance profitability.

Net Profit Margin

Net Profit Margin, also referred to as "Profit Margin" or "Net Profit Margin Ratio," is a financial metric that calculates the percentage of profit a company generates from its total revenue. It indicates how much net profit a company earns for every dollar of revenue. The net profit margin is calculated by dividing net profit (or net income) by total revenue and expressing the result as a percentage.

Formula : $\frac{\text{NetIncome}}{\text{sales}}$ x 100

The calculated Net Profit Margin (NPM) for each cooperative dairy across the years (in %)

Year	Gaangadia	Coash	Lasanpor	Bhatgam	Angaldhara
2017-2018	0.20%	0.02%	0.02%	0.15%	0.02%
2018-2019	0.04%	0.02%	0.03%	0.17%	0.02%
2019-2020	0.05%	0.02%	0.03%	0.18%	0.02%
2020-2021	0.04%	0.02%	0.02%	0.23%	0.02%
2021-2022	0.03%	0.02%	0.02%	0.45%	0.02%

Source: Annual Report of all the Dairies from the year 2017-18 to 2021-22

The Net Profit Margin (NPM) analysis reveals significant variations in performance across the five cooperative units over the years:

1. Gaangadia: NPM started at 0.20% in 2017-18 but declined sharply to 0.03% by 2021-22, indicating a substantial decrease in profitability.
2. Coash: The NPM remained consistently low at 0.02% throughout the five years, reflecting minimal profitability and no signs of improvement.
3. Lasanpor: Similar to Coash, the NPM stayed relatively stable between 0.02% and 0.03%, indicating limited profitability with no notable growth.
4. Bhatgam: Bhatgam showed a steady and impressive improvement, starting at 0.15% in 2017-18 and climbing to 0.45% in 2021-22, demonstrating strong growth and efficient profit generation.
5. Angaldhara: The NPM remained stagnant at 0.02% across all five years, indicating no improvement in profitability.

Overall Interpretation

Bhatgam significantly outperformed the other units, with steady growth in NPM, showcasing strong profitability. Gaangadiashowed a sharp decline, while Coash, Lasanpor, and Angaldhara exhibited consistently low and stagnant profitability, suggesting a need for strategic improvements to boost their financial performance.

Comparative Analysis

A comparative analysis of Net Profit Margin (NPM) across the units shows that Bhatgam outperformed the others with consistent growth, increasing from 0.15% in 2017-18 to a significant 0.45%

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in 2021-22, indicating strong profitability. Gaangadia, despite starting at 0.20% in 2017-18, experienced a sharp decline to 0.03% by 2021-22, showing a reduction in efficiency. Coash, Lasanpor, and Angaldhara consistently recorded very low and stagnant NPM values (0.02% to 0.03%) throughout the period, reflecting weak profitability and minimal improvement. Overall, Bhatgam stands out as the best performer, while the other units show a lack of significant growth in profitability.

Return on Equity: Return on Equity (ROE) is an important indicator of a company's financial performance. It is calculated by dividing net income by shareholders' equity. As shareholders' equity represents the company's assets minus its liabilities, ROE essentially measures the return generated on the company's net assets.

Formula : $\frac{\text{NetIncome}}{\text{Shareholder'sEquity}}$

The calculated Return on Equity (ROE) for each cooperative dairy across the years (in percentage) is as follows:

Year	Gaangadia	Coash	Lasanpor	Bhatgam	Angaldhara
2017-2018	14.34%	5.72%	22.02%	18.32%	14.98%
2018-2019	14.23%	3.22%	25.82%	18.01%	12.14%
2019-2020	11.01%	3.43%	22.09%	17.71%	10.56%
2020-2021	10.87%	3.71%	21.62%	17.45%	8.39%
2021-2022	8.62%	3.75%	20.26%	14.28%	8.17%

Source:Annual Report of all the Dairies from the year 2017-18 to 2021-22

The data indicates trends in profitability across the five cooperative units over the years:

1. Gaangadia: The profitability steadily declined from 14.34% in 2017-18 to 8.62% in 2021-22, reflecting a significant decrease in performance and efficiency over time.
2. Coash: Profitability remained consistently low throughout the period, starting at 5.72% and slightly increasing to 3.75% in 2021-22, showing minimal improvement and weak performance.
3. Lasanpor: Despite a slight decline, Lasanpor maintained the highest profitability among the units, starting at 22.02% in 2017-18 and ending at 20.26% in 2021-22, indicating relatively strong and stable performance.
4. Bhatgam: Profitability was strong but declined gradually, starting at 18.32% in 2017-18 and dropping to 14.28% in 2021-22, showing a need for efficiency improvements.
5. Angaldhara: Profitability consistently declined from 14.98% in 2017-18 to 8.17% in 2021-22, highlighting a weakening financial performance.

Overall Interpretation:

Lasanpor consistently outperformed the other units with the highest profitability, while Bhatgam maintained a strong position despite a decline. Gaangadia and Angaldhara showed significant reductions in profitability over the years, and Coash recorded the lowest and most stagnant performance, indicating the need for better strategies to enhance efficiency and growth.

Comparative Analysis

A comparative analysis of profitability across the units shows that Lasanpor consistently achieved the highest profitability, peaking at 25.82% in 2018-19 and maintaining strong performance despite a slight decline to 20.26% in 2021-22. Bhatgam also performed well but experienced a steady decline from 18.32% in 2017-18 to 14.28% in 2021-22. Gaangadiasaw a significant drop in profitability, falling from 14.34% to 8.62% over the period, indicating declining efficiency. Angaldhara similarly declined from 14.98% to 8.17%, while Coash consistently recorded the lowest profitability, ranging from 3.22% to 5.72%, showing minimal improvement. Overall, Lasanpor led in profitability, while the other units faced challenges in maintaining consistent growth.

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Suggestion

Based on the analysis of the Return on Assets (ROA), Net Profit Margin (NPM), and Return on Equity (ROE) across the five cooperative dairies, several key insights emerge. Here's a summary of suggestions to improve the performance of the units:

1. For Gaangadia:

- Issue: The ROA, NPM, and ROE have been consistently declining, especially after 2018-19. This indicates decreasing efficiency in asset utilization, profitability, and overall financial performance.
- Suggestions:
  - Cost Efficiency: Focus on improving operational efficiency and reducing unnecessary costs to boost profitability. A thorough cost-cutting strategy, especially in areas with high overhead, could help.
  - Asset Utilization: Improve asset management by optimizing the use of resources and equipment. Consider investing in modern technology or better maintenance to enhance asset utilization.
  - Revenue Diversification: Explore new revenue streams to stabilize income, particularly by expanding product offerings or improving customer reach.

2. For Coash:

- Issue: Coash consistently shows low and stagnant ROA, NPM, and ROE, indicating a severe lack of improvement in asset utilization and profitability.
- Suggestions:
  - Strategic Investment: Consider investing in advanced dairy farming technologies or diversifying the product portfolio to attract more customers and enhance profitability.
  - Operational Improvements: A detailed review of the operational processes to identify inefficiencies and areas of waste could boost performance. Training employees on better resource utilization may help.
  - Marketing and Branding: Strengthening marketing efforts to build a more competitive brand could increase market share and profitability.

3. For Lasanpor:

- Issue: While Lasanpor shows the highest ROE, it has seen a slight decline over the years in profitability. However, it still leads in terms of financial performance.
- Suggestions:
  - Maintain Competitive Edge: Continue to build on the strengths that have contributed to Lasanpor's high profitability. Ensure that operational efficiencies are maintained while expanding the product range.
  - Innovate: Regularly introduce new products or services that could appeal to new customer segments. This will help to ensure that profitability remains strong and competitive in the long term.
  - Financial Management: Focus on sustaining profitability by optimizing working capital management and reinvesting profits into more efficient or profitable ventures.

4. For Bhatgam:

- Issue:Bhatgam shows a decline in ROA, NPM, and ROE, although it remains one of the stronger performers across the units.
- Suggestions:

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- Efficiency Improvements: Though Bhatgam is performing well, it's crucial to address the declining trends in profitability. Conducting a detailed financial audit could uncover areas where further efficiencies could be achieved.
- Enhance Profit Margins: Investigate ways to further reduce costs or increase product prices strategically, focusing on high-margin products.
- Strengthen Customer Relationships: Maintaining strong customer loyalty through quality service and competitive pricing may help stabilize and grow profits.

5. For Angaldhara:

- Issue:Angaldhara shows consistently low and declining performance in all three metrics (ROA, NPM, ROE), indicating a critical need for improvement.
- Suggestions:
  - Comprehensive Overhaul: A complete review of the business model, operations, and market strategies is necessary. This could include evaluating current assets and divesting non-performing units.
  - Revenue Enhancement: Invest in new product lines or expand into new markets to generate additional revenue streams. Product diversification could be essential in boosting sales.
  - Focus on Efficiency: Streamline operations and look for cost-saving measures. Investing in employee training, automation, and technology could improve efficiency.

Conclusion

In conclusion, the analysis of financial performance across the five cooperative dairies reveals significant disparities. Bhatgam stands out with the highest efficiency in asset utilization, profitability, and equity returns, although it has experienced some decline over time. Lasanpor also performs well, maintaining strong profitability but facing slight decline. In contrast, Gaangadia, Coash, and Angaldhara show consistent weaknesses, with declining profitability and efficiency. To improve, these units should focus on cost reduction, asset optimization, and exploring new revenue streams, while strengthening financial and operational strategies to boost overall performance.

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FORENSIC ACCOUNTING AND FRAUD DETECTION IN INDIA

By
Dr. Jaykumar D. Mistry
H. A. College of Commerce
GLS Campus, Off C. G. Road, Ellisbridge, Ahmedabad.

Abstract

The greed to earn much more within shorter period of time in competitive environment enhance chances of misrepresentation of information. In the race of profit maximization, it motivates misappropriation of accounting records, and leads to financial frauds. Since, accountant know that internal and external auditors check accounting records in compliance with generally accepted accounting principles, policies and accounting standards. Therefore a requirement arise to detect suspected fraud in financial transaction and a new category of accounting evolved named as 'Forensic Accounting'.

Keywords: Forensic Accounting, Fraud, scam, agencies, Accountant

Objective of Paper

This research paper is an exploratory and theoretical in nature and attempts to highlight scope and importance of forensic accounting in India. The paper covers different types of fraud and laws prevailing in India and different agencies to control fraud. The paper also covers the role of forensic accounting for prevention of and procedure in identifying fraud and legal action and future of forensic accounting.

Introduction

Forensic accounting used to investigate financial frauds. Misappropriation and misrepresentation of financial information may miss out by auditor because auditor examine accounting records in the light of generally accepted accounting principles and accounting standards. Accountant knows this fact very well and it leads to make fraud in financial data. Hence, requirement arise for skill to investigate and detect such frauds. The specific accounting branch used to investigate frauds, dispute of breach of contract and other financial disagreement required in court action. Since, the word forensic means 'suitable for a court of law', such specific accounting is evolved as 'Forensic Accounting'.

Forensic are also referred as forensic auditors, because they need to investigate accounting records precisely and discover all evidence and present in court in legal manner. In this way there are different segments in specialty like insurance claims, transaction frauds, royalty audit, and financial instruments etc. Forensic accountant observes financial data and check out suspicious transactions and identify inappropriate pattern and draw some conclusion. He doesn't check the financial figures and tries to find out the matter behind the figures.

Maurice Paulobet has invented the term, Forensic Accounting in 1946. Sherlock Holmes is considered to be the first forensic accountant. During the ancient times in India, Kautilya was the first person to mention the famous forty ways of embezzlement in his book Arthashastra. Kautilya was the first economist, who recognised the need of the forensic accounting.

As definition given by According to the American Institute of Certificate Public Accountants (AICPA), "Forensic accounting is the application of accounting principles, theories, and disciplines to facts or hypothesis at issues in a legal dispute and encompasses every branch of accounting knowledge".

According to **Michael Kessler,** "Forensic and investigative accounting is the application of financial skills and an investigative mentality to unresolved issues, conducted within the context of the rules of evidence. As a discipline, it encompasses financial expertise, fraud knowledge, and a strong knowledge and understanding of business reality and the working of the legal system. Its development

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has been primarily achieved through on-the-job training, as well as experience with investigating officers and legal counsel.

Literature Review

As **Alan Zysman** (2004) stated, forensic accounting is integration of accounting, auditing and yields a speciality in investigation skills. Forensic accounting provides evidential basis in form of accounting analysis which will assist in the court. It will be useful for discussion, debate and finally resolution of dispute.

Madan Lal Bhasin (January 2007) clearly mention, in Journal of The Chartered Accountant, forensic accounting has come into limelight due to rapid increase in financial frauds and white-collar crimes. But, it is a largely untrodden area in India. The integration of accounting, auditing and investigative skills creates the speciality known as forensic accounting. The opportunities for the forensic accountants are growing fast; they are being engaged in public practice and are being employed by insurance companies, banks, police forces, government agencies, etc. This article seeks to examine the meaning and nature, activities and services rendered, core knowledge and personal skills required for forensic accounting as a specialised field in the accountancy profession. Indeed, there is a future in forensic accounting as a separate niche consulting.

Shivani Dhami (2015) supports potential future of forensic accounting in India. She accepts the effects of various financial and economic crimes on the Indian economy and country's financial conditions. It is accepted, the demand for forensic accountants has increased recently due to the surge in financial fraud cases in India. According to the report, if forensic auditing is made compulsory for many industries, particularly for large corporations and the public sector, it will aid in the reduction of fraud. Instead of being utilized for investigations, it ought to be used for prevention.

Amutha and Shankari (2021) examined the role of forensic audit in identifying dishonest accounting practices in commercial enterprises. They used secondary sources of data and discovered that, in most cases, original documentation stating hidden transactions are not kept in company records and that false documents are frequently created to prove fictitious transactions, which are investigated by forensic auditors using a systematic procedure and a variety of techniques. The study recommended forensic accounting as a rapid cure to fraudulent activities in order to shed light on the scams.

Financial Frauds in India

There are several examples of frauds in India. Such frauds are called as scam which leads to the requirement of forensic accounting. Such cases are:

- Scam of Harshad Mehta for approximately Rs. 4,000 crores for fraud in Bombay Stock Exchange and Banking System in 1992.
- Scam of Telgi-Fake Stamp Papers, for Rs. 200 crores by Abdul Karim Telgi in 1995;
- Scam of C. R. Bhansali for Rs. 1,200 crores for fraud in mutual fund and capital market frauds in 1995;
- Scam of UTI for Rs. 4,800 crores by P. S. Subramanyam and couple of directors in 2001;
- Scam of UP Food Grains for Rs. 35,000 crores in 2003;
- Scam of Unit Trust of India for Rs. 1,300 crores in 2001; scam of stamp paper for Rs. 600 billion in 2005,
- Scam of Ketan Parekh for 1,500 crores in stock exchange in 2008;
- Scam by Subrata Roy, in Sahara India Pariwar Investor fraud of Rs. 2,000 crores in 2009;
- Scam by B. Ramlinga Raju in Satyam Computers for fraud of Rs. 10,000 crores in 2009;
- Scam of A Raja, Nira Radia and M. K. Kanimozhi as 2G Spectrum for fraud of Rs. 1.76 lakh crores in 2010, it is irregularities in licence issued on firest come first basis and no auction;
- Scam of Common Wealth Games 2010 of Rs. 10,000 crores for misuse of funds;

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- Scam of Adarsh Housing Society for violation of property and environment rules in 2010;
- Scam of B. S. Kushwalha in Uttar Pradesh National Rural Health Mission for fraud of Rs. 10,000 crores in 2010;
- Scam of ex-coal minister, electric boards and private companies in Coal Block Allocation for fraud of Rs. 1.86 lakh crores in 2012;
- Scam of Indian Air Force chief of Rs. 362 crores for taking brides of Rs. 3,600 crores from Agusta Westland VVIP Chopper in 2013;
- Scam of Nalini Chidambaram in Saradha Chit Fund for Rs. 10,000 crores in 2013;
- Scam of Vijay Mallya, politicians and government officials in Kingfisher Airlines for misleading banks, misused money, money laundering for Rs. 9,000 crores in 2016;
- Scam of Nirav Modi, Mehul Choksi, politicians and government officials in Punjab National Banks in 2018 for Rs. 13,500 crores.

Types of Frauds

Following types of frauds are mainly reported:

- Corporate Fraud: unlawful activates operated in a company and violates rules of Companies Act.
- Secures Fraud: fraud in transaction of securities as Shares, Debentures, Mutual Funds, Insurance claims etc.
- Fraud in Insurance: frauds prevalent in corporate insurance, health insurance etc.
- Fraud with Bank and financial institutions: fraud with deposit holders, fraud in bank borrowings and other ways of illegal activities with customers of bank and financial institutions etc.
- Cyber Fraud: Any criminal activity with the help of computers and network communication is considered as cyber fraud.
- Theft of identity: sometimes, fraudster theft someone's identity, their credit card, username, password, bank account information and cause financial losses.

Forensic Accounting Laws

There are certain Indian laws relating to forensic accounting as under:

(1) **Companies Act, 1956:** companies Act, section 235 and section 237 empowers the Government to inspect all the books, if required permit to conduct direct special audit, and investigate the books of account and of course to launch prosecution for violation of the rule of companies act, 1956.

(2) **SEBI ACT, 1992:** Under the Regulation 11C of the SEBI ACT, the board can appoint investigator and look into the unfair practices in securities matter. To protect the right of investor and control unethical transactions it can investigate the accounting books and other necessary records.

(3) **Insurance Act, 1938:** Under Section 33 of the Insurance Act, Insurance Regulatory and Development Authority (IRDA) has authority to investigate the insurer and look into all kind of financial affairs. In accordance with the insurance act of 1938, chartered accountants appointed by authority, serve as forensic accountants and assist in the examination.

(4) **Prevention of Money Laundering Act, 2002:** According to Section 3 of the act, engaging in any procedure or action that involves the profits of crime and portraying them as pristine property constitutes money laundering. Under this act illegally cash obtained and deposited in banks or other financial institutions, working through intricate levels of the financial transactions by hiding the audit trail and separate the illicit revenues from their source as well as investigation and analyse the financial evidence to establish a suspicious transaction.

(5) **Companies (Audit's Report) order, 2003:** As per this CARO, 2003, the company auditor must submit a report to the audit trail documentation. If a sizable portion of fixed assets were sold off in the year and going concern status has been impacted, as part of his obligations, the auditor must identify a connection between AS24 (Discontinuing Operations), Going Concern ASS16, and

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Section 293 Companies Act of 1956 before making his remarks. The auditor is also required to report frauds.

Indian Agencies Dealing in Frauds

In India different agencies dealing with frauds as under:

- Company Law Board (CLB): In compliance to Section 10(E) of Company Act of 1956 The Central government created company law board, as per the Publication No. 364 dated May 31, 1991.
- Income Tax Department
- Reserve Bank of India
- Securities and Exchange Board of India
- Serious Fraud Investigating Office
- Interpol

Role of Forensic Accountant

Forensic Accountant supposed to do following different roles:

- Obtain initial historical background of fraud and conversation with concern authority.
- Collect maximum relevant information.
- Investigation and analysis of accounting records, statements and other financial evidence.
- Analyse available records and check out in the light of relevant legal procedure in context with relevant act and rules.
- Prepare report and communicate to the appointing authority along with exhibits, relevant evidence and documents collected.
- Assisting in legal proceedings and work as an expert witness.

Conclusion

Forensic accountant requires to observe accounting and other financial record in detail in context with various concerned law and financial rules & regulations in legal system. It parallel requires investigating and analysis skill to observe statements. In present time various types of scams and frauds, needs to have an expert to find out such malpractice and assist to take necessary legal actions. Forensic Accounting has much larger scope and proves to be a weapon to prevent, control and take actions against frauds.

