

Real Time Financial Reporting: A Systematic Review of Challenges and Advantages

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ABSTRACT

The rapid digital transformation of business processes has significantly altered the landscape of financial reporting, giving rise to real-time financial reporting (RTFR) as a transformative innovation in accounting practice. Unlike traditional periodic reporting systems, RTFR facilitates continuous access to financial information through the integration of cloud computing, automation, artificial intelligence, and enterprise resource planning systems. This study systematically reviews extant literature on the advantages and challenges associated with RTFR adoption in contemporary organizations. Drawing on Diffusion of Innovation Theory as the underpinning theoretical