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AN EMPIRICAL STUDY OF THE CAMEL FRAMEWORK IN EVALUATING THE PERFORMANCE OF SELECTED BANKS OF INDIA

By
Sanjay K. Zala
Atmiya University

Abstract

The stability and performance of the banking sector are vital for the economic health of a country. In India, the banking industry has undergone significant transformations due to regulatory changes, economic reforms, and technological advancements. The CAMEL framework—which evaluates Capital Adequacy, Asset Quality, Management Quality, Earnings, and Liquidity—has emerged as a comprehensive tool for assessing the financial health and performance of banks. This paper aims to empirically assess the performance of selected banks in India using the CAMEL model. The study period is 5 years that is from 2020 to 2024. CAMEL Model and ANOVA is used for the data analysis. In Axis Bank average of Capital Adequacy Ratio, Non-Performing Assets Ratio, Return on Assets Ratio, Return on Equity Ratio, Net Interest Margin , Loan to Deposite Ratio and Liquidity Coverage Ratio is 17.892, 0.808 , 1.152, 12.008, 3.024, 77.716, 118.92. In HDFC Bank it is 18.854, 0.336, 1.764, 15.274, 3.476, 86.542 and 126.34 respectively.

Key-Words: CAMEL Fraework, Banks, Tier I, Tier II

Introduction

For an economy to function as a whole, banks' stability and financial health are essential. Banks are essential for generating investment, mobilizing savings, and supporting economic development since they are financial intermediaries. However, a bank's internal and external financial characteristics play a major role in its capacity to manage risk, endure economic shocks, and run effectively. The CAMEL framework is used to evaluate these factors, which is necessary to guarantee the banking industry's sustainability. Originally created by the Federal Reserve in the 1970s, the CAMEL framework is one of the most popular instruments for evaluating the stability and performance of financial institutions. The five key factors that determine a bank's financial soundness are capital adequacy, asset quality, management quality, earnings, and liquidity, or CAMEL for short. The model offers a methodical way to assess the crucial elements that support a bank's operational stability and ability to withstand changes in the economy.

CAMEL Model

Capital Adequacy Ratio	Tier 1 Capital + Tier 2 Capital/ Risk-Weighted Assets * 100
Non-Performing Assets Ratio	Non-Perforinf Assets/Total Loans * 100
Return on Assets Ratio	Net Income/Total Assets * 100
Return on Equity Ratio	Net Income/Shareholder's Equity * 100
Net Interest Margin	Net Interest Income/Average Earning Assets* 100
Loan to Deposite Ratio	Total Loans/ Total Deposites * 100
Liquidity Coverage Ratio	High Quality Liquid Assets/ Net Cash Flow over 30 Days * 100

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Review of Literature

Bhat & Kumar (2010) used the CAMEL framework to evaluate the performance of both public and private sector banks in India, identifying key areas of concern such as the impact of non-performing assets (NPAs) on the overall performance of banks.

Patel & Gupta (2017) focused on the relationship between the CAMEL parameters and the profitability of Indian banks. They found significant differences in financial health between state-owned and private banks, with private banks generally performing better in terms of management quality and earnings.

Rao & Bansal (2018) analyzed the effect of NPAs on the asset quality of Indian banks and highlighted how the rising levels of NPAs in public sector banks have led to a deterioration in their financial standing.

Singh & Kapoor (2019) analyzed the impact of Basel III norms on Indian banks, particularly with regard to capital adequacy and liquidity. The study emphasized that the regulations have had a positive influence on the financial stability of large banks but pose challenges for smaller banks with limited capital buffers.

Kumar & Mahajan (2014) examined the management quality of Indian banks, emphasizing the role of corporate governance in ensuring a sound banking system. Their research found that strong management practices directly contribute to better financial performance, as reflected in higher CAMEL scores.

Sharma & Tiwari (2017) explored the relationship between earnings and profitability, showing that banks with consistent earnings are better positioned to weather financial crises. The study found that earnings quality significantly affects the overall health of banks, with higher profitability leading to better ratings in the CAMEL framework.

Research Title:

"An Empirical Study of the CAMEL Framework in Evaluating the Performance of Selected Banks of India"

Research Methodology:

Research Objectives

- To assess the Capital Adequacy of selected banks in India using the CAMEL framework.
- To compare the performance of selected banks in India based on the CAMEL framework over a specific time period.

Research Hypothesis

H_0 : There is no significant difference in Capital Adequacy Ratio of selected Banks during study period.

H_1: There is significant difference in Capital Adequacy Ratio of selected Banks during study period.

H_0 : There is no significant difference in Non-Performing Assets Ratio of selected Banks during Study period.

H_1 : There is significant difference in Non-Performing Assets Ratio of selected Banks during study period.

H_0 : There is no significant difference in Return on Assets Ratio of selected Banks during study period.

H_1 : There is significant difference in Return on Assets Ratio of selected Banks during study period.

H_0 : There is no significant difference in Return on Equity Ratio of selected Banks during study period.

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H_1 : There is significant difference in Return on Equity Ratio of selected Banks during study period.

H_0 : There is no significant difference in Net Interest Margin Ratio of selected Banks during Study period.

H_1 : There is significant difference in Net Interest Margin Ratio of selected Banks during study period.

H_0 : There is no significant difference in Loan to Deposit Ratio of selected Banks during study period.

H_1 : There is significant difference in Loan to Deposit Ratio of selected Banks during study period.

H_0 : There is no significant difference in Liquidity Coverage Ratio of selected Banks during study period.

H_1 : There is significant difference in Liquidity Coverage Ratio of selected Banks during study period.

Universe of the Study

All public and private sector banks of India.

Sample Size:

Out of all Indian Banks only 2 Banks are selected for the research work that is Axis Bank & HDFC Bank

Data-Collection

In this research paper data is collected from annual reports of Axis Bank and HDFC Bank.

Tools & Techniques:

- **CAMEL Model**
- **ANOVA**

Data-Analysis and Interpretation:

Table: Table showing Ratio of Axis Bank from 2020 to 2024

YEAR	CAR	NPL	ROA	ROE	NIM	LDR	LCR
2020	17.53	1.56	0.2	2.34	2.75	76.74	113.03
2021	19.12	1.05	0.7	7.55	2.93	76.15	115.76
2022	18.54	0.73	1.21	12.91	2.81	76.22	116.44
2023	17.64	0.39	1.82	18.38	3.26	79	129.27
2024	16.63	0.31	1.83	18.86	3.37	80.47	120.12
AVG.	**17.892**	**0.808**	**1.152**	**12.008**	**3.024**	**77.716**	**118.92**

[Source: Annual report of Axis Bank fro 2020 to 2024]

In Axis Bank average of Capital Adequacy Ratio, Non-Performing Assets Ratio, Return on Assets Ratio, Return on Equity Ratio, Net Interest Margin , Loan to Deposite Ratio and Liquidity Coverage Ratio is 17.892, 0.808, 1.152, 12.008, 3.024, 77.716, 118.92.

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Table: Table showing Ratio of HDFC Bank from 2020 to 2024

YEAR	CAR	NPL	ROA	ROE	NIM	LDR	LCR
2020	18.52	0.36	1.71	15.35	3.67	85.21	145
2021	18.79	0.4	1.78	15.27	3.71	82.01	137.95
2022	18.9	0.32	1.78	15.39	3.48	85.16	108.11
2023	19.26	0.27	1.78	15.74	3.52	83.49	125.65
2024	18.8	0.33	1.77	14.62	3	96.84	115
AVG.	**18.854**	**0.336**	**1.764**	**15.274**	**3.476**	**86.542**	**126.34**

[Source: Annual report of HDFC Bank fro 2020 to 2024]

Interpretation

In HDFC Bank average of Capital Adequacy Ratio, Non-Performing Assets Ratio, Return on Assets Ratio, Return on Equity Ratio, Net Interest Margin , Loan to Deposite Ratio and Liquidity Coverage Ratio is 18.854, 0.336, 1.764, 15.274, 3.476, 86.542 and 126.34 respectively.

Application of ANOVA

Capital Adequacy Ratio

H_0 : There is no significant difference in Capital Adequacy Ratio of selected Banks during study period.

H_1 : There is significant difference in Capital Adequacy Ratio of selected Banks during study period.

Table: Table showing Application of ANOVA

Source of Variation	SS	DOF	MS	F	P-value	F crit
Between Groups	2.31361	1	2.31361	4.626526	0.063682	5.317655
Within Groups	4.0006	8	0.500075			
Total	6.31421	9				

Interpretation

Calculated value of F is 4.626526 and Tabulated value of F is 5.317655. Calculated value is less compare to Tabulated value. So, null hypothesis is accepted it means there is no significant difference in Capital Adequacy Ratio of selected Banks during study period.

Non-Performing Assets Ratio

H_0 : There is no significant difference in Non-Performing Assets Ratio of selected Banks during Study period.

H_1 : There is significant difference in Non-Performing Assets Ratio of selected Banks during study period.

Table: Table showing Application of ANOVA

Source of Variation	SS	DOF	MS	F	P-value	F crit
Between Groups	0.55696	1	0.55696	4.194766	0.074727	5.317655
Within Groups	1.0622	8	0.132775			
Total	1.61916	9				

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Interpretation

Calculated value of F is 4.194766 and Tabulated value of F is 5.317655. Calculated value is less compare to Tabulated value. So, null hypothesis is accepted it means there is no significant difference in Non-Performing Assets Ratio of selected Banks during study period.

Return on Assets Ratio

H_0 : There is no significant difference in Return on Assets Ratio of selected Banks during study period.

H_1 : There is significant difference in Return on Assets Ratio of selected Banks during study period.

Table: Table showing Application of ANOVA

Source of Variation	SS	DOF	MS	F	P-value	F crit
Between Groups	0.93636	1	0.93636	3.701759	0.090556	5.317655
Within Groups	2.0236	8	0.25295			
Total	2.95996	9				

Interpretation

Calculated value of F is 3.701759 and Tabulated value of F is 5.317655. Calculated value is less compare to Tabulated value. So, null hypothesis is accepted it means there is no significant difference in Return on Assets Ratio of selected Banks during study period.

Return on Equity Ratio

H_0 : There is no significant difference in Return on Equity Ratio of selected Banks during study period.

H_1 : There is significant difference in Return on Equity Ratio of selected Banks during study period.

Table: Table showing Application of ANOVA

Source of Variation	SS	DOF	MS	F	P-value	F crit
Between Groups	26.66689	1	26.66689	1.054163	0.33459	5.317655
Within Groups	202.374	8	25.29675			
Total	229.0409	9				

Interpretation

Calculated value of F is 1.054163 and Tabulated value of F is 5.317655. Calculated value is less compare to Tabulated value. So, null hypothesis is accepted it means there is no significant difference in Return on Equity Ratio of selected Banks during study period.

Net Interest Margin:

H_0 : There is no significant difference in Net Interest Margin Ratio of selected Banks during study period.

H_1 : There is significant difference in Net Interest Margin Ratio of selected Banks during study period.

Table: Table showing Application of ANOVA

Source of Variation	SS	DOF	MS	F	P-value	F crit
Between Groups	0.51076	1	0.51076	6.526867	0.033922	5.317655
Within Groups	0.62604	8	0.078255			
Total	1.1368	9				

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Interpretation

Calculated value of F is 6.526867 and Tabulated value of F is 5.317655. Calculated value is high compare to Tabulated value. So, null hypothesis is rejected it means there is significant difference in Net Interest Ratio of selected Banks during study period.

Loan to Deposite Ratio

H_0 : There is no significant difference in Loan to Deposit Ratio of selected Banks during study period.

H_1 : There is significant difference in Loan to Deposit Ratio of selected Banks during study period.

Table: Table showing Application of ANOVA

Source of Variation	SS	DOF	MS	F	P-value	F crit
Between Groups	194.7457	1	194.7457	10.08635	0.013078	5.317655
Within Groups	154.4628	8	19.30785			
Total	349.2085	9				

Interpretation

Calculated value of F is 10.08635 and Tabulated value of F is 5.317655. Calculated value is high compare to Tabulated value. So, null hypothesis is rejected it means there is significant difference in Loan to Deposit Ratio of selected Banks during study period.

Liquidity Coverage Ratio

H_0 : There is no significant difference in Liquidity Coverage Ratio of selected Banks during study period.

H_1 : There is significant difference in Liquidity Coverage Ratio of selected Banks during study period.

Table: Table showing Application of ANOVA

Source of Variation	SS	DOF	MS	F	P-value	F crit
Between Groups	137.5668	1	137.5668	0.997057	0.347264	5.317655
Within Groups	1103.783	8	137.9729			
Total	1241.35	9				

Interpretation

Calculated value of F is 0.997057 and Tabulated value of F is 5.317655. Calculated value is less compare to Tabulated value. So, null hypothesis is accepted it means there is no significant difference in Liquidity Coverage Ratio of selected Banks during study period.

Conclusion

In Axis Bank average of Capital Adequacy Ratio, Non-Performing Assets Ratio, Return on Assets Ratio, Return on Equity Ratio, Net Interest Margin , Loan to Deposite Ratio and Liquidity Coverage Ratio is 17.892, 0.808, 1.152, 12.008, 3.024, 77.716, 118.92. In HDFC Bank it is 18.854, 0.336, 1.764, 15.274, 3.476, 86.542 and 126.34 respectively.

Limitations of the Study

- Only 2 banks are selected.
- Study period is only 5 years.

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FORENSIC ACCOUNTING: AN INSTRUMENTAL TO PREVENT FRAUDS

By
Dr. Beena S. Brahman
Assistant Professor
Smt. M. P. Patel College of Commerce &Center for Professional Courses, Kadi

Abstract

Authenticated financial statements presenting true and fair view plays a significant role in the financial decision making of every stakeholder of the company. Though with 45 industrial sectors booked the economic growth rate of 8.2% in the year 2024, expecting India as one the top three economic power, financial scamps in the history cannot be overlooked. Corruption, conspiracy, embezzlement, money-laundering, bribery and extortion have increased. Forensic accounting can be a tool to resist such frauds in the corporate industry so that interest of all related parties can been secured. This paper presents the brief discussion of various laws, statutes national and international to curtailing fraudulent practices. Also discusses the types of frauds and elaborates it with the examples of frauds in the Indian history. Author has suggested Forensic audit as an emerging exploratory tool to be practiced by the corporate.

Keywords: Forensic accounting, financial fraud, scam, investigative skills, white collar crimes

Introduction

While examining the books of accounts of any company or an individual, auditors are required to narrow down with evidences in case of any possibilities of mal practices. Such practices are nothing but a forensic audit. Forensic audit is the evaluation and examination of the financial records. It is nothing but identifying unlawful behaviour. Producing evidences after thorough investigation of financial statements of any company will be useful for legal proceedings. A forensic auditor is expected to have expertise in the area of accounting and auditing process. Along with extensive knowledge of accountancy and audit, they need to be well acquainted with regulative structure of forensic auditing.

It's a systematic process aimed at gathering and delivering evidences to the court of law. Apart exploring the intent behind such scams is equally important. The involvement of the parties in committing fraud and putting efforts to remove the evidences of the fraud needs to be investigated. Any irregularities if observed, forensic auditor needs to take a call on gathering evidences by investigating the realities. They need to reach to the root cause of the fraud, monetary volume involved.

Meaning of Forensic Accounting

Forensic accounting is basically associated with two different identifying terms, namely forensic and accounting. Initially, a public open court was held in Rome which is known as "of the forum", which is synonyms of the word forensic, a Latin word. Anything that looks to the law and deals with evidence is known as forensics. And there is another term, accounting, which is very well understood by a person from a commercial background to record financial transactions in the books of accounts to know the results and status of the business. Forensic accounting, if briefly understood, is the process of creating legal documents based on accounting principles to solve a financial crime or dispute.
According to the AICPA, "Forensic accounting is the application of accounting principles and investigative skills to legal disputes. It involves collecting, analyzing, and evaluating evidence to interpret and communicate findings in legal or administrative settings."

From the above definition and explanation of forensic accounting we can derive the following features of it.

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- Forensic accounting is a new branch of accounting which is emerged due to the increment of white color crime.
- Forensic accounting is a procedure comprises the concept of accounting, auditing and investigation, legitimate background and information technology.
- Forensic accounting is a preventive tool with the help of which anyone can prevent the proposed financial fraud.
- Forensic accounting is not only preserves the quantitative loss of finance but also look after the qualitative aspects like morale, ethics, trust, reputation etc.
- Forensic accounting is an objective process with a predetermined objective.
- Confidentiality is a key feature of forensic accounting.
- The process of forensic accounting has been held by forensic accountant independently.
- Forensic accountants are careful to talk to suspects formally so that they do not reveal that they are suspects.
- Ethical conduct is in foundation of forensic accounting which is by no means non-negotiable term.
- Effective and clear communication of evidence gathering report is a skill of this process.

Review of Literature

1. **(Dhami, 2015)**The paper titled "Forensic Accounting: Signaling Practicing Accountants to Improve Skillset and Forming Regulatory Body for Forensic Accountants in India", has portrayed the detailed information regarding the most limelight issue in India, that is, Forensic Accounting as financial fraud called the white collar crime, has been increased now a day. Besides it also provides some prevention steps of fraud in the name of suggestions. The paper comprises the basic points like historical perspective, qualities of forensic accountant, tools and techniques of forensic accounting. At last an author has tried to conclude that it is high time to form a regulatory body of forensic accountant and to implement forensic accounting strictly in India like other countries, as a prevention tool of theft, corruption, conspiracy embezzlement, money-laundering, bribery and extortion as far as finance and accountancy is concerned.

2. **(Krishan Lal Grover, 2017)**It is an informative paper of basic concepts of the forensic accounting. In the paper, authors have tried to give profound knowledge of requirement of forensic accounting in India. Further, this paper includes the major points like types of frauds, role of forensic accounting in fraud; major scams have taken place in India and different services rendered by forensic accountant.

3. **(Chaturvedi, 2015)**This is the another paper which has discussed the list of white collar crime like, Harshad Mehta (1992), Satyam Computers (2009), Ketan Parekh (2008), Kingfisher Airlines Credit Card (2007) etc., have been taken place in India. With the help of these examples, an author has tried to explain that how much forensic accounting is important to implement in India. Secondary data of Percentage of companies affected by varieties of frauds and percentage of companies describing themselves as highly vulnerable in various frauds have been presented in tabular and graphical form and concluded that India has already faced substantial losses due to rapid increase in white-collar crimes and the belief that our law enforcement agencies do not have sufficient expertise or the time needed to uncover the frauds. Furthermore, an author has also suggested the scope of further research in this field.

4. **(Dr. M Muniraju, 2023)** This is the paper of forensic accounting with respect to cyber fraud where authors have depicted that employees are more precious asset of any organizations. They also become the part of investigation process regarding the cyber fraud irrespective of their

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designation. Authors have taken primary data through questionnaire and apply Convenience Sampling as statistical tool for the study. The study has concluded that there is a negative impression of it on the employees as they offended if their work is examined in a suspicious angle. Further, employees those are technically sound, are treated as culprits and refuse to cooperate in this process.

5. **(Ashwin R, 2018)**Health South, Enron, TYCO International, Freddie Mac and WorldCom, these 5 companies of different industries has been studied by authors in this paper in the context of their financial fraud and its detection through forensic accounting. Not only that but this paper also reveals the position of the stock price and reputation of the companies in pre and post detection. At last, authors have concluded that forensic accounting has played very vital role to detect such frauds and helps in stabilizing the stock market by reduce such financial frauds. They also add in conclusion that dealing with large data and complexities of financial are challenging where forensic accounting is not a solution for all.

6. **(Vivek Kumar Sindhi, 2023)** In 2022, Association of Certified Fraud Examiners, (ACFE), has revealed that India has occupied the first rank in the teams of number of fraud cases in South Asian Nations. As per the study, there were 103 financial fraud cases have been recorded in the name of India, which was highest among all neighbor countries. With this authors have discussed the significance to introduce forensic accounting in India, indulging the points like evaluation of forensic accounting in India, various techniques used for it and forensic accountant as a future career opportunity.

7. **(Das, 2020)**This paper is descriptive in nature where an author has made a very genuine attempt to explain forensic accounting and its applicability in India. With the help of taking secondary data, he has nicely portrayed the various aspects like perspective of forensic accounting, practice and techniques of forensic accounting, types of fraud, implementation of forensic accounting in India, fraud model, role of forensic accountant, especially in India, and problem faced by forensic accounting in India. At last he has concluded that even though the Government of India has positively initiated various bodies like SFIO, CFAP, CAME etc., there is miles to go to formulate the proper structure of forensic accounting. For betterment of application of forensic accounting in India he has also recommended some useful points in the paper.

8. **(Kumar, 2021)** This paper titled, "Impact of Forensic Accounting on Indian Industry" have revealed the truth that Forensic accounting is not only a case of detecting fraud after it has occurred but also helps to prevent any unwanted fraud in advance.The innovations used by law breakers and fraudsters are constantly changing and forensic accounting needs to be at the top of their game to prevent and identify these fraudulent practices. To justify his study, he has taken secondary as well as primary data of 100 respondents and apply t-test as a statistical tool.

9. **(B, 2023)**Due to the rise of financial fraud in various sectors like Bank, Insurance, Stock Market, Cyber world, etc., here, an author has written this exploratory research paper, which highlights the importance of forensic accounting. In this paper history, techniques, application of forensic accounting as well as the prevalence of forensic accounting in India understood by related laws prevailing in India regarding forensic accounting, major scams in India, agencies dealing with frauds in India, present scenario of forensic accounting in India and challenging faced to implement forensic accounting. At last like the other papers, he has also emphasis the argument in favor of introducing forensic accounting in India without delay.

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10. **(Vyas, 2023)**This paper has exploratory in nature in which types of fraud and techniques of forensic accounting have been explained in-depth to prevent the fraud so that global as well as Indian economy will have become stable to sustain the interest of market place.

11. **(Mr. Pema Lama, 2018)**Companies like ENRON, WORLDCOM, SATYAM, etc., have set the negative impression in the market by fraudulent financial reporting. With a view to prevent the interest of investors and for healthy economy environment, it becomes necessary to break such kind of malpractices in the world of accounting, forensic accounting- a new concept have been emerged. An author has put genuine efforts to understand the conceptual framework of financial and corporate frauds by gathering secondary data. He has also examined the applicability of forensic accounting in investigating corporate frauds and scams in India. To support his research, he has represented approx. 12 cases of frauds at global level. Further, in India, there are 17 cases of different kind of fraud has been explained in this paper. At last, suitable preventive measures of fraud, recommendations and conclusion have been provided by author to support forensic accounting.

12. **(Jangid D. H., 2023)**This research article has presented the knowledge of forensic accounting, its scope, steps, role of forensic accountant and future aspects in depth. This articles has revealed the brief of scams of last 22 years and has concluded that forensic accounting is a tool with the help of which forensic accountant has identified and reduce the scams of the companies easily.

13. **(Arora N. A., 2021)**This is a paper where authors have tried to explain the existing laws, nationally as well as internationally, to prevent the frauds and malpractices in corporate world. They have explain that such kind of malpractices have negatively affected to the moral ethics, trust and image of the company as well as its country. At last they have highlighted and suggested that there should be a body that helps prevent such frauds in the first place and works to stop them before they happen.

Glimpses of Frauds In India

It was year 1992, Mr. Harshad Mehta, was the very first to attempt scam by manipulating stock prices and volumed Rs.4000 crore fraud. Later the courage to commit frauds raised extensive and could resulted in Ketan Parekh scam and Scam of Stamp Paper by Telgi of Rs.40000 crore and Rs.30000 crore respectively. Satyam Computers scam amounting to Rs.7800 crores by inflating the cash, bank balances and profitability artificially. 2G Spectrum and Commonwealth Games scams of the year 2010 amounted the fraud to Rs.70000 crores in both the cases. Rs.1875 crores loan sanctions to Videocon by Chanda Kochar, CEO of ICICI Bank was an illustration of undue advantages of powers and authorities. Non-existence of import payments led the fraud of Rs. 6000 crores in the year 2015 Bank of Baroda bank officials. A person Chartered Accountant by profession was even involved in the fraud of Rs.1000 crores with untruthful cheques, letter of undertakings and Life Insurance policies known as Syndicate Bank scam in the year 2016. It has happened twice with Syndicate Bank when both time, Chartered Accountants only attempted fraud resulted into a fraud of Rs. 8000 crores. Liquor king Vijay Mallya accused for the fraud of Rs. 9000 crores and it was a height when a group of seven banks were defeated together amounting the scam to Rs. 3695 crores. It was year 2018, when this happened, prior to that the same has witnessed by Bank of Maharashtra with an involvement of their senior official named Padmakar Deshpande. The scam led to Rs. 836 crores. Vikram Kothari led Rotomac scam of 2018, PMC scam amounting Rs. 4355 crores of 2019, Nirav Modi with his uncle Mehul Choksi defeated Punjab National Bank for Rs.14000 crores with fake letter of undertaking have hard-hit banking sector. The master stroke was then when the consortium of 28 banks was defeated for Rs.22,842 crores by ABG Shipyard in the year 2022. If observed thoroughly manipulation has taken place majority with banking sector with the help of internal authoritative officials.

The corporate world though growing and creating marvelous opportunities is also found forbidding and dishonest in its practices. There, forensic auditors have critical role to play to safeguard the business houses and all supporting financial institutions' interest and to defend their rights. To curb such misappropriations, dishonesty, deceptive practices, manipulations, falsified actions, misguiding moves and transactions, various lawbreaking proceedings, and activities are carried out by the Forensic Auditors.

Objectives of the Study

1. To understand the concept of Forensic Accounting and Audit
2. To understand the scope of word "Fraud"
3. To understand various international and Indian statutes, laws that governs and assist the process of forensic auditing.
4. To get the overview of scams in India
5. To understand various international and Indian standards, laws, and precedents that forms the foundation for forensic auditing.

Statutory Definitions of Fraud

Section 17 of Indian Contract Act, 1872

" 'Fraud' means and includes any of the following acts committed by a party to a contract, or with his connivance, or by his agent', with intent to deceive another party thereto or his agent, or to induce him to enter into the contract: —

(1) the suggestion, as a fact, of that which is not true, by one who does not believe it to be true;
(2) the active concealment of a fact by one having knowledge or belief of the fact;
(3) a promise made without any intention of performing it;
(4) any other act fitted to deceive;
(5) any such act or omission as the law specially declares to be fraudulent."

RBI has defined the term Fraud as under

"A deliberate act of omission or commission by any person, carried out in the course of a banking transaction or in the books of accounts maintained manually or under computer system in banks, resulting into wrongful gain to any person for a temporary period or otherwise, with or without any monetary loss to the bank."

As per Section 447 of Companies Act, 2013

" 'Fraud' in relation to affairs of a company or anybody corporate, includes any act, omission, concealment of any fact or abuse of position committed by any person or any other person with the connivance in any manner, with intent to deceive, to gain undue advantage from, or to injure the interests of, the company or its shareholders or its creditors or any other person, whether or not there is any wrongful gain or wrongful loss. 'Wrongful gain' means the gain by unlawful means of property to which the person gaining is not legally entitled. 'Wrongful loss' means the loss by unlawful means of property to which the person losing is legally entitled."

As per Fraud Act, 2006

"The offence of fraud under the Fraud Act 2006, may be committed by:

(a) dishonestly making a false representation – **Section 2** (to a person, or to any system or device) with a view to gain or with intent to cause loss or expose to a risk of loss;

(b) dishonestly – **Section 3** (and with a view to gain or with intent to cause loss, etc.) failing to disclose information when under a legal duty to disclose it; or

(c) dishonest abuse of position, with a view to gain or to cause loss, etc. – **Section 4.** It is irrelevant whether gain, loss or exposure to loss actually occurs."

Statutes Regulating Frauds Internationally and Nationwide

The United Kingdom Bribery Act, 2010

As per The United Kingdom Bribery Act, 2010 which was enacted on 1st July, 2011, failing to discourage the bribery will be charged as crime. Indefinite amount of penalty with ten years of imprisonment (maximum) is the punishment of fraud under this act. According to this Act, following different sections are included-

- Bribing another citizen
- Being bribed
- Bribing a foreign public official
- Failing by a commercial organization to prohibit bribery.

Foreign Corrupt Practices Act, 1977 (FCPA)

The act applies to the whole of world for corruption and bribery. The act is applicable to publicly traded companies, their employees, directors, executives, stakeholders, agents, shareholders. As per this Act any foreign company or any individual directly or indirectly with its intermediaries, if assists facilitation or execution of any payments proved corrupt in the territory of United States are punishable. Convicted parties may be punished with an imprisonment of 25 years for every offence and a penalty up to 5 million dollars.

The Sarbanes-Oxley Act, 2002

Two major scandals, Enron and WorldCom made US Government to enact this Act in the year 2002. The enactment was with an intention to regain consumer trust on US companies and the financial markets. It has tightened the provisions of transparency and increased the amount of fine in case of fraudulent accounting practices. The following tough going provisions were included.

- Every five years, companies need to change their audit partners.
- Use of audit committees to be expanded
- Companies to include internal control system
- It is required that no more than two Board members can be CPA
- Raised criminal penalties for the securities fraud

United Nations Convention

United Nations Convention is anti-corruption instrument passed by the United Nations General Assembly on 31st October, 2003. It came into effect from 14th December, 2005 and it recognized universally. It is passed against the corruption as all-inclusive response to the corruption related issues globally. The issues like misuse of power, bribery, corruption with certain preventive measures, technical aid and knowledge, international collaboration, criminalization, law enforcement are covered by this convention. And the penalty will go parallel with the respective country's rule.

The Companies Act, 2013

According to Section 143 (12) and Rule 13 of the Companies Act 2013, "if an auditor has reason to believe that the client is committing fraud while performing his audit, the auditor must notify the board or audit committee within two days of becoming aware of the fraud, and the report must include the nature of the fraud, the approximate amount, the parties involved, and an explanation is also required to include some specific information in the board's report, such as the extent of the fraud, its description, the parties involved, and the remedial action taken, among other things."

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Serious Fraud Investigation Office (SFIO)

The main of establishing Serious Fraud Investigation Office was to establish a body having multidisciplinary expertise capable to tackle serious and multifaceted corporate issues and frauds those assigned under the Section 212 of Companies Act, 2013. It was founded by the Ministry of Corporate Affairs, the Government of India. The founding moto was to detect and prosecute white-collar frauds. It has an expertise in the area of forensic auditing, law, banking, accountancy, investigation, information technology, taxation, capital market and company law. When the Government of India is of opine to inspect into the affairs of any company, it is assigned to SFIO. On receipt of report under section 208 of the Companies Act, 2013 from the Registrar, receipt of special resolution passed to investigate affairs of company, for public interest, and on request from Central or State Government's department, Ministry of Corporate Affairs may intimate SFIO to initiate their actions.

Indian Penal Code 1860

The Indian Penal Code is a significant criminal code of India. It comprehends all the criminal laws. Though "Fraud" is defined in the code, the terminologies like dishonesty, fraudulently, wrongful loss, wrongful benefit are defined under the Indian Penal Code.
Every aspect related to fraud and fraudulent action and offences like misappropriation, breach of confidence, mischief, Impersonation, inappropriate calculations, adultery, theft are inclusive in this code. According to this, under Section 168, any public servant found guilty in any unauthorized and unlawful transaction, will be imprisoned for a period up to one year, fine or both. The provisions related to bribery and cheating are explained in Section 171B and 417 respectively

Indian Evidence Collection Act, 1872

This is one of the very important legislations passed by the Imperial Legislative Council of the British Raj. Evidence has a power to prove anything true be recognized in the court of law. It is mentioned in the act that the admissibility, relevancy both logical and legal and weight must be present in the evidence or proof presented. The proofs can be in the form of oral testimony and documentary evidences. Any evidences in the paper form even in electronic form is documentary evidence as per Indian Evidence Collection Act, 1872.

ICSI Anti Bribery Code

Corporate Anti Bribery Code is well thought enforcement to contribute as a responsible professional for promoting and establishing accountable and transparent governance in India. It is a move of the Institute of Company Secretaries of India for strengthening the movement of eradicating fraud. It was introduced on 4th October, 2017 to ensure that every company adopting this code will ensure that nor the company itself and any of its members, officials engage in bribery. It's a voluntary for companies to adopt and enforce. If adopted should be enforced and applicable to the company, employees, consultants, Board of Directors, advisors, intermediaries, representatives, agents, consultants, vendors, contractors, suppliers and all related to the company in any capacity.

Fugitive Economic Offenders Act (2018)

The Fugitive Economic Offenders Act, 2018 resulted existence due to banking frauds. Under this Act, the permission was granted to courts to seize all properties and assets of culprits convicted the evasion of the fraud more than of Rs.100 crores. Even those who attempts to evade the charge willfully are also considered under this to seize their properties.

Enforcement Directorate (ED)

The Directorate of Enforcement is a multidisciplinary organization operated under the Department of Revenue, Ministry of Finance, Government of India. It is organized to investigate the

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offences of money laundering and foreign exchange laws violation. The enforcement of the following mentioned statutes is included under Enforcement Directorate.

1. The Prevention of Money Laundering Act, 2002 (PMLA)
2. The Foreign Exchange Management Act, 1999 (FEMA)
3. The Fugitive Economic Offenders Act, 2018 (FEOA)
4. The Foreign Exchange Regulation Act, 1973 (FERA)
5. Sponsoring agency under COFEPOSA

Enforcing all these acts, ED is fighting the economic crimes in India on multifaceted platforms. Observing the need and need to safeguard country's goodwill and credibility, demonstrating forensic audit is highly relevant. And it has been practiced in solving majority of the frauds taken place in banking industry.

Forensic Accounting and Investigation Standards (FAIS), 2023

Digital Accounting and Assurance Board (DAAB) of ICAI is the first in the world to introduce Forensic Audit and Investigation Standards (20 standards) on 1st July, 2023. The frauds like Enron, Satyam Computers, Bhushan Steel and their enormous impact on the Indian economy surged forensic accounting, forensic audit and investigation. Chartered Accountant are the responsible and authoritative part of this duty in the industry. Uniformity and transparency of standards to be kept in practice is one the objective behind this initiative. Forensic Accounting and Investigation Standards are the principles, minimum requirement, expected quality of services, a guidance while conducting the forensic accounting and auditing assignments at any entity. Apart, ICAI has also issued a direction and guiding note on reporting fraud covered under section 143 (12).

Conclusion

The frauds in Indian corporate history evidences the malicious intent of various parties engaged in the fraud. It's a challenge for any economy to curb such fraudulent intentions and actions. Various regulations are even enacted and mandated at all possible frontier to control, prevent, reduce and hold on financial scams and frauds. It is observed that well educated, white collared executive levelled officials, corporates, authorities were engaged in the voluminous frauds in Indian banking and corporate sector.
Here arises a question of one's integrity, honesty, trustworthiness. And it is an observed fact that no fraud took place in a single day. It's a well-organized, well thought, well planned and well executed acts. Its greed, its malicious intent, value system, and a poor understanding of ethical and unethical practices can only lead one to be fraudster.

Something dense should be thought to educate a human being to have morally responsible, truthful, trustworthy, and honest behaviour. It should be a moral responsibility of every individual on this earth to imbibe moral values in the mind and heart of every individual.

If frauds are detected at early stage, or before they take place, it will save economy, money, respect, goodwill and credibility of the nation. Forensic audit is the best solution for early exploration of the fraudulent actions. Forensic Auditor being a responsible part of this industry should be well acquainted with the knowledge of all these statutes and provisions.

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CLOUD ACCOUNTING IN INDIA: BENEFITS FOR SMALL AND MEDIUM ENTERPRISES

By
Dr. Motibhai L.Ghoghol
Assistant Professor
Desai C. M.Arts And Commerce College Viramgam, Gujarat University

Abstract

Cloud accounting has emerged as a game-changing solution for small and medium enterprises (SMEs) in India, providing an efficient and cost-effective way to manage financial operations in the digital era. This article explores the transformative impact of cloud accounting, its benefits, challenges, and future prospects in India. Cloud accounting enables SMEs to enhance operational efficiency, ensure compliance with regulatory requirements such as GST, and access real-time financial insights, all while reducing costs. However, its adoption is hindered by barriers such as cybersecurity concerns, lack of digital literacy, and resistance to change. As India accelerates its digital transformation through initiatives like Digital India and Make in India, the adoption of cloud accounting is expected to grow. Integration with emerging technologies like artificial intelligence, blockchain, and machine learning will further enhance its capabilities, while industry-specific solutions and increased accessibility in tier-2 and tier-3 cities will broaden its reach. This article highlights the immense potential of cloud accounting to drive growth, efficiency, and competitiveness for SMEs in India’s evolving business landscape.

Keywords: Cloud Accounting, SMEs, Financial Management, Digital Transformation, GST Compliance, Emerging Technologies

Introduction

Cloud accounting is a transformative approach to managing financial operations, leveraging cloud-based technology to store, process, and access data. Unlike traditional accounting systems, which require on-premises software installations and local servers, cloud accounting operates entirely online. This means businesses can access their financial information from anywhere with an internet connection, fostering greater flexibility and convenience. For small and medium enterprises (SMEs) in particular, cloud accounting has emerged as a game-changer, offering robust features that were once accessible only to larger corporations with significant IT resources. One of the defining features of cloud accounting is its ability to centralize and streamline financial processes. Through cloud platforms, users can perform tasks such as invoicing, expense tracking, payroll management, and financial reporting in real-time. The automation capabilities of cloud accounting reduce manual intervention, minimizing errors and saving time. Additionally, these platforms often integrate seamlessly with other business tools, such as customer relationship management (CRM) and inventory systems, providing a unified view of the organization’s financial health.

Another critical aspect of cloud accounting is its affordability and scalability. Traditional accounting systems typically require substantial upfront investments in hardware, software licenses, and IT maintenance. Cloud accounting, on the other hand, follows a subscription-based model, allowing businesses to pay only for the services they use. This model is particularly advantageous for SMEs with limited budgets, enabling them to access sophisticated financial tools without incurring high costs. Furthermore, as businesses grow, cloud accounting systems can scale to meet their expanding needs without requiring costly upgrades or overhauls. Data security is a primary concern for any financial management system, and cloud accounting addresses this by offering advanced protection measures. Leading providers implement strong encryption protocols, multi-factor authentication, and regular data backups to safeguard sensitive financial information. Moreover, cloud accounting platforms typically include disaster recovery solutions, ensuring that data remains accessible even in the event of a hardware failure or cyberattack. For SMEs, which may lack dedicated IT teams, these built-in security features

provide much-needed peace of mind. In the Indian context, cloud accounting has seen growing adoption as businesses increasingly recognize its potential to improve operational efficiency. The proliferation of affordable internet services and government initiatives promoting digital transformation, such as the introduction of GST and digitization incentives, have further accelerated the shift to cloud-based solutions. For SMEs operating in diverse and competitive markets, cloud accounting offers a vital tool to stay agile, compliant, and financially sound. As businesses navigate a fast-evolving technological landscape, cloud accounting stands out as an indispensable ally. By providing real-time insights, cost-effective solutions, and enhanced security, it empowers SMEs to manage their finances with precision and confidence. As adoption rates rise, cloud accounting is set to redefine how businesses in India approach financial management.

Literature Review

Sharma & Patel (2019) explored the primary barriers preventing the widespread adoption of cloud accounting in India, with cybersecurity threats and data privacy concerns emerging as significant obstacles. Their study found that Indian businesses, especially SMEs, are hesitant to transition to cloud-based accounting systems due to fears of data breaches and unauthorized access to financial records. Many businesses prefer on-premise accounting software, believing it offers better control over sensitive financial data. The study also pointed out that a lack of awareness regarding encryption technologies and cybersecurity protocols further deters businesses from adopting cloud accounting.

Rao & Verma (2020) analyzed the financial implications of cloud accounting for Indian enterprises and concluded that cost remains a significant challenge. While cloud accounting eliminates the need for costly hardware and software installation, businesses face recurring subscription fees, which can be a financial burden for small businesses with limited budgets. Additionally, companies often have to invest in cybersecurity measures and staff training, further increasing the cost of implementation. The study highlighted that despite cloud accounting being marketed as a cost-effective solution, hidden expenses related to compliance, software upgrades, and security enhancements discourage many businesses from making the switch.

Gupta et al. (2021) conducted an empirical study on the technological readiness of Indian businesses for cloud accounting. Their findings revealed that a significant portion of Indian accountants and finance professionals lack the necessary technical knowledge to effectively use cloud accounting software. The study pointed out that resistance to change and reliance on traditional accounting methods prevent many businesses from fully utilizing cloud-based financial solutions. Furthermore, a lack of comprehensive training programs and support from software providers has made it difficult for businesses to transition smoothly to cloud accounting systems.

Iyer & Raghavan (2022) examined the impact of government regulations on the adoption of cloud accounting in India. Their study found that frequent changes in Indian taxation laws, particularly Goods and Services Tax (GST) regulations, pose a challenge for cloud accounting software providers. Since taxation policies require constant updates, businesses using cloud accounting software often struggle with software compliance and integration issues. The research emphasized that cloud accounting vendors must continuously modify their software to align with regulatory changes, leading to frequent disruptions in financial management operations.

Das & Mukherjee (2023) investigated the role of infrastructure and internet connectivity in cloud accounting adoption in India. Their study found that businesses in rural and semi-urban areas face significant difficulties in implementing cloud-based accounting solutions due to unreliable internet connectivity. Frequent network failures result in disruptions in financial data processing and reporting, making cloud accounting an impractical choice for businesses operating in areas with poor digital

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infrastructure. The study suggested that improved internet penetration and government-backed digital initiatives could help overcome this challenge in the future.

Benefits of Cloud Accounting for SMEs

Cloud accounting has become an indispensable tool for small and medium enterprises (SMEs), offering a host of advantages that address their unique challenges and drive operational efficiency. By leveraging cloud technology, SMEs can manage their financial processes more effectively, allowing them to focus on growth and competitiveness in dynamic markets. One of the most significant benefits of cloud accounting for SMEs is cost efficiency. Traditional accounting systems often require substantial upfront investments in software, hardware, and ongoing IT maintenance. Cloud accounting eliminates these costs by offering a subscription-based model, allowing SMEs to pay for only the services they need. This reduces financial strain, particularly for small businesses operating with tight budgets. Additionally, updates and system upgrades are handled by the service provider, further saving on maintenance expenses.

Accessibility and mobility are also key advantages of cloud accounting. Since financial data is stored on remote servers and accessed via the internet, business owners and accountants can work on their financial records from any location. This is particularly beneficial for SMEs with remote teams or multiple office locations. Mobile access through smartphones and tablets allows users to check financial reports, approve transactions, or generate invoices on the go, fostering flexibility and responsiveness. Cloud accounting streamlines collaboration among team members and external stakeholders. Unlike traditional systems that require data sharing through physical copies or emails, cloud platforms enable real-time access to financial information. Multiple users, including accountants and financial advisors, can work on the same data simultaneously without the risk of version conflicts. This collaborative feature ensures accurate and up-to-date records, facilitating better decision-making.

Automation is another game-changing benefit of cloud accounting for SMEs. Routine tasks such as invoicing, payroll processing, bank reconciliations, and tax calculations can be automated, significantly reducing manual intervention and errors. This not only saves time but also allows business owners to focus on strategic initiatives rather than administrative tasks. Integration with banking systems further enhances automation by syncing transactions directly into the accounting software, simplifying cash flow management. Scalability is a vital consideration for growing SMEs, and cloud accounting addresses this need effectively. Cloud platforms can easily adapt to changes in business size, whether it involves adding new users, handling higher transaction volumes, or incorporating advanced features. This flexibility ensures that SMEs do not outgrow their accounting systems, eliminating the need for costly upgrades or replacements as the business expands.

Data security, often a concern for SMEs, is robustly addressed by cloud accounting providers. Advanced encryption, multi-factor authentication, and regular backups ensure that sensitive financial data is protected from unauthorized access and loss. Many platforms also offer disaster recovery solutions, guaranteeing uninterrupted access to financial records even in the event of cyberattacks or hardware failures. This level of security is often beyond the reach of SMEs with limited IT resources. In the Indian context, cloud accounting platforms have also simplified compliance with regulatory requirements such as GST. These systems are equipped with tools to automate tax calculations, generate GST-compliant invoices, and submit returns directly through the platform. This reduces the administrative burden on SMEs and helps them avoid penalties for non-compliance.

Overall, cloud accounting offers SMEs a transformative approach to managing their finances. By providing cost-effective, secure, and scalable solutions with enhanced accessibility and automation, it empowers small businesses to operate more efficiently and compete effectively in today's fast-paced

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environment. For SMEs aiming to achieve sustainable growth and financial stability, adopting cloud accounting is not just a choice but a strategic imperative.

Challenges in Adoption of Cloud Accounting by SMEs

While cloud accounting offers numerous advantages for small and medium enterprises (SMEs), its adoption is not without challenges. For many SMEs, transitioning from traditional accounting methods to cloud-based systems involves overcoming financial, technological, and cultural hurdles. Understanding these challenges is essential to finding solutions that can facilitate smoother adoption. One of the primary barriers to adopting cloud accounting for SMEs is the lack of digital literacy. Many small business owners and their employees, especially in rural or semi-urban areas, may not be familiar with cloud-based technologies. This knowledge gap creates resistance to change, as users are apprehensive about navigating unfamiliar systems. Training employees and overcoming this resistance can require additional time and resources, further complicating the adoption process.

Financial constraints are another significant challenge. Although cloud accounting operates on a subscription model that eliminates hefty upfront costs, SMEs with tight budgets may still find it difficult to allocate funds for recurring subscription fees. This is particularly true for micro and small enterprises operating with minimal margins. Additionally, businesses may incur costs for training employees or integrating cloud accounting with existing systems, further adding to the financial burden.

Data security concerns also pose a significant hurdle for SMEs considering cloud accounting. Many small business owners are wary of storing sensitive financial information on external servers, fearing potential data breaches or cyberattacks. While cloud accounting platforms typically offer robust security measures, the perception of risk can deter businesses from adopting these solutions. Furthermore, SMEs may lack the technical expertise to evaluate the security features of various providers, making it harder for them to trust cloud solutions.

Another challenge is the reliability of internet connectivity, particularly in rural or remote areas of India. Cloud accounting requires stable and high-speed internet access to function effectively, but many SMEs in these regions struggle with inconsistent connectivity. Slow or unreliable internet can disrupt real-time data access and lead to operational inefficiencies, undermining the very benefits of cloud accounting.

Integration with existing systems can also be a daunting task for SMEs. Many businesses rely on legacy systems or manual processes for managing their finances. Transitioning to a cloud-based system often requires migrating data, which can be a complex and time-consuming process. Compatibility issues between the new cloud accounting platform and existing tools can further complicate the integration, creating resistance among businesses already wary of change. Cultural resistance to change is another obstacle. Many SME owners and employees are accustomed to traditional accounting methods, including manual bookkeeping or desktop-based software. Convincing them to embrace a completely new system requires significant effort, as it involves altering long-standing workflows and habits. This resistance is often fuelled by fears of technology replacing human roles, leading to apprehension about job security. Lastly, the wide variety of cloud accounting solutions available in the market can be overwhelming for SMEs. Choosing the right platform that aligns with their specific needs and budget requires careful evaluation, which many SMEs may lack the expertise to undertake. Poor selection can lead to dissatisfaction with the system, further discouraging cloud adoption.

Popular Cloud Accounting Solutions in India

As cloud accounting becomes increasingly essential for small and medium enterprises (SMEs) in India, several cloud-based accounting software solutions have emerged to cater to the diverse needs of

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businesses across the country. These platforms provide SMEs with an accessible and efficient way to manage their finances, automate processes, and comply with regulatory requirements like Goods and Services Tax (GST). Here are some of the most popular cloud accounting solutions in India:

TallyPrime

Tally Solutions, one of the most well-known names in the Indian accounting software market, has transitioned to cloud accounting with TallyPrime. While Tally has traditionally been known for its desktop software, the cloud-based version of TallyPrime allows businesses to access their accounting data from anywhere, at any time. TallyPrime integrates seamlessly with GST compliance, invoicing, and financial reporting features, making it a popular choice for SMEs looking for a comprehensive accounting solution. The software is user-friendly, ensuring minimal learning curves, and offers features like inventory management, payroll, and banking.

Zoho Books

Zoho Books is a comprehensive cloud accounting solution that caters to businesses of all sizes, with a particular focus on SMEs. It offers an array of features, including invoicing, expense tracking, GST compliance, inventory management, and bank reconciliation. Zoho Books integrates easily with other Zoho products, such as Zoho CRM and Zoho Inventory, providing businesses with a unified platform for their financial and operational needs. The platform is also known for its user-friendly interface, multi-currency support, and mobile app, which enhances accessibility for SMEs.

QuickBooks Online

QuickBooks, developed by Intuit, is one of the most widely used cloud accounting solutions in India. QuickBooks Online offers a robust suite of features, including invoicing, expense tracking, inventory management, GST compliance, and financial reporting. It is known for its ease of use, automation of repetitive tasks, and scalability, making it suitable for SMEs at various stages of growth. QuickBooks also offers integration with popular third-party apps and services, enabling businesses to customize the software to meet their specific needs.

FreshBooks

FreshBooks is another popular cloud accounting solution that is particularly suited for service-based businesses, freelancers, and small businesses. It provides a user-friendly interface and essential features like time tracking, invoicing, expense management, and reporting. FreshBooks also supports multi-currency transactions, making it ideal for businesses that deal with international clients. With its easy-to-navigate dashboard, FreshBooks simplifies accounting tasks and allows SMEs to manage their finances without a steep learning curve.

Busy Accounting Software

Busy Accounting Software is a popular choice for Indian businesses that require a comprehensive solution with advanced features. Busy offers a cloud-based version that integrates GST compliance, invoicing, inventory management, financial reporting, and multi-location stock management. The software is particularly favored by manufacturing, trading, and retail businesses due to its powerful inventory management capabilities. It also supports multi-user access, making it a good option for businesses that require collaboration across different departments or locations.

Marg ERP

Marg ERP is a well-known accounting and enterprise resource planning (ERP) solution that offers cloud-based services for SMEs in India. It is widely used by businesses in the retail, wholesale, and distribution sectors. Marg ERP provides features such as GST billing, inventory management, financial accounting, and reporting. Its cloud-based offering allows businesses to manage their

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accounting processes from anywhere, while ensuring compliance with Indian tax laws. Marg ERP also offers industry-specific solutions for sectors like pharmaceuticals, textiles, and FMCG, making it a versatile choice for SMEs.

Xero

Xero is an international cloud accounting platform that has gained traction among Indian SMEs, particularly those in the service and tech sectors. Xero offers a range of accounting features, including invoicing, bank reconciliation, financial reporting, and payroll. The software is known for its user-friendly interface and robust integration with third-party applications, such as payment gateways, e-commerce platforms, and customer relationship management (CRM) tools. Xero's mobile app allows business owners to access their financial data on the go, further enhancing flexibility and mobility for SMEs.

ClearTax

ClearTax is an Indian-based cloud accounting platform that specializes in simplifying GST compliance for SMEs. In addition to GST filing, ClearTax offers features like invoicing, expense management, and financial reporting. It is especially popular among small businesses that need an affordable, simple solution for tax filing and compliance. ClearTax integrates with several banking systems and payment gateways, ensuring a seamless flow of data between various business processes. The platform's focus on GST compliance has made it a trusted solution for Indian SMEs that need to stay up to date with evolving tax regulations.

Khatabook

Khatabook is an increasingly popular cloud-based accounting solution that caters to micro and small businesses in India. It is primarily used by traders and shop owners to manage transactions, track expenses, and send invoices. Khatabook's simplicity and mobile-first approach make it particularly attractive for businesses that do not have an accounting background or the resources to invest in complex accounting software. The app is free to use, making it a low-cost entry point for businesses just starting to digitize their financial records.

Vyapar

Vyapar is a user-friendly accounting software designed for SMEs, especially those in retail, wholesale, and manufacturing sectors. Vyapar offers cloud-based invoicing, inventory management, GST-compliant billing, and financial reporting features. It also includes a mobile app that allows business owners to create invoices, track expenses, and manage stock on the go. The platform's simplicity and affordability make it a popular choice among small businesses that need a straightforward accounting solution.

Conclusion

Cloud accounting represents a transformative leap forward for small and medium enterprises (SMEs) in India, offering a cost-effective, efficient, and scalable solution for managing finances in an increasingly digital economy. Its ability to streamline accounting processes, ensure compliance with regulatory frameworks like GST, and provide real-time financial insights has made it an indispensable tool for modern businesses. Despite challenges such as cybersecurity concerns, digital literacy gaps, and initial resistance to change, the benefits of cloud accounting far outweigh its limitations. As India continues to embrace digital transformation, driven by government initiatives and technological advancements, the adoption of cloud accounting solutions is poised to grow exponentially. The future of cloud accounting in India lies in its integration with emerging technologies like artificial intelligence, blockchain, and machine learning, which will make financial management smarter, more secure, and efficient. With tailored solutions for different industries and increasing accessibility in tier-2 and tier-3

cities, cloud accounting is set to democratize financial management for businesses across the country. For SMEs, embracing cloud accounting is not just an option but a necessity to remain competitive and agile in today's fast-paced business environment. By overcoming the initial hurdles and leveraging the full potential of cloud accounting, SMEs in India can unlock new opportunities for growth, efficiency, and success in the digital age.

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THE ROLE OF CORPORATE RISK MANAGEMENT IN ENHANCING INVESTOR VALUE CREATION

By
Prof. Hetalben M. Munia
Ph.D. Research Scholar
Sheth Damodardas School of commerce, Gujarat University, Ahmedabad
&
Dr. Bhavesh A. Lakhani
Associate Professor
Gujarat Arts and Commerce College, Gujarat University, Ahmedabad

Abstract

In an increasingly complex and volatile business environment, strategic risk management has emerged as a critical factor for creating long-term investor value. This article explores the pivotal role of risk management in enhancing investor confidence, ensuring financial stability, and fostering sustainable growth. By integrating risk management practices into the core business strategy, companies can effectively identify, assess, and mitigate risks that may threaten their long-term goals, while capitalizing on opportunities for innovation and expansion. The alignment of risk management with corporate governance, capital allocation, and resilience building further strengthens investor trust and ensures optimized shareholder returns. The article concludes that strategic risk management is indispensable for companies aiming to create lasting value for their investors, safeguarding them from uncertainties and positioning businesses for future success.

Keywords: Strategic Risk Management, Investor Value, Risk Mitigation, Investor, Corporate Governance, Financial Stability, Capital Allocation, Risk Assessment

Introduction

In today's highly competitive and uncertain business environment, corporate risk management has become an essential function for businesses aiming to protect and enhance their value. As organizations navigate through complex global markets, technological disruptions, regulatory challenges, and other unpredictable factors, managing risks effectively is no longer just a matter of avoiding losses. It is, instead, a critical driver of long-term success. For investors, the ability to assess and mitigate risk within a company directly influences their perception of its potential for growth and profitability. Therefore, understanding the relationship between corporate risk management and investor value creation is vital for both businesses and stakeholders. Corporate risk management involves identifying, evaluating, and addressing risks that could negatively affect an organization's ability to achieve its objectives. These risks can range from financial and operational to strategic and regulatory. By proactively managing these risks, businesses not only protect their assets but also enhance their overall performance. This, in turn, leads to greater stability, more predictable returns, and ultimately, the creation of value for investors. The function of risk management has evolved over the years from being a reactive, compliance-based activity to a proactive, strategic approach that plays a significant role in achieving business goals and creating shareholder wealth.

For investors, value creation goes beyond just the returns on their investments; it encompasses a company’s ability to manage risks and navigate uncertainties effectively. Risk is inherently tied to reward in the investment world—higher risks often come with the potential for higher returns, but they also increase the likelihood of significant losses. A well-managed risk framework can balance these competing factors, ensuring that a company’s risks are understood and mitigated to an acceptable level. Investors are more likely to place their capital in businesses that have a clear and effective risk management strategy, as it demonstrates the company’s capability to weather financial storms and seize

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opportunities despite challenges. Moreover, as investors increasingly focus on long-term value creation rather than short-term gains, companies that integrate robust risk management practices into their strategies stand out. Investors tend to favor businesses that not only safeguard against potential pitfalls but also capitalize on new growth opportunities in a controlled and sustainable manner. As a result, corporate risk management is no longer viewed as an ancillary function but as a central lever in driving investor confidence and enhancing shareholder value. This growing recognition highlights the need for businesses to implement comprehensive risk management frameworks that align with their strategic goals and investor expectations. In the following sections, this article will explore the integral role of corporate risk management in enhancing investor value creation. It will examine how companies' risk management practices influence investor confidence, financial performance, and long-term growth, providing both theoretical insights and practical examples to demonstrate the critical connection between risk management and value creation for investors.

Understanding Corporate Risk Management

Corporate risk management is the process through which businesses identify, assess, and mitigate risks that may hinder their ability to achieve their strategic objectives. In a rapidly changing global landscape, organizations are constantly exposed to a variety of risks—financial, operational, market, regulatory, and reputational, to name a few. The goal of risk management is not merely to avoid these risks but to manage them in a way that minimizes negative impacts while seizing opportunities for growth and innovation. As businesses grow and expand, they face increasing complexities that require a systematic approach to safeguard their operations, assets, and shareholder value. At its core, corporate risk management involves a structured process that begins with identifying potential risks. This includes both internal and external factors that could affect the company. External risks might include economic downturns, shifts in market demand, or regulatory changes, while internal risks could involve operational inefficiencies, financial mismanagement, or human resource issues. Once risks are identified, the next step is to assess their potential impact and likelihood. This assessment allows organizations to prioritize which risks need immediate attention and which can be monitored over time.

Once risks are evaluated, businesses develop strategies to mitigate them. These strategies can range from transferring risk (such as through insurance or outsourcing) to reducing risk (e.g., by improving operational processes or compliance with regulations), avoiding risk (by changing business practices or market approaches), or even accepting certain risks when the potential reward outweighs the risk involved. Effective risk management is about striking the right balance—taking calculated risks that align with the company's strategic objectives while minimizing exposure to catastrophic events that could jeopardize the business's survival. Risk management is an ongoing process that involves continuous monitoring and review. As the business environment evolves, so too do the risks that organizations face. For example, the rise of digital technologies has introduced new cybersecurity threats, while shifting geopolitical landscapes can create financial uncertainties. To stay ahead of potential risks, companies must remain flexible and proactive, regularly assessing the effectiveness of their risk management frameworks and making adjustments as needed.

In addition to its operational aspects, corporate risk management has increasingly become a strategic tool. By anticipating risks and implementing strategies to deal with them, companies can better position themselves to take advantage of opportunities while mitigating potential losses. A company that is adept at risk management is more likely to navigate uncertainties successfully, ensuring long-term sustainability and profitability. This not only protects the company but also contributes to the creation of investor value by providing more predictable and stable returns. The importance of effective corporate risk management cannot be overstated in today's business environment. It is no longer just a compliance requirement or a reactive measure to external threats; it is an essential component of strategic planning that helps organizations achieve their business objectives while protecting the interests of shareholders

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and investors. As we will explore further, companies that integrate risk management into their core strategy are better positioned to enhance investor confidence and drive long-term value creation.

Literature Review

Rawal and Kapil (2018) conducted a systematic literature review focusing on the selection determinants and value creation in private equity investments. Their study identified key factors influencing investment decisions, such as market potential, financial performance, and management competence. They found that private equity firms create value through strategic initiatives, operational improvements, and financial restructuring. The research emphasized the importance of aligning investment strategies with firm capabilities to enhance investor value.

Hamidi (2019) explored perspectives from board research and practice in small and medium-sized enterprises (SMEs) concerning value creation. The study highlighted that effective board governance, characterized by diverse expertise and active engagement, plays a crucial role in driving strategic decisions that enhance firm value. Hamidi emphasized the need for SMEs to establish robust governance structures to facilitate sustainable value creation for investors.

Abdullah et al. (2019) examined how improving accountability and leveraging dynamic capabilities contribute to value creation in public interest companies. Their empirical study revealed that organizations with transparent accountability mechanisms and the ability to adapt to changing environments are better positioned to create value for stakeholders. The research suggested that fostering a culture of continuous learning and adaptability is essential for sustaining investor value.

Battisti et al. (2020) conducted a systematic literature review of international studies on strategic approaches to value investing. They identified various strategies, including fundamental analysis and contrarian investing, that have been effective in generating superior returns. The study concluded that disciplined investment approaches grounded in thorough analysis are instrumental in creating long-term value for investors.

Bhatt (2021) performed an empirical study on shareholder value creation within selected Indian IT companies listed on the National Stock Exchange. The findings indicated that firms focusing on innovation, efficient resource utilization, and customer satisfaction tend to achieve higher shareholder value. The research underscored the significance of strategic management practices in driving investor value in the technology sector.

The Connection between Risk Management and Investor Value

In the world of investment, value creation is not solely determined by the financial performance of a company, but also by the company's ability to navigate risks effectively. Risk management, therefore, plays a pivotal role in influencing how investors perceive a company's long-term potential. Investors seek stability and predictability, and the ability of a company to mitigate and manage risks directly impacts its financial stability, profitability, and overall market valuation. By reducing the likelihood of unexpected events that could harm the business, risk management helps to foster a more secure investment environment, which in turn enhances investor value. Investor value is multi-dimensional and encompasses more than just financial returns. It is shaped by a combination of elements, including capital appreciation, dividends, and the overall financial health of the company. Effective risk management directly influences each of these factors. When companies manage risks well, they create a more stable and predictable business environment, which translates into a steady cash flow and sustainable earnings over time. This consistency in earnings is particularly attractive to investors, as it reduces the uncertainty surrounding the future profitability of the business. As a result, companies that

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excel in managing risks can generate a higher level of investor confidence, leading to increased demand for their stock, ultimately driving up the company's market value.

Moreover, risk management is essential for protecting shareholder equity. Market volatility, regulatory changes, operational disruptions, and economic downturns are just a few of the many potential risks that could adversely affect the financial health of a company. When a company has a well-defined risk management strategy in place, it can proactively address and mitigate these risks, preventing significant losses that could erode shareholder value. For example, during times of economic uncertainty, companies with robust risk management frameworks are better positioned to make informed decisions, avoid overexposure to high-risk assets, and protect their revenue streams. In this way, risk management serves as a protective mechanism for the capital that investors have committed to the business, ensuring that their investments are shielded from unforeseen and catastrophic events. In addition to safeguarding against downside risks, effective risk management also helps companies identify opportunities for growth and value creation. Risk and opportunity often go hand in hand—companies that take calculated risks to enter new markets, launch innovative products, or adopt new technologies can potentially create significant value for investors. A solid risk management framework enables companies to assess these opportunities critically, determining whether the potential rewards outweigh the risks involved. By making strategic, well-informed decisions, companies can unlock new avenues for growth that enhance investor returns. For example, companies that invest in emerging technologies may face risks, but those that can manage these risks while capitalizing on the opportunities may achieve greater market share and profitability, ultimately leading to higher stock prices and dividends for shareholders. The relationship between risk management and investor value is also reflected in the cost of capital. Investors typically require a higher return for investing in companies that are perceived to have higher levels of risk. However, when companies demonstrate a strong ability to manage and mitigate risk, they are often viewed as less risky by the market. This perception allows these companies to lower their cost of capital, as investors are more willing to accept lower returns for lower levels of risk. Over time, this can lead to increased access to capital at favourable terms, enabling the company to fund expansion and investment initiatives that further enhance shareholder value.

Ultimately, the connection between risk management and investor value is rooted in the ability of a company to achieve sustainable and profitable growth while minimizing the volatility that can create uncertainty for investors. By implementing effective risk management practices, companies not only protect their assets and revenue streams but also position themselves for long-term success, which is the foundation for sustained investor value creation. Investors are more likely to support companies that manage risks effectively, knowing that these businesses are better equipped to adapt to changing market conditions and capitalize on growth opportunities, ensuring that their investments continue to generate positive returns.

Enhancing Investor Confidence Through Risk Management

Investor confidence is crucial to the long-term success of any company. Without investor confidence, a business may struggle to raise capital, grow, or even maintain its operations effectively. One of the key drivers of investor confidence is a company's ability to manage risks effectively. As the business landscape becomes increasingly volatile due to factors such as economic fluctuations, geopolitical instability, regulatory changes, and technological advancements, investors need assurance that the companies they invest in are capable of identifying, assessing, and mitigating potential risks. Effective risk management strategies help create this assurance by demonstrating that the company is well-prepared to handle uncertainties, protect shareholder interests, and continue on a path of growth and profitability. One of the most important ways that risk management enhances investor confidence is by increasing transparency. Companies that clearly communicate their risk management strategies and demonstrate their ability to anticipate and address risks are viewed more favourably by investors.

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Transparency about potential risks and the measures being taken to mitigate them shows that the company is actively monitoring the external and internal environments, rather than simply reacting to issues as they arise. This openness allows investors to make more informed decisions, which builds trust and strengthens the overall relationship between the company and its stakeholders. Investors are less likely to be caught off guard by unexpected losses or disruptions, which can significantly impact share prices and dividend payouts.

Moreover, companies that effectively manage risks provide a sense of stability and reliability, even in times of uncertainty. For example, when markets experience downturns or when unexpected events like the COVID-19 pandemic occur, companies with well-established risk management frameworks are better equipped to adapt and weather the storm. These companies are likely to have contingency plans in place, such as emergency funds, diversified portfolios, or flexible operations, that allow them to continue functioning smoothly despite external disruptions. When investors see that a company can operate through such challenges with minimal negative impact, their confidence in the company's ability to deliver stable returns is reinforced. This stability is particularly attractive to long-term investors who are looking for reliable, risk-adjusted returns rather than short-term speculative gains. Another way risk management enhances investor confidence is by demonstrating a proactive approach to compliance and governance. Companies that comply with regulatory standards and proactively address potential legal or ethical issues are less likely to face costly lawsuits, fines, or reputational damage. Investors value companies that demonstrate strong corporate governance and adhere to ethical business practices, as this reduces the likelihood of scandals or legal challenges that could diminish shareholder value. Risk management, in this context, acts as a safeguard against the reputational and financial risks that come with non-compliance, giving investors greater assurance that their investments are protected from such liabilities. Effective risk management also ensures that a company is prepared to seize opportunities in a controlled manner. While managing risks primarily aims to minimize negative outcomes, it also allows companies to take calculated risks that can lead to growth and innovation. For investors, this balance between risk and opportunity is key to long-term value creation. Companies that are cautious yet bold in their risk-taking can enter new markets, develop innovative products, or invest in emerging technologies—all while managing the associated risks. When investors see that a company is capable of striking this balance, they are more likely to trust that the company is well-positioned for future growth and expansion.

Additionally, companies that manage risks well often enjoy a lower cost of capital, which further enhances investor confidence. Investors generally seek a premium for taking on higher levels of risk. However, businesses with effective risk management strategies are perceived as lower-risk investments, which can lead to a reduction in the risk premium required by investors. This perception can lower the company's cost of capital, making it easier and more affordable to raise funds for expansion or new projects. Lowering the cost of capital not only boosts the company’s financial flexibility but also enhances the potential for future growth, benefiting investors who are looking for sustainable returns.

Strategic Risk Management for Long-Term Investor Value Creation

Strategic risk management is an integral component of a company’s long-term growth strategy, playing a pivotal role in creating sustained investor value. Unlike traditional risk management, which focuses on mitigating day-to-day operational risks, strategic risk management involves the identification, assessment, and management of risks that could potentially impact the company’s ability to achieve its long-term goals and objectives. By aligning risk management with the company’s overall strategic vision, businesses can navigate uncertainties and challenges while positioning themselves to seize opportunities for growth, thus maximizing investor value over time. At the heart of strategic risk management is the ability to identify and evaluate risks that have the potential to derail the company’s long-term vision. These risks could include external threats, such as market disruptions, regulatory

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changes, or economic recessions, as well as internal risks like poor leadership decisions, operational inefficiencies, or misalignment of resources. By proactively assessing these risks, companies can develop strategies that reduce the likelihood of adverse outcomes, allowing them to remain on track toward achieving their strategic goals. For investors, this proactive approach signals that the company is focused on long-term success and is less likely to be derailed by unforeseen events. This, in turn, creates a sense of stability and confidence, which is critical for attracting and retaining investors who are seeking sustainable returns.

One of the key benefits of strategic risk management is that it helps companies align risk-taking with their growth opportunities. While avoiding risks altogether is not always practical or desirable, strategically managed risks can drive innovation, expansion, and market leadership. For instance, companies that embrace technological advancements, enter new markets, or launch new products may face risks, but these actions are often necessary for staying competitive and achieving long-term growth. Strategic risk management ensures that these risks are well-calculated, with appropriate safeguards in place to minimize the likelihood of failure. By demonstrating a balanced approach to risk-taking, companies can create long-term value for investors by positioning themselves as leaders in their respective industries while minimizing exposure to potentially devastating risks. Strategic risk management also enables companies to build a resilient organizational structure that can adapt to changing market conditions. The business environment is constantly evolving, and companies must be able to pivot quickly in response to new challenges or opportunities. This adaptability is a critical component of long-term value creation. Businesses that have robust risk management frameworks in place are better equipped to handle unforeseen disruptions, such as changes in consumer behaviour, economic downturns, or supply chain challenges. For investors, knowing that a company is agile and able to quickly recover from setbacks enhances confidence in the company's ability to thrive in the long term. This sense of resilience is particularly important in industries that are highly dynamic, where companies must continuously innovate and adjust their strategies to maintain a competitive edge. Furthermore, strategic risk management aligns risk management efforts with governance and corporate responsibility, enhancing the company's reputation and fostering greater trust with investors. Companies that prioritize ethical business practices, environmental sustainability, and social responsibility are increasingly favoured by investors who value responsible corporate behaviour. Risk management, in this context, includes identifying and mitigating risks related to regulatory compliance, reputational damage, and environmental impact. By effectively managing these risks, companies not only protect themselves from potential legal and financial liabilities but also create long-term value by strengthening their reputation and brand equity. Investors who recognize a company's commitment to sustainable and responsible practices are more likely to view it as a reliable and attractive investment, leading to enhanced shareholder value.

Strategic risk management also plays a significant role in optimizing capital allocation, which directly influences long-term investor value. Companies with a clear understanding of the risks and opportunities they face can make more informed decisions regarding capital expenditures, investments, and resource allocation. For example, a company may choose to allocate capital toward a new technology initiative or expansion into a promising market, but only after evaluating the associated risks and ensuring that the potential return justifies the investment. This disciplined approach to capital allocation allows companies to make strategic decisions that create value for investors while avoiding unnecessary risks that could erode shareholder wealth. Additionally, companies that integrate strategic risk management into their decision-making processes often experience a lower cost of capital. By demonstrating a well-structured and proactive approach to managing risks, these companies are seen as lower-risk investments by the market. As a result, investors are more willing to provide capital at more favourable terms, enabling the company to access funding at a lower cost. Over time, this reduced cost of capital can significantly enhance the company's financial performance and increase investor returns.

Conclusion

In today's dynamic and unpredictable business environment, effective risk management has become a crucial element in ensuring long-term investor value creation. Through strategic risk management, companies can safeguard their assets, mitigate potential threats, and identify opportunities for growth, all of which contribute to enhanced financial stability and sustainability. By aligning risk management practices with broader business strategies, companies are better equipped to navigate uncertainties, make informed decisions, and adapt to changing market conditions, ultimately fostering a secure and prosperous environment for investors. Investor confidence is deeply tied to how well companies manage risks. When businesses demonstrate a proactive approach to identifying, assessing, and mitigating risks, investors are more likely to view them as stable, reliable, and capable of achieving sustained growth. This, in turn, leads to increased investor trust and a higher willingness to commit capital, resulting in favourable conditions for long-term value creation. Whether through protecting shareholder equity, reducing the cost of capital, or capitalizing on calculated risks, strategic risk management enhances both operational performance and market perception, making it an essential component for companies aiming to maximize investor value. Ultimately, companies that invest in robust risk management frameworks not only shield themselves from potential disruptions but also create a foundation for future growth and success. By integrating risk management into their core strategy, businesses are better positioned to seize opportunities, weather challenges, and enhance their long-term profitability, all of which are fundamental to driving investor value. As risk continues to be an inherent part of the business landscape, strategic risk management will remain a cornerstone for any company seeking to secure its future and create lasting value for its investors.

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ACCOUNTING INFORMATION SYSTEM AND PROFITABILITY: AN EMPIRICAL STUDY

By
Mahera Saiyed
&
Dr. Ronak Rana

Abstract

An accounting information system is the framework through which a business collects, stores, manages, processes, retrieves, and communicates its financial data. This system is crucial for stakeholders including owners, accountants, advisors, business analysts, managers, chief financial officers, auditors, and regulatory and tax agencies. Integrated within a company's broader information systems, it plays a pivotal role in facilitating organizational decision-making, tailored to fit the business's specific environment, structure, and operational requirements. The significance of accounting information in decision-making cannot be overstated. Managers heavily rely on this information to navigate financial and economic challenges, ultimately impacting the organization's sustainability. Key accounting tools such as cost accounting systems, management accounting systems, and pricing strategies provide essential insights that empower managers to make informed financial decisions. Research further underscores the critical link between effective Accounting Information Systems (AIS) implementation and organizational profitability. This study specifically examines how AIS influences and enhances the profitability levels of enterprises, shedding light on its transformative role within modern business environments.

Key Words: Accounting information system, decision making, Profitability.

Introduction

Over the years, the field of accounting has undergone significant advancements, evolving from basic single-entry systems to the more intricate double-entry system. While traditionally focused on providing essential financial data such as purchases, sales, expenses, and income, modern accounting practices now play a multifaceted role in today's business landscape. Beyond historical profit and loss assessments, contemporary accounting is instrumental in driving organizational profitability through sophisticated accounting information systems.

In today's dynamic business environment, transactions generate crucial data that is pivotal for comprehensive analysis of business performance. The accounting information system functions as a robust delivery mechanism, encompassing the entire process from data input and compilation to the systematic reporting of financial transactions. This framework not only supports informed decision-making but also facilitates strategic planning and operational efficiency within organizations.

Accounting serves as a vital system that supplies information to a variety of stakeholders. Its primary objective is to communicate the financial performance and position of a business to its owners. This information also holds significantvalue for investors, auditors, suppliers, buyers, bankers, and other financial entities. However, the greatest relevance of accounting lies within the organization itself. Every decision within a business involves assessing multiple alternatives, and accounting information plays a crucial role in guiding these choices.

Accounting is a structured process through which managers maintain records and generate financial statements. In management, key responsibilities include planning, organizing, leading, supervising, controlling, and decision-making. The Accounting Information System (AIS) stands out as one of the cornerstone systems within any organization. Its purpose is to furnish managers at all levels with essential information, enabling them to fulfill their duties effectively and efficiently. This information supports strategic planning, performance monitoring, control processes, and informed decision-making.

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Objectives of the study:

- To assess the role of AIS in improving organizational performance and profitability.
- To evaluate the effectiveness of AIS in supporting strategic decision-making.
- To investigate the relationship between AIS, Financial management, and organizational profitability.
- To examine the impact of AIS on operational efficiency and productivity.
- To develop a framework for implementing AIS to enhance organizational profitability.

Literature Review

Hassan Gofwan (2019) conducted a study on the impact of Accounting Information Systems (AIS) on firm financial performance, highlighting AIS as crucial for maintaining competitive advantage in today's technologically advanced and customer-driven business environment. The study, using an empirical literature review approach, concludes that IT-enabled AIS significantly enhances financial transaction tracking, decision-making, internal controls, and financial reporting quality. It emphasizes the ongoing importance of AIS utilization for sustaining organizational productivity and effective performance.

Smt. Bhavna Patel (2015) investigated the impact of accounting information systems (AIS) on organizational profitability. The study defines AIS as a framework that businesses employ to collect, store, process, retrieve, and report financial data, benefiting various stakeholders such as owners, accountants, advisors, analysts, managers, CFOs, auditors, and regulatory bodies. AIS integrates with a company's broader information systems to support decision-making tailored to organizational needs and environments. Specific accounting tools like cost accounting, management accounting, pricing, and profitability analysis provide crucial information for financial and economic decision-making by managers. The research aims to establish a connection between AIS utilization and organizational profitability, focusing on evaluating how AIS influences the profitability levels of enterprises.

Accounting Information System

An accounting information system (AIS) is a critical information subsystem within an organization. It gathers data from the entity's various subsystems and conveys it to the organization's information processing subsystem. Traditionally, the AIS has focused on collecting, processing, analyzing, and communicating financial information to external stakeholders such as investors, creditors, bankers, and tax agencies, as well as internal stakeholders like management and owners. Nowadays, the AIS also handles non-financial information in addition to financial data.

Today, accounting information systems (AIS) are often sold as prebuilt software packages from vendors like Microsoft, SAP, and Oracle, which are then customized to fit business processes. There is a growing need for connectivity and consolidation between various business systems, leading to the integration of AIS with larger, centralized systems known as enterprise resource planning (ERP). The main function of AIS is to assign quantitative value to past, present, and future business events. Using computerized accounting systems, AIS produces financial statements, such as profit statements, flow statements, and balance sheets. The system processes data and transforms it into accounting information, which is used by a wide variety of internal and external users during the input, processing, and output stages. An effective AIS performs several key functions, including data collection, maintenance, control, and information generation.

Qualities of Good Accounting Information System:

An accounting information system (AIS) should be effective and efficient, providing accurate and consistent information on time. It focuses on delivering accounting information through the optimal use of resources. A good AIS provides data as needed to both internal and external stakeholders associated with the organization. The information is accurate and complete due to the use of various accounting software for recording business transactions. It complies with laws, regulations, and agreements,

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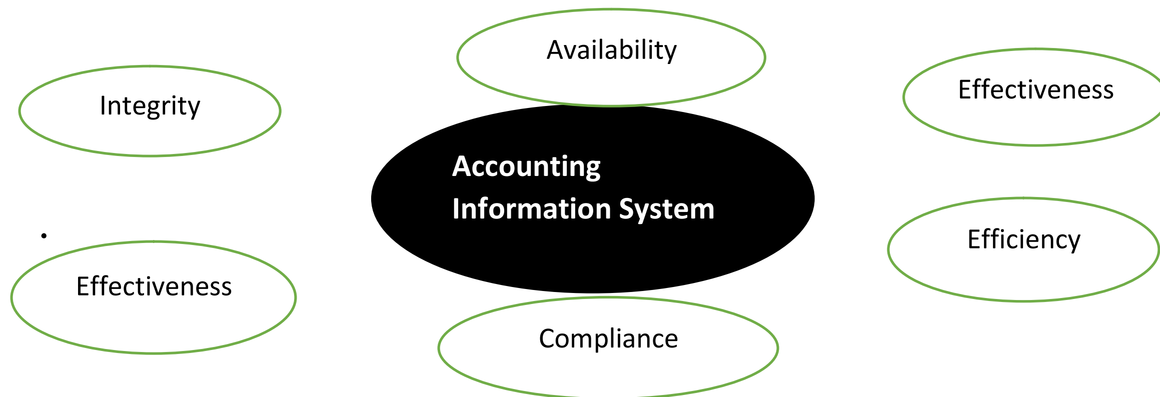
adhering to internal policies and external criteria. A good AIS also maintains confidentiality, protecting sensitive accounting information from unauthorized disclosure.



Association between Accounting Information Systems and Profitability:

An accounting information system (AIS) is highly valuable for every business as it provides essential information for planning and preparing accounts, and allows for necessary adjustments as required. These systems make accounting activities more efficient by offering faster, accurate, and timely records and analysis of financial statements. Organizations with an AIS benefit from accurate, error-free records and reliable future predictions for business growth and profitability. These systems automate the process of gathering and computing necessary data for transactions, saving time and ensuring precision. However, implementing such a system requires significant investment and time to realize the long-term benefits.

Traditionally, the industrial economy required companies to measure accounting elements based on historical cost, determined from past transactions. Modern AIS have evolved to use various measurement methods, including historical cost-based value, fair value, market value, and replacement value. A multi-measurement model complements these methods. While historical costs are reflected in both traditional and modern systems, present value factors now enable these systems to reflect current values. Different fields utilize various accounting value forms, using historical cost accounting and reporting systems to measure fair value in other financial-based cost management systems, which directly impacts profitability.

In managing an organization and implementing an internal control system to achieve high profitability, an accounting information system (AIS) is crucial. In the field of accounting, the primary question is why accounts are necessary. The common answer is to determine the profit or loss of the business and to obtain related business information. However, a good AIS also assists management in making various business decisions. AIS is vital for all organizations due to its five key features: improving decision-making processes, ensuring the quality of accounting information, evaluating performance, maintaining effective internal control, and facilitating day-to-day transactions.

Effects of Accounting Information Systems on Profitability

One important assumption in the decision-making process and economic improvement is the existence of quality and timely information. Crucial information comes from accounting information systems (AIS) and financial statements. The qualitative and quantitative characteristics of accounting information include consistency, relevance, understandability, comparability, and timeliness. Decision-making is directly related to these characteristics and their consequences, ultimately affecting an organization's profitability. Effective accounting information must meet the needs of decision-makers. Accounting involves common requirements such as summarization and reporting. Under these conditions, AIS in business management control layers reflect the general principles of accounting,

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ensuring superior quality information and verifying the measurement of accounting elements, achieving significant breakthroughs.

The increased importance of portfolio management, assumed by financial analysis in new missions, tends to distance itself from the traditional accounting model but not from accounting information. Major developments in financial practice and theoretical and methodological research are likely to renew and extend this link in new directions. On the one hand, operator elections and theoretical models related to financial structure require an analysis of liabilities and their progression, highlighting the cost of capital. Theoretical and practical developments related to funding necessitate the use of general accounting data. These advancements in organizational finance, focus on new concerns, shift objectives, and redirect financial analysis towards emphasizing information, thus opening vast prospects for linking financial analysis and accounting.

Conclusion

Accounting involves verifying the legality, authenticity, and accuracy of accounting information through audits. It examines business activities and financial transactions, ensuring that revenue and expenditure are properly recorded. Accounting and accounting analysis complement each other, with data from management and production departments processed through the network directly into the accounting information system (AIS). Every employee can become both a producer and a user of accounting information, which is subject to supervision and inspection. The natural risks associated with AIS necessitate increased processing and control functions in accounting inspections.

This study evaluates the effectiveness of AIS in decision-making from various aspects, including better decision-making by managers, more effective internal control systems, improved quality of financial reports, enhanced performance measures, facilitation of financial transaction processes, and expansion of organizational profitability.

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ENVIRONMENTAL ACCOUNTING DISCLOSURE PRACTICE: AN ANALYSIS OF INDIAN TOP 9 FMCG COMPANY

By
Siddharth Mer
Shree Narayana College of Commerce, Gujarat University, Ahmedabad, Gujarat.

Abstract

The present paper is an exploratory study to understand and examine the nature and the extent of environmental accounting and reporting by the Indian FMCG company. To explore the disclosure practice, the data is taken from the business Research Responsibility and Sustainability Report, which is an annual report for the year 2022-23. The FMCG companies belong to the sub-sector of homecare commodities, food & beverages, personal care products, and health goods used daily. To examine the disclosure practices of these companies, one environmental disclosure index is made, which describes the company's seriousness in environmental disclosure and practice for sustainability and development. The EDI contains 25 items related to policies and initiatives, material consumption, energy consumption, water withdrawal from sources, and emissions. The study finds that FMCG companies have voluntarily disclosed environmental accusations and reporting information. The present study shows India's top 9 FMCG companies' awareness of the environment, sustainability, and development. In recent years, we have witnessed a rising concern for the environment, reflected in our lives. The number of organizations that publish environmental disclosures is steadily increasing, and it has a significant effect on the process by stakeholders. Consumers know sustainability and development, so they choose goods and services from companies that consider the environment. Companies also use this strategy to create brand names and increase sales.

Keywords: Environment accounting & Reporting, Environment Disclosure, Environment Issue, Environment Disclosure Index, Sustainability Development

Introduction

India's growth and progress now demand sustainable development. Current financial reporting paradigms are built upon sustainable development, which has its roots in contemporary political, social, and economic circumstances. It offers a thorough theoretical foundation for environmental indicators and their operationalization. “Social development" refers to preserving access to essential resources and enhancing each person's quality of life to realize their greatest potential. Every citizen's well-being is correlated with society's success. The future of humanity is primarily concerned with protecting the environment. It outlines how we should safeguard ecosystems, air quality, resource integrity, and sustainability while concentrating on the factors that put the environment under stress. A nation's economic growth and prosperity are significantly influenced by industrialization. In addition to creating jobs and money, it degrades the environment in several ways, including the depletion of natural resources, air, water, and soil pollution, global warming, and climatic shifts. Generally speaking, businesses are more focused on the methods of production than the environmental impact of manufacturing. Companies are subject to regulations to prevent pollution and reduce their carbon emissions. The expectations and attitudes of society have transformed the pressures placed on businesses to decrease pollution.

Environmental Accounting, a key branch of accounting, integrates environmental costs into financial decision-making. It promotes sustainable corporate practices by monitoring pollution, resource use, and ecological effects. Due to environmental concerns and more stringent regulations, it emerged in the late 20th century and offers advantages like cost savings, increased brand value, and efficiency, all of which assist firms in meeting stakeholders' expectations for sustainability. The development of communication technologies promotes environmental awareness among Indian stakeholders.

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Stakeholders are aware of the negative ecological effects of industrial operations. Given their strong inclination for environmental awareness, Indian firms are more likely to take a careful approach to environmental responsibility. The industry's impact must be measured, but the accounting system is insufficient for several reasons. A new holistic accounting system that considers corporate environmental effects was required.

Fast-moving consumer goods (FMCG) are products sold quickly and cheaply. They are also known as consumer-packaged goods (CPG). FMCG includes day-to-day products like food and beverages, toiletries, cleaning products, counter medicines, cosmetics, stationery, and consumer electronics. They are a primary source of employment, providing millions of jobs. They contribute to economic growth by generating tax revenue and creating jobs. They are essential for the growth and development of retail and distribution sectors. They prioritize a customer-centric approach to building trust.

Literature Review

Arumona, Lambe, and Ogunmakinde (2022-23) studied the impact of environmental disclosures on financial performance in Nigeria's oil and gas sector, using data from 12 companies over 10 years. The analysis showed a positive relationship between disclosures and financial metrics such as Net Profit Margin and ROA, reinforcing the economic advantages of environmental accountability.

Goyal (2022) explored the realm of corporate governance disclosures in India's energy sector and their connection to profitability metrics such as ROA and ROE. The study's key finding was the crucial role of stakeholder engagement in effective disclosure practices, which in turn, enhances transparency and the value relevance of financial reporting.

Mishra (2022) focused on environmental disclosures among Maharatna companies in India, comparing practices across sectors and exploring stakeholder perceptions. The study revealed significant variability, with some sectors outperforming others. It highlighted the critical role of disclosure quality in fostering stakeholder trust and the need for standardized reporting frameworks to improve consistency.

Probal Dutta and Anupam Dutta (2024) analyzed the relationship between corporate environmental performance (CEP) and biodiversity reporting decisions (CBRD) in Finnish companies over the period 2008–2020. Using logistic regression, they found that firms with poor environmental performance were more likely to disclose biodiversity information, aligning with legitimacy theory. The study called for mandatory biodiversity reporting to ensure consistency and comprehensiveness in disclosures.

Porchelvi (2019) conducted an exploratory study on environmental reporting practices in Indian companies. Using an Environmental Disclosure Index (EDI) comprising 25 disclosure items and text analysis, the study examined the 2017–2018 published annual reports of environmentally sensitive industries. Although many Indian businesses voluntarily share environmental information, the findings showed that disclosures range in scope and degree, with larger businesses and environmentally sensitive industries disclosing more information.

Objectives

The purpose of this study is to identify the environmental accounting and reporting procedures that Indian FMCG companies use. The Current research examines statistics on emissions, total water withdrawal, material and energy usage, and environmental policies and initiatives.

The goal of this study is given as follows:

- To determine which environmental disclosures, exist and assess the state of environmental reporting standards and Indian fast-moving consumer goods industries.
- To compare and contrast the disclosure scores that each sector has received.

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Methodology

This is an exploratory study. This study makes use of a secondary source of information. A Google search for the fiscal year 2022–2023 served as the primary source of information for the company's published annual reports. The Environmental Disclosure Index (EDI) was created following a thorough accounting and related literature review. Each of the five main areas that make up the Environmental. The Disclosure Index has five environmental-related statements or items. The environmental disclosure index comprises a total of 25 components. An attempt has been made to categorize all of the information into five distinct groups because stakeholders cannot assess a company's environmental performance solely based on certain individual items, such as energy policies, green building policies, green gas emissions, etc. It is feasible to create a disclosure index that is appropriate for gauging the level of disclosure in FMCG businesses' annual reports because they may be more uniform. A purposive sampling technique was employed to choose a sample of ten businesses from the FMCG industry. Companies offering food and beverage items, healthcare products, personal care products, and home care commodities were the focus of the current study to comprehend the reporting procedures these businesses utilize. These ten companies, which rank among the top ten in India, were chosen through the NSE's listing. A score of 0 or 1 has been allocated to each item in the EDI. An item receives a score of 1 if disclosed in the annual report. A score of 0 is assigned for non-disclosure. Each yearly report's score is then totaled. The sum indicates the grade a certain yearly report received. A maximum score of 25 has been determined to be suitable. The final step in the scoring procedure involves dividing the company's actual score by the maximum applicable score. One multiplies this quotient by 100. The company's disclosure % is the result. Businesses were not penalized for either number or quality disclosures. The primary goal was to disclose whether or not an item was included in the yearly report.

Table – 1 Environmental disclosure Index Components

Sr No.	EDI Item	Sr No.	EDI Item
1	Environmental Policies & Initiatives	14	Energy Cons Outside or both
2	Environmental management system	15	R & D and Investment in Energy & Technology
3	Plantation/ green belt / supporting forest	16	Water Withdrawal
4	Awareness &Training	17	Ground & Rain Water
5	Voluntary Initiatives; web conf.	18	Municipal Water Utilised
6	Material Non Renewable	19	Low Water source affected
7	Material Renewable	20	Water Recycled
8	Material Recycled	21	Total Env. Expenditure
9	value chain partners assessed for env. impacts	22	Legal Notice/Issues
10	Env. impact on Transport	23	NOX, SOX & GHG
11	Non-renewable Energy	24	Env Risk Grievance
12	Renewable Energy	25	Waste Disposal management
13	Intensity Ratio usage		

Sample size data is also as follows:

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Table – 2 Sample Companies and sub sectors

Sr No.	Company Name	Sub Sector
1	Hindustan Unilever Limited	Homecare Commodities
2	Varun Beverages Limited	Food & Beverages
3	Britannia Industries Limited	Food & Beverages
4	Godrej Consumer Products Limited	Personal Care
5	Dabur India Limited	Personal Care
6	Colgate-Palmolive (India) Limited	HealthCare Goods
7	P & G Hygiene and Health Care Limited	HealthCare Goods
8	Gillette India Limited	Personal Care
9	Emami Limited	Personal Care

Results and Discussion

Company wise Environmental Disclosure

The Environmental accounting and reporting of company has been presented in the following table - 3. It shows the total score obtained by the individual company and percentage value. There is total 25 items included in the Environmental Disclosure Index (EDI).

Table – 3Company wise Environmental Disclosure

Sr No.	Company	EDI (in %)
1	Hindustan Unilever Limited	100
2	Varun Beverages Limited	92
3	Britannia Industries Limited	68
4	Godrej Consumer Products Limited	76
5	Dabur India Limited	80
6	Colgate-Palmolive (India) Limited	72
7	Procter & Gamble Hygiene and Health Care Limited	52
8	Gillette India Limited	40
9	Emami Limited	64

From the table – 3 we can understand that the minimum disclosure is 40% which is done by Gillette India Limited year 2022-23.The highest disclosure is 100% from the Hindustan Unilever Ltd. They have disclosed all the items which is included in Environmental Disclosure Index. Given that the product's nature and the production method are environmentally sensitive, the sample companies are expected to provide stakeholders with more information concerning their performance in terms of the environment. The state of social responsibility and environmental commitment by Indian enterprises is displayed in the table. Most of the sample companies disclose 60 to 80 % of the items which is included in Environmental Disclosure Index.

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Disclosure on Environmental Policies and Initiatives (Category 1)

Environmental Disclosure Index include 25 items which is divided into 5 major categories. So, we have to check whether this item is disclosed by the company or not. These 5 major categories include 5 items which is related to these major categories. Table - 4 shows the 5 items which is included in category -1 which is for environment policies and initiatives.

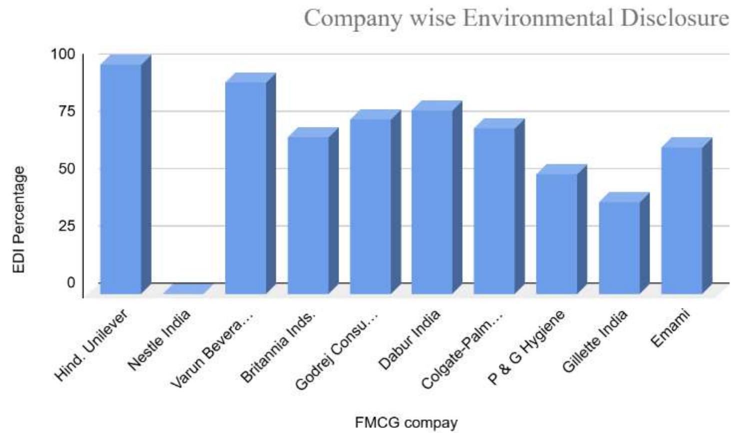
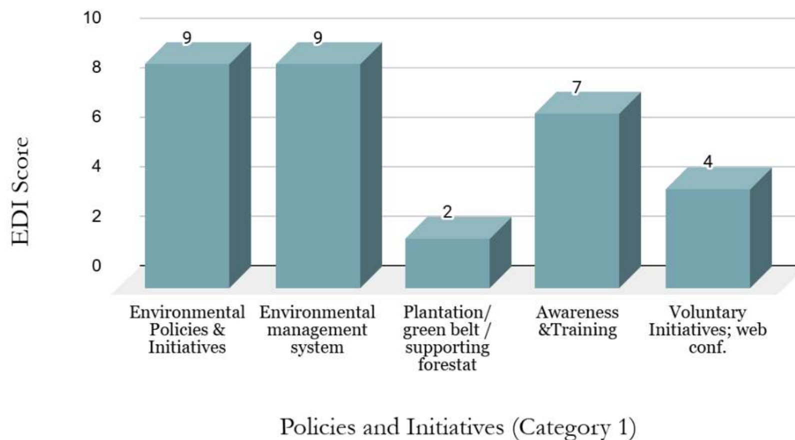


Table - 4 Disclosure on Environmental Policies and Initiatives (Category 1)

Sr No.	Categories	EDI Score
1	Environmental Policies & Initiatives	9
2	Environmental management system	9
3	Plantation/ green belt / supporting forest	2
4	Awareness &Training	7
5	Voluntary Initiatives; web conf.	4



Fg. – 2 shows the graph of Disclosure on environmental policies and initiatives the companies took. 9 out of 9 companies disclosed information about the policies and initiatives as well as the Environmental management system applied in their organization. Only 2 companies disclosed about the plantation/green belt and supporting forest in their organization. Which is very low. 7 companies disclosed their awareness and training programs for the environment and sustainability. 4 companies take

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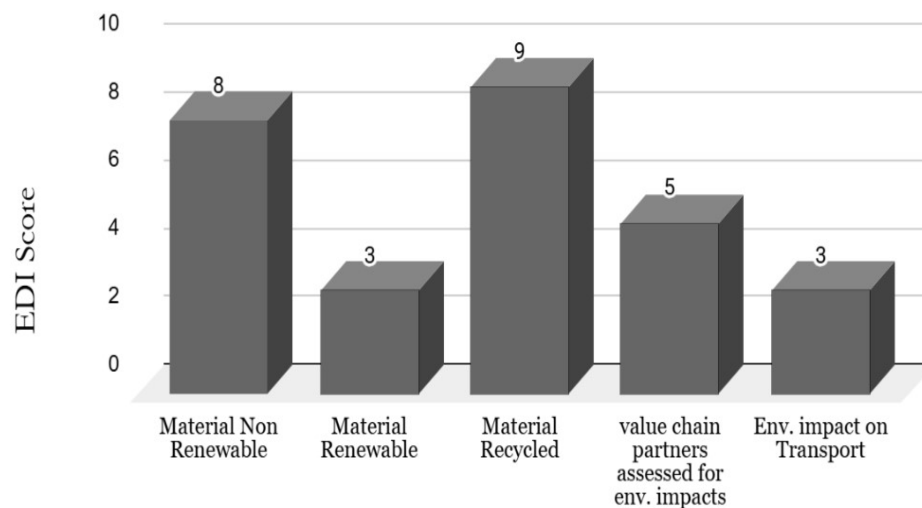
voluntary initiatives and web conferences for environmental sustainability. From the top 9 companies, the total score for category 1 is 31 out of 50.

Disclosure on Material Consumption (Category 2)

Environmental accounting disclosure papers also include material consumption by the FMCG companies. Table - 5 shows the disclosure on material consumption.

Table – 5 Disclosures on Material Consumption (Category 2)

Sr No.	Categories	EDI Score
1	Material Non-Renewable	8
2	Material Renewable	3
3	Material Recycled	9
4	value chain partners assessed for env. impacts	5
5	Env. impact on Transport	3



Out of 9 companies, 8 companies disclosed information on non-renewable material usage, 3 companies disclosed renewable material usage, 9 companies disclosed information about material recycled, 5 companies assessed the value chain partner who works with them, and 3 companies shared information about environmental impact due to transport.

Disclosure on Energy Consumption (Category 3)

The paper also includes the types of energy and development FMCG companies use. Category 3 is Disclosure on Energy Consumption, which is directly linked to Environmental accounting, reporting, and sustainable development.

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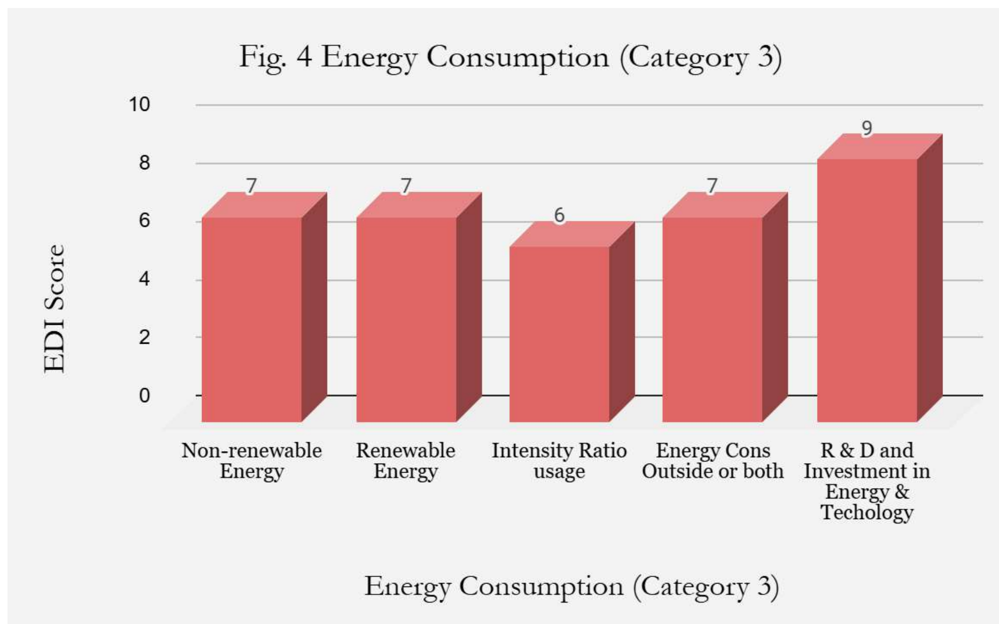
Table – 6 Disclosure on Energy Consumption (Category 3)

Sr No.	Categories	EDI Score
1	Non-renewable Energy	7
2	Renewable Energy	7
3	Intensity Ratio usage	6
4	Energy Cons Outside or both	7
5	R & D and Investment in Energy & Techology	9

Out of 9 companies, 7 disclosed their non-renewable and renewable energy usage. 6 companies disclosed their intensity Ratio, which describes how much energy is used per unit. 7 companies show their energy consumption Inside, outside & both. 9 companies invest in research & development in energy and technology departments for better development and growth, which is essential for the company.



Disclosure on water withdrawal by sources (category 4)

Water is essential for every humankind; it is the raw material for many industries, including FMCG companies. Category 4 Disclosure on water withdrawal by source and consumption.

Table – 7 Disclosure on water withdrawal by sources (category 4)

Sr No.	Categories	EDI Score
1	Water Withdrawal	9
2	Ground & Rain Water	9
3	Municipal Water Utilised	9
4	Low Water source affected	7
5	Water Recycled	8

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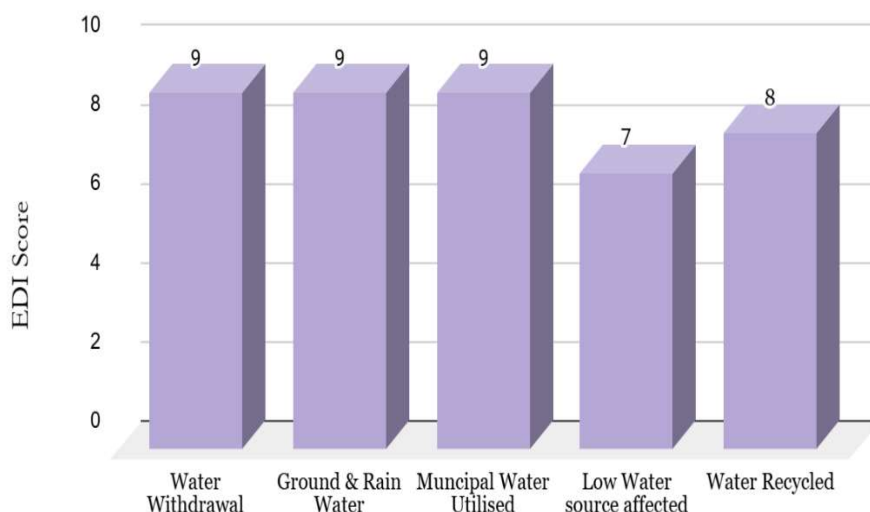
Out of 9 companies, 9 disclosed the water withdrawal, 9 companies with ground & rainwater, and 9 companies with municipal water utilized. 7 companies gave information about the low water affected, which means water discharged to the nearest water sources. And 8 companies explain how much and how they recycled the water.



Water Withdrawal By Sources (category 4)

Disclosure on Emission (Category 5)

The environment accounting disclosure is established for the emissions that pollute the environment. Here, category 5 disclosure on emissions includes data relating to emissions and the pollution that the companies do.

Table – 8 Disclosure on Emission (Category 5)

Sr No.	Categories	EDI Score
1	Total Env. Expenditure	2
2	Legal Notice/Issues	3
3	NOX, SOX & GHG	9
4	Env Risk Grievance	3
5	Waste Disposal management	7

Out of 9 companies, 2 disclosed the total environmental expenditure paid by the companies to reduce pollution. 3 companies issue legal notices on behalf of the companies, and they work with it. 9 companies give information on nitrogen oxides (NOx), Sulfur oxides (SOx), and greenhouse gas (GHG). 3 companies pay the environmental risk grievance. 7 companies explain the waste disposal management system they built, which aims to reduce the pollution and emissions in the atmosphere.

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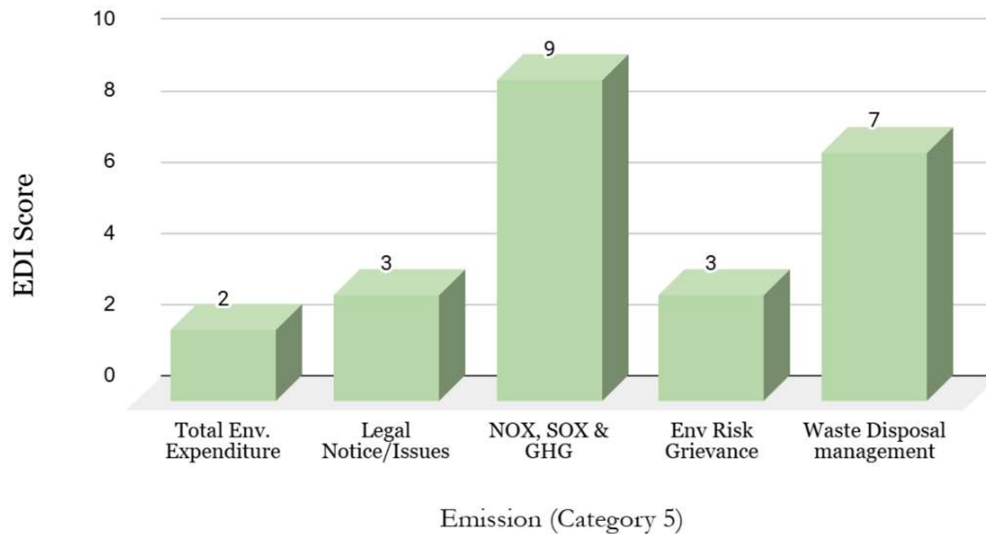

Environmental Disclosure Score Comparison

Here, the table - 9 shows the total scores of each company that the EDI found. We can see that the highest score achieved is from Hindustan Unilever Limited, 25. The Lowest score is from Gillette India Limited, which is 10.

Table – 9 Overall EDI Score

Sr No.	Company Name	Policies and Initiatives	Material Consumption	Energy Consumption	Water Withdrawal By Sources	Emission	Total EDI Score
1	Hindustan Unilever Limited	5	5	5	5	5	25
2	Varun Beverages Limited	4	4	5	5	5	23
3	Britannia Industries Limited	3	3	4	5	2	17
4	Godrej Consumer Products Limited	4	3	4	4	4	19
5	Dabur India Limited	5	3	5	5	2	20
6	Colgate-Palmolive (India) Limited	3	3	5	5	2	18
7	P& G Hygiene and Health Care Limited	3	2	2	4	2	13
8	Gillette India Limited	2	2	1	4	1	10
9	Emami Limited	2	3	5	5	1	16
Total Score		31	28	36	42	24	161

Most companies disclose information in environmental accounting and reporting. In all 25 items from 5 major categories, most companies disclosed information regarding water withdrawal by sources, 42; then energy consumption was 36, Policies and initiatives 31, Material Consumption 28, and emissions 24. So, the companies are comfortable disclosing information on water withdrawal but do not disclose information regarding emissions.

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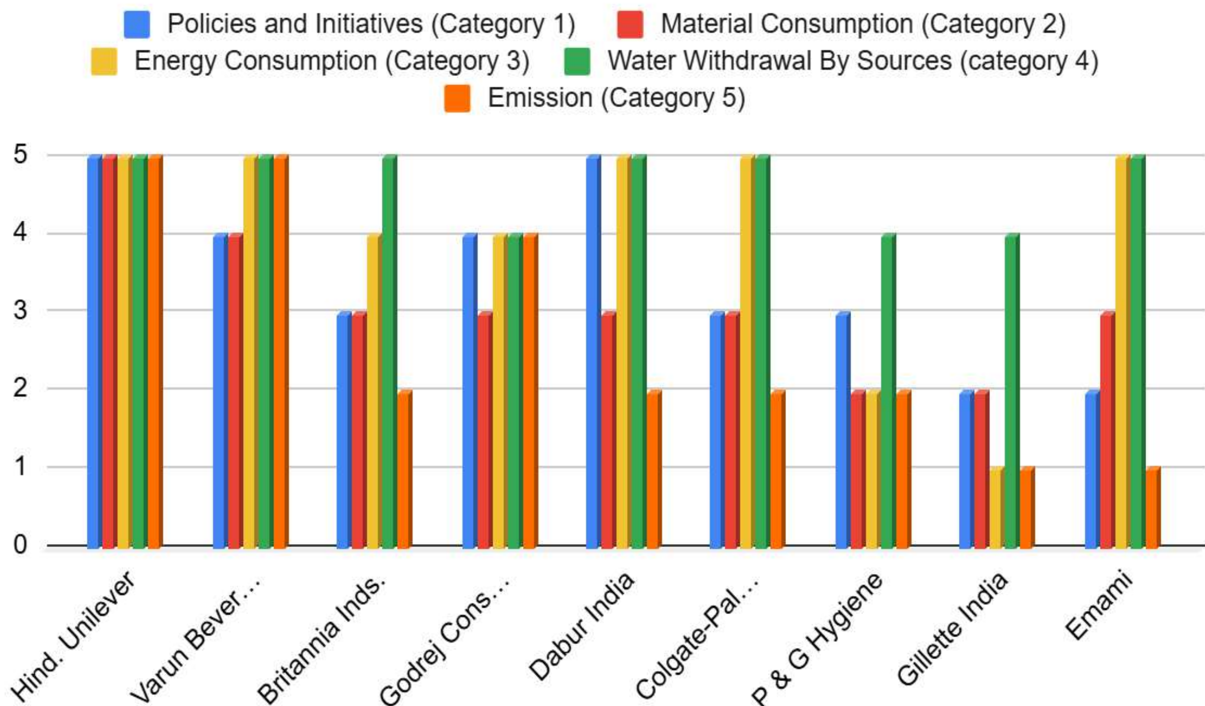

Conclusion

To summarize the paper, several features would affect environmental disclosure practices. This has been proved by the EDI scores obtained by the FMCG companies. Indian Companies are giving importance to environmental accounting and disclosure. In recent years, consumers have also been aware of sustainability development and are more interested in environmental accounting and disclosure practices by companies. Some companies don't add their explanation on detailed information in their Business Responsibility and Sustainability reports. Rather, they give detailed reports on their website, which can be found in past studies. The shareholders are interested in economic performance and social activities for the environment, which the organization does.

The present paper provides insight into the environmental performance of FMCG companies.

Future researchers can take a large sample size for FMCG companies or take more years to complete the research.

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CYBERSECURITY CHALLENGES IN FINANCIAL REPORTING AND THE PROTECTION OF DATA INTEGRITY IN THE DIGITAL ERA

By
Dr. Harsh N. Tripathi
Assistant Professor
Smt. R.D. Shah Arts and Smt. V.D. Shah Commerce College, Dholka, Ahmedabad
&
Dr.Kiritkumar R. Makwana
Associate Professor
Government Commerce College, Gandhinagar

Abstract

The digital era has revolutionized financial reporting through innovations such as cloud computing, artificial intelligence, and blockchain. These technologies enhance efficiency, accuracy, and transparency while enabling real-time insights. However, they also expose organizations to significant cybersecurity risks, including data breaches, ransomware, and insider threats, which can compromise data integrity and stakeholder trust. This study investigates the intersection of cybersecurity and financial reporting, analyzing emerging threats, regulatory frameworks, and mitigation strategies. Utilizing a mixed-methods approach, data were gathered through surveys of 102 finance and IT professionals and interviews with 20 industry experts. Findings reveal that while digital transformation enhances financial reporting capabilities, it increases susceptibility to cyberattacks, necessitating robust security measures and proactive governance. The research underscores the importance of regulatory compliance, integration of advanced technologies like AI and blockchain, and embedding cybersecurity within corporate governance frameworks to ensure data integrity and maintain confidence in financial systems. By addressing these challenges, organizations can safeguard their financial reporting processes and contribute to the resilience of broader economic systems.

Keywords: Cybersecurity, Financial Reporting, Data Integrity, Digital Transformation, Regulatory Compliance

Introduction

The digitalization of business processes has fundamentally reshaped how organizations conduct financial reporting. What once required extensive manual effort, physical documentation, and time-consuming reconciliations has now evolved into streamlined, automated processes powered by digital platforms. This transformation has ushered in numerous advantages, including increased operational efficiency, enhanced accuracy, reduced costs, and the ability to generate real-time financial insights. These advancements empower organizations to make more informed decisions, improve stakeholder communication, and maintain competitive advantages in an increasingly fast-paced global market.

Technological innovations such as cloud computing, artificial intelligence (AI), blockchain, and data analytics have become integral to modern financial reporting systems. Cloud platforms offer scalable storage and computing power, enabling companies to access financial data from anywhere in the world. AI tools assist in detecting anomalies, automating repetitive tasks, and enhancing predictive analysis, while blockchain technology ensures secure, immutable transaction records, fostering greater trust and transparency. These innovations have transformed financial reporting into a sophisticated, data-driven process that is critical for organizational success.

However, the benefits of digitalization are not without significant risks. As organizations embrace digital tools and interconnected systems, they become increasingly susceptible to cybersecurity threats. Financial reporting involves the handling of highly sensitive information, including revenue figures, expense reports, corporate performance data, and proprietary strategies. This makes financial systems

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attractive targets for cybercriminals, who exploit vulnerabilities to gain unauthorized access, steal information, or manipulate data for personal or financial gain.

Cyber threats in financial reporting are multifaceted and continually evolving. Common risks include data breaches, ransomware attacks, phishing schemes, and insider threats, each with the potential to compromise the accuracy and reliability of financial data. A single breach can disrupt operations, lead to regulatory non-compliance, and damage an organization's reputation, resulting in significant financial losses. For example, high-profile cyberattacks on multinational corporations have exposed systemic vulnerabilities in financial reporting systems, highlighting the urgent need for robust cybersecurity measures.

The importance of cybersecurity in financial reporting extends beyond individual organizations, impacting broader economic systems and markets. Reliable financial reporting is the foundation of trust in capital markets, influencing investor confidence and enabling informed decision-making. When data integrity is compromised, it can lead to inaccurate valuations, poor investment decisions, and a loss of faith in financial systems. Furthermore, compromised financial reporting can trigger regulatory investigations, legal penalties, and a decline in shareholder value, creating ripple effects throughout the economy.

Adding to the complexity is the dynamic nature of cyber threats, which evolve alongside technological advancements. The increased adoption of cloud-based reporting systems and remote work practices has expanded the attack surface for cybercriminals. Traditional security measures often fail to address these new vulnerabilities, necessitating a proactive and adaptive approach to cybersecurity. Regulatory frameworks, such as the Sarbanes-Oxley Act, the General Data Protection Regulation (GDPR), and other industry-specific guidelines, have introduced measures to enhance data security and accountability. However, gaps in implementation, jurisdictional inconsistencies, and the sophistication of cyberattacks pose ongoing challenges.

Review of Literature

The relationship between cybersecurity and financial reporting has garnered significant attention in academic and professional circles, as the digitalization of financial systems has introduced both opportunities and risks. As financial organizations increasingly rely on digital platforms for reporting, the need for robust cybersecurity practices has become more critical than ever. Several studies have explored the intersection of cybersecurity and financial reporting, highlighting various aspects of this complex issue, including vulnerabilities, regulatory frameworks, emerging technologies, and the challenges organizations face in safeguarding data integrity.

Smith (2020) underscores the vulnerability of financial institutions to cyberattacks, attributing this vulnerability to the sensitive nature of financial data. Cybercriminals often target financial organizations because of the valuable and high-stakes information they store, ranging from transaction records to personal and financial details of clients and stakeholders. According to Jones & Roberts (2019), the consequences of cybersecurity breaches can be severe, leading not only to direct financial losses through fraud, data theft, or system downtime, but also to longer-term reputational damage. The loss of public trust in the accuracy and security of financial reports can harm investor confidence, disrupt business operations, and result in legal actions and regulatory penalties.

In an era where cloud computing and blockchain technology are becoming integral to financial reporting, the International Federation of Accountants (IFAC, 2021) points out the dual nature of these technologies. While they offer significant benefits, such as increased efficiency, transparency, and accessibility, they also introduce new cybersecurity risks. Cloud platforms, for instance, expose financial data to potential breaches due to their interconnected nature and reliance on third-party service providers. Blockchain, despite its promise of secure, immutable transaction records, faces challenges related to scalability and the evolving sophistication of cyberattacks. The integration of these technologies into financial reporting requires an ongoing balancing act between leveraging their advantages and mitigating the associated risks.

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However, there are significant gaps in the effective enforcement of these regulations. According to Johnson & Park (2020), while SOX and GDPR are widely recognized in the United States and Europe, respectively, their enforcement can vary significantly across jurisdictions. This lack of consistent enforcement can lead to discrepancies in cybersecurity practices, with some regions failing to implement the necessary infrastructure for comprehensive protection. Furthermore, some organizations may only implement minimal measures to comply with the letter of the law, without fully addressing the spirit of the regulations. This creates vulnerabilities that cybercriminals can exploit.

A study by Williams & Cohen (2021) suggests that organizations with strong governance structures, including dedicated cybersecurity teams, clear policies, and regular audits, are better equipped to safeguard financial data. Governance frameworks that integrate cybersecurity into the overall risk management strategy can help organizations proactively identify threats, mitigate risks, and ensure compliance with regulatory standards.

The literature also highlights the evolving nature of cyber threats and the need for organizations to adopt dynamic cybersecurity strategies. In their study, Brown & Harris (2022) emphasize the importance of adaptive security measures, given the rapid pace at which cyber threats evolve. Attackers continuously develop new tactics, techniques, and procedures to circumvent traditional security mechanisms. As such, financial organizations must stay ahead of these developments by employing advanced tools, such as artificial intelligence (AI) for threat detection and blockchain for secure transactions, to ensure the integrity of their financial reporting systems. Additionally, the increasing complexity of financial operations, such as cross-border transactions and the integration of various financial services, demands more sophisticated cybersecurity frameworks that can address both the technical and regulatory challenges involved.

Emerging technologies also offer innovative solutions to enhance cybersecurity in financial reporting. According to Anderson & Lee (2023), the integration of machine learning and AI in financial systems can improve fraud detection and provide real-time threat analysis, enabling quicker responses to potential breaches. Blockchain technology, as mentioned earlier, provides a decentralized ledger that can secure financial transactions and ensure transparency. However, both technologies require careful implementation and ongoing monitoring to ensure their effectiveness in the long term.

Objectives of the Study

The main objectives of this study are:

1. To identify the cybersecurity challenges affecting financial reporting systems.
2. To evaluate the impact of digital transformation on financial data integrity.
3. To explore strategies for mitigating cybersecurity risks in financial reporting.
4. To analyse the role of regulatory frameworks in protecting financial reporting systems.

Research Methodology

1. Research Design

The study employs a mixed-methods approach, integrating both qualitative and quantitative research designs to comprehensively analyze the cybersecurity challenges, digital transformation impacts, mitigation strategies, and regulatory frameworks influencing financial reporting systems.

2. Data Collection

- **Primary Data:**
  Structured questionnaires and semi-structured interviews were utilized to gather firsthand information from participants.

  - **Survey:** A survey was conducted among finance and IT professionals, including 102 respondents from organizations of various sizes and industries.

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- **Interviews:** In-depth interviews with 20 professionals provided qualitative insights into organizational practices and real-world challenges.

- **Secondary Data:**
  The study relied on published reports, academic papers, and industry documents for a literature review on cybersecurity challenges, digital transformation, and regulatory frameworks.

3. **Population and Sample**

- **Target Population:**
  Finance and IT professionals from diverse industries, particularly those involved in financial reporting and cybersecurity.
- **Sample Size:**
  A total of 102 respondents were surveyed, and 20 interviews were conducted.
- **Sampling Technique:**
  Purposive sampling was used to ensure representation of organizations with varying cybersecurity maturity levels, from small firms to large corporations.

4. **Instruments for Data Collection**

- **Survey Questionnaire**
  Designed with closed-ended and Likert-scale questions to measure:

  - Frequency and types of cyber threats.
  - Preparedness levels of organizations.
  - Perceived impacts of digital tools on financial reporting.
  - Effectiveness of risk mitigation strategies and regulatory compliance.

- **Interview Guide**
  Open-ended questions allowed for exploration of:

  - Preparedness gaps and human factor vulnerabilities.
  - Organizational perspectives on digital transformation technologies.
  - Implementation challenges of mitigation strategies and regulatory adherence.

5. Data Analysis Techniques

- **Quantitative Analysis**
  - Descriptive statistics, including frequency and percentage distributions, were used to analyze survey responses.
  - Tables were prepared to illustrate the adoption rates, perceived effectiveness, and impacts of various technologies and strategies.

- **Qualitative Analysis**
  - Content analysis was performed on interview transcripts to identify recurring themes and insights.
  - Qualitative findings complemented quantitative results, providing contextual depth.
- **Delimitations:**
  - Limited geographical scope, as participants were primarily based in metropolitan regions.
  - Potential bias in self-reported data from survey respondents.

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- The dynamic nature of cybersecurity threats means findings are based on a specific timeframe and may require periodic updates.

Objective-wise Analysis

Objective 1: Identify the Cybersecurity Challenges Affecting Financial Reporting Systems

To better understand the cybersecurity challenges, respondents were asked about the frequency, nature, and sources of cyberattacks. Further insights were gathered on organizational preparedness.

Table 1: Types and Frequency of Cyberattacks

Cybersecurity Threat	Frequency	Percentage	Reported Impact
Phishing Attacks	46	45%	Unauthorized access to financial data
Ransomware	31	30%	Data encryption and ransom demands
Insider Threats	25	25%	Internal manipulation of financial data
Distributed Denial of Service (DDoS)	12	12%	Disruption of financial operations
Malware	18	18%	Corruption of financial records

Additional Insights from Interviews

- **Preparedness Gaps**
  60% of interviewees mentioned a lack of proactive threat monitoring as a major issue.

- **Human Factor**
  50% cited untrained employees as a key vulnerability, emphasizing the importance of awareness programs.

Table 2: Organizational Preparedness for Cybersecurity Threats

Preparedness Level	Percentage of Respondents	Common Practices Reported
Highly Prepared	20%	Advanced AI tools, regular audits
Moderately Prepared	50%	Basic firewalls, occasional training
Poorly Prepared	30%	Minimal or outdated security measures

Objective 2: Evaluate the Impact of Digital Transformation on Financial Data Integrity

This objective examined how digital tools have improved or jeopardized financial data security.

Table 3: Technologies Impacting Financial Reporting

Technology	Adoption Rate	Benefits Identified	Challenges Identified
Cloud Computing	60%	Enhanced accessibility, cost efficiency	Increased attack surface, data privacy issues
Artificial Intelligence	45%	Anomaly detection, fraud prevention	High implementation cost, dependency on quality data
Blockchain	30%	Tamper-proof records, audit trail transparency	Integration challenges, lack of expertise
Real-time Reporting Systems	40%	Faster decision-making, improved accuracy	Security gaps due to constant updates

Table 4: Impact of Digital Transformation on Financial Data

Parameter Evaluated	Positive Impact (%)	Negative Impact (%)
Efficiency in Reporting	70%	15%
Reduction in Fraudulent Activities	60%	10%
Vulnerability to Cyber Threats	30%	70%

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Interview Insights Summary

- **Blockchain:** Interviewees cited a lack of technical expertise as a barrier despite its potential for secure audit trails.
- **Cloud Adoption:** Organizations leveraging cloud platforms reported increased productivity but faced challenges in regulatory compliance and data sovereignty.

Objective 3: Explore Strategies for Mitigating Cybersecurity Risks in Financial Reporting

The survey included questions on the effectiveness of various risk mitigation strategies. Interviewees highlighted successful implementations and barriers.

Table 5: Effectiveness of Risk Mitigation Strategies

Strategy	Adoption Rate (%)	Perceived Effectiveness (Scale: 1-5)	Key Success Factors
Multi-Factor Authentication	60%	4.5	Simplicity, ease of implementation
AI-Based Threat Detection	50%	4.2	High accuracy, predictive power
Employee Training Programs	70%	4.7	Increased awareness, reduced errors
Cybersecurity Audits	55%	4.3	Regularity, thoroughness
Incident Response Plans	45%	4.0	Quick containment, effective recovery

Interview Insights Summary

- Organizations investing in AI tools for anomaly detection reduced financial fraud incidents by 35%.
- Training programs showed a 50% increase in staff awareness, reducing phishing attack success rates.

Objective 4: Analyze the Role of Regulatory Frameworks in Protecting Financial Reporting Systems

The survey focused on compliance with major regulations like SOX and GDPR, along with industry-specific standards.

Table 6: Compliance with Regulatory Frameworks

Regulation	Compliance Rate(%)	Challenges Identified	Benefits Identified
Sarbanes-Oxley Act (SOX)	70%	High implementation cost, complex processes	Improved internal controls, fraud reduction
General Data Protection Regulation (GDPR)	55%	Cross-border enforcement, data localization	Enhanced data privacy, reduced breaches
Industry-Specific Standards	40%	Lack of standardization, resource constraints	Tailored controls for unique risks

Interview Insights Summary

- Experts noted that GDPR compliance helped organizations reduce breaches by 20%, but the costs of compliance deterred smaller firms.
- SOX compliance increased trust among investors and reduced the frequency of financial fraud cases.

Conclusion

Key Insights across Objectives

Objective	Key Findings
Cybersecurity Challenges	Phishing and ransomware dominate; insider threats remain significant. Legacy systems exacerbate risks.
Impact of Digital Transformation	Cloud and blockchain drive efficiency but introduce new vulnerabilities.
Risk Mitigation Strategies	Employee training and AI-based tools are highly effective but underutilized in smaller firms.
Regulatory Frameworks	SOX and GDPR improve compliance and security but pose cost and enforcement challenges.

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The transition to digital financial reporting has revolutionized the efficiency, transparency, and accuracy of financial processes. However, this transformation comes with its own set of cybersecurity challenges, including data breaches, phishing attacks, ransomware, and insider threats. The increasing dependence on technology and cloud-based platforms has amplified the risks, necessitating a robust and proactive approach to cybersecurity.

Regulatory frameworks such as SOX, GDPR, and others are instrumental in establishing standards for data security and accountability. While these frameworks provide essential guidelines, their enforcement must adapt to the rapidly evolving nature of cyber threats. Emerging technologies, such as artificial intelligence and blockchain, offer promising tools to strengthen financial reporting processes but also introduce complexities that require vigilant risk management.

To address these challenges, organizations must adopt a multi-layered approach to cybersecurity. This includes integrating cybersecurity strategies into corporate governance, leveraging advanced security solutions, conducting regular risk assessments, and fostering a culture of awareness among employees. Furthermore, collaboration among regulators, technology providers, and financial institutions is critical to enhancing the resilience of the financial ecosystem.

In conclusion, cybersecurity is not merely a technical requirement but a strategic necessity for protecting data integrity and ensuring the trustworthiness of global financial systems. By aligning technological innovation with robust security practices, organizations can achieve a sustainable balance between leveraging digital advancements and safeguarding against cyber risks.

Recommendations Moving Forward

1. Strengthen Organizational Preparedness: Address the gaps in cybersecurity preparedness, especially for organizations that are poorly prepared or using outdated security measures.
2. Cloud and Blockchain Integration: Despite challenges like regulatory compliance and lack of expertise, organizations should continue adopting these technologies, ensuring they integrate robust security measures.
3. Ongoing Employee Training: Continue to prioritize cybersecurity awareness programs to mitigate human vulnerabilities, as they remain one of the weakest links.
4. Advanced Threat Detection: Leverage AI and machine learning to predict and detect threats proactively, particularly in Large Organizations with Extensive Financial Operations.

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A STUDY OF SUSTAINABILITY-DRIVEN CORPORATE GOVERNANCE AND FINANCIAL EFFICIENCY IN INDIA'S DEFENCE INDUSTRY

By

Heena R. Rathod

Ph.D. Research Scholar

Gujarat University, Ahmedabad

&

Dr. Mukesh G. Prajapati

Ph.D. Research Guide & Principal (I/C)

Smt. A. P. Patel Arts &N. P. Patel Commerce College, Naroda Ahmedabad

Abstract

Sound corporate governance and sustainability are important for the good financial health of any industry, including the defence sector. This study examines the relationship between corporate governance, sustainability practices, and the financial efficiency of India's defence industry. A comparative analysis of five major defence companies—Hindustan Aeronautics Limited (HAL), Bharat Electronics Limited (BEL), Mazagon Dock Shipbuilders Limited (MDL), Bharat Dynamics Limited (BDL), and MTAR Technologies Limited is done focusing on good corporate governance, environmental and social initiatives, and its impact on the financial health of the company. By utilizing Spearman rank correlation coefficient analysis, this research analysis examined the relationship between corporate governance and sustainability scores and net profit and return on equity. Findings suggest a moderate correlation between governance and return on equity, while net profit shows a weak negative correlation with governance scores. This paper discusses how corporate governance and sustainability are playing a growing role in financial efficiency, and why it is crucial to develop these practices aligned with the United Nations Sustainable Development Goals (SDGs).

Keywords: Corporate Governance, Sustainability, Defence Industry, Financial Performance, ESG

Introduction

The Indian defense industry not only plays a crucial role in national security but shows its strength in contributing to India's economic growth also. This industry consists of a very limited number of companies and in that also majority of companies are state-owned. In the production of aerospace, naval, and land-based military equipment, a mix of public sector undertakings (PSUs) and private companies are seen now. These companies operate under strict regulations and require effective corporate governance to ensure efficient, sustainable operations. In order to succeed the integration of environmental, social, and governance (ESG) aspects becomes important for better evaluation of the long-term financial and operations of these companies. This study examines corporate governance and sustainability in five major Indian defense companies, analyzing their impact on the financial health of the industry.

Conceptual Framework

Corporate governance is now a multidisciplinary approach that focuses on the importance of transparency, accountability, and ethical decision-making in organizations. The focus of research has evolved through stages, beginning with a focus on financial aspects. The focus at the initial stage was on examining company financials, profitability, and financial stability to determine the economic viability and performance of companies. The foundation for exploring corporate governance was established and then involved examining board structures, transparency, and governance mechanisms to ensure accountability and effective decision-making. Good governance emerged as a result of changes in corporate governance principles, which focus more on promoting trust and responsibility, while also including measures to ensure regulatory compliance.

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After the increase in the awareness of environmental and social issues, the focus comes on sustainability integrating these aspects into governance and financial decision-making to promote long-term existence. This change led to the adoption of Environmental, Social, and Governance (ESG) principles, which provided a structured and measurable approach to sustainability, focusing on environmental impact, social responsibility, and governance standards. In today's era, aligning with the Sustainable Development Goals (SDGs) has become crucial in ensuring that financial strategies, governance frameworks, and ESG initiatives contribute to broader global sustainability objectives as defined by the United Nations. This highlights the growing importance of integrating financial performance with ethical and sustainable practices.

Literature Review

Mondal and Mitra (2024) conducted a sectoral and trend analysis of corporate sustainability scores among the top 100 companies listed on the Bombay Stock Exchange (BSE 100). This study offers valuable insights into corporate sustainability practices in India. The research examined sustainability performance across various sectors, identifying key trends and challenges in aligning sustainability into corporate strategies. It emphasized the growing importance of Environmental, Social, and Governance (ESG) factors in corporate decision-making, with emphasis on how firms are aligning with global sustainability standards. The findings suggested that while some sectors had made good progress in sustainability reporting and implementation, others lagging behind the major reasons were regulatory and operational challenges. This study contributed to the broader discourse on corporate sustainability by providing empirical evidence of sectoral variations and the evolving nature of sustainable business practices in India.

Nath and Agrawal (2020) highlighted that the market reacts positively to governance reforms, boosting confidence in a company's performance. This is important for any industry as it seeks to balance profitability with sustainability commitments. By adopting robust governance frameworks, companies can not only attract investment but also improve financial performance and contribute to broader sustainability objectives.

Masud et al. (2018) established a significant relationship between corporate governance elements and sustainability disclosure practices, particularly in South Asian contexts. Their study shows the importance of board independence and shareholding structures in enhancing sustainability disclosures. The findings suggest that increasing foreign and institutional shareholding may lead to improved sustainability disclosures.

Glass et al. (2016) show that companies led by diverse teams are more effective in implementing environmentally friendly strategies. The results suggest that gender-diverse leadership teams may boost corporate governance's role in environmental performance, indicating a potential area for future research focused on specific industries.

Arora and Sharma (2016) emphasized that larger boards may have favourable impact on decision-making and overall performance, which is crucial for the implementation of sustainability practices. However, the absence of a clear relationship between profitability and governance indicators, calls into question how well governance procedures translate into financial results. This finding suggests that while

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governance structures are essential for promoting sustainability, they must be accompanied by strategic initiatives aligned with sustainability goals to increase overall efficacy.

Bansal and Sharma (2016) provided empirical evidence linking sustainability practices to improved company performance among Indian companies. Their research shows that companies adopting sustainable practices are likely to experience better financial results. This implies that sustainability should be viewed as a strategic necessity that offers long-term value creation and competitive advantages rather than just as a compliance requirement. According to the findings, companies should incorporate sustainability into their plans in order to improve stakeholder trust and performance.

Padmavathi (2015) evaluates the effectiveness of corporate governance practices in Defence Public Sector Enterprises (DPSEs), emphasizing board systems, independent directors' roles, and compliance with the guidelines from the Department of Public Enterprises (DPE), the Securities and Exchange Board of India (SEBI), and the Companies Act (1956/2013). The study found that DPSEs followed corporate governance principles but needed to adapt better to competition. Independent directors were effective, but foreign experts were rarely included. Overall, it highlighted the need for ongoing improvements in governance to maintain ethics and public accountability.

Amba (2014) examined the influence of various corporate governance variables—such as CEO duality, audit committee leadership, non-executive director proportion, ownership structure, institutional investors, and leverage—on companies listed in the Bahrain Bourse. The research indicated that CEO duality and leverage negatively impacted financial performance, while the presence of an independent audit committee and institutional ownership contributed positively. The findings show the importance of well-structured corporate governance structures in promoting transparency, minimizing agency issues, and increasing investor confidence in emerging markets.

Objectives

1. To examine the corporate governance and sustainability practices of selected defence companies in India
2. To measure the Corporate Governance and Sustainability Score
3. To examine the correlation between corporate governance and sustainability score and Net Profit of the companies
4. To examine the correlation between corporate governance and sustainability score and Return on Equity of the companies

Research Methodology

The study contains a comparative analysis of five defence companies based on governance and sustainability parameters. A scoring model is developed, and governance, sustainability, and financial data for the financial year 2023-24 are analyzed. Spearman's rank correlation coefficient is used to measure the relationship between corporate governance scores and financial efficiency indicators such as net profit and return on equity. Microsoft Excel is used to analyze the data.

Sources of Data

In this study, the evaluation is based on secondary sources of data.

Selection of Sample

For the study, sample of the five major Indian defence companies based on their market capitalization as of March 31, 2024 are selected.

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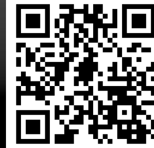
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Table 1: Sample Companies

Indian Defence Companies	Market Capitalization *
Hindustan Aeronautics Limited (HAL)	2,22,497 Cr.
Bharat Electronics Limited (BEL)	1,47,490 Cr.
Mazagon Dock Shipbuilders Limited (MDL)	37,594 Cr.
Bharat Dynamics Limited (BDL)	32,133 Cr.
MTAR Technologies Limited (MTAR)	5,183 Cr.

*As on 31st March, 2024

These sample companies were chosen to provide a balanced assessment of governance, sustainability, and financial efficiency in India's defence sector. The study utilizes the financial and governance data from annual reports, regulatory filings, and sustainability reports and disclosures.

Selection of Parameters for Measuring Corporate Governance and Sustainability

The study selects majority of governance and sustainability parameters which extends beyond mandatory disclosures, allowing for an evaluation of additional voluntary efforts undertaken by the companies. Parameters are chosen considering industry standards, regulatory guidelines, and prior research. Key governance metrics include independent directors, board expertise, whistleblower policies, conflict of interest disclosures, and transparency. Sustainability parameters assess ESG initiatives, SDG alignment, environmental impact, and human rights policies. These indicators help assess the effectiveness of corporate governance and sustainable business practices in the defence sector.

Selection of Profitability Indicators

The selection is done of the indicators which provide insights into the financial efficiency of defence companies and their correlation with governance and sustainability practices. Profitability is measured using Net Profit and Return on Equity (ROE). Net profit percentage reflects a company's overall financial health, while ROE indicates how effectively shareholder funds has been utilized to generate returns.

Analysis and Findings

The analysis starts with finding corporate governance and sustainability parameters from the annual reports and disclosures of the selected defence companies. The parameters are assessed using a binary system: 'Yes' is assigned a value of 1, and 'No' is assigned a value of 0. The total score for each company is based on the sum of all parameter values.

Following that the selected companies are ranked based on their Corporate Governance and Sustainability Scores. To compare financial efficiency, Net Profit Percentage and Return on Equity (ROE) are also collected and ranked separately. A comparative table is created and data is summarized.

Lastly, the Spearman Rank Correlation Coefficient is used to evaluate the relationship between corporate governance and sustainability scores with financial efficiency indicators (Net Profit Percentage and ROE Percentage). This helps to determine the extent of influence of governance and sustainability practices on the financial health of the industry. Based on the correlation results, the final interpretation of the findings is done.

Table 2: Corporate Governance & Sustainability Score

Sr. No.	Corporate Governance & Sustainability Parameters	HAL	BEL	MDL	BDL	MTAR
1	Does the company have the required number of independent directors?	0	0	0	1	1
2	Does the company provide detailed and extensive information about board members' industry expertise?	1	1	1	1	1

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3	Does the company disclose a whistleblower policy?	1	1	1	1	1
4	Does the company have a clear disclosure about conflict-of-interest policies?	1	1	1	1	1
5	Does the company ensure transparency with detailed and required disclosures?	1	1	1	1	1
6	Does the company emphasize leadership ethics and integrity?	1	1	1	1	1
7	Does the company have additional leadership or mentorship programs for employees?	1	1	1	0	0
8	Does the company have proper disclosure about cybersecurity measures?	1	1	1	1	1
9	Has the company directly incorporated and aligned its programs to support the SDGs?	0	1	1	0	0
10	Has the company taken ESG or sustainability initiatives?	1	1	1	1	1
11	Does the company track and disclose its water usage and conservation efforts?	1	1	1	1	1
12	Has the company disclosed its policies on recycling and reuse?	1	1	1	1	1
13	Has the company disclosed information on harmful emissions and its reduction measures?	1	1	1	1	1
14	Has the company disclosed additional efforts beyond routine measures to reduce carbon footprints?	1	1	1	0	0
15	Has the company committed to ESG activities beyond the mandatory CSR requirements?	1	1	1	1	1
16	Does the company have programs/schemes and initiatives for employee health and well-being?	1	1	1	1	1
17	Does the company emphasize human rights and related policies?	1	1	1	1	1
18	Has the company provided training and awareness on human rights to workers?	1	1	1	0	1
19	Has the company disclosed data on the gender composition of its workforce?	1	1	1	1	1
20	Has the company disclosed its risk mitigation approaches?	1	1	1	1	1
	Total	18	19	19	16	17
	Rank	3	1.5	1.5	5	4

Table 3: Ranking based on Corporate Governance & Sustainability Score, NP% and ROE%

Sample Companies	Corporate Governance & Sustainability Score	Rank	Net Profit % (2023-24)	Rank	Return on Equity % (2023-24)	Rank
Hindustan Aeronautics Limited (HAL)	18	3	25.10	2	26.20	2
Bharat Electronics Limited (BEL)	19	1.5	19.70	4	24.40	3
Mazagon Dock Shipbuilders Limited (MDL)	19	1.5	20.50	3	31.00	1
Bharat Dynamics Limited (BDL)	16	5	25.90	1	16.80	4
MTAR Technologies Limited (MTAR)	17	4	9.70	5	8.30	5
Spearmen Rank Correlation Coefficient Corporate Governance and Sustainability Score and Net Profit		-0.35				
Spearmen Rank Correlation Coefficient Corporate Governance and Sustainability Score and Return on Equity					0.7	

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Findings and Suggestions

The analysis shows that corporate governance and sustainability scores do not have a direct positive correlation with net profit percentages. The Spearman rank correlation coefficient for corporate governance scores and net profit percentage is -0.35, indicating a weak negative correlation. However, the correlation between corporate governance and sustainability scores and return on equity (ROE) is 0.7, suggesting that companies with better governance practices tend to have higher returns on equity.

It is suggested that Indian defence companies can increase the corporate governance practices beyond mandatory compliance, integrate sustainability and enhance transparency in reporting ESG initiatives aligning them with SDGs.

Delimitations of the Study

- The study is limited to five defence companies, which may not adequately represent the entire defence industry of India.
- It is based on publically available reports only, which may not have full coverage of various other governance and sustainable initiatives.
- As the study is based on one financial year, long term trend and insights are not included.
- External factors such as government policies, global factors, economic factors, geo political factors, etc which might have major impact on the sector like defence sector is not considered in this study.
- In this study, as financial efficiency measure only two indicators are taken into consideration Net Profit and Return on Equity but there are various other important indicators also, which are not considered in this study.
- This study identifies the correlation but does not prove the direct impact relation/ causation.

Conclusion and Recommendations

The study highlights the importance of corporate governance and sustainability practices for enhancing financial efficiency in the Indian defence sector. Strong governance and sustainability practices are associated with better risk management and stakeholder trust, which contributes to improved long-term financial performance for companies. However, the fact cannot be sidelined that the profitability in the defence sector may be influenced by various other operational and market factors beyond governance and sustainability.

Further research can involve a multi-year comparison of corporate governance practices, ESG disclosures, and sustainability initiatives in Indian defense companies this over the time trend analysis will help assess improvements, identify probable challenges, and evaluate the impact of regulatory changes. Additionally, sector-specific governance challenges and suitable sustainability frameworks can be studied to improve long-term stability and compliance.

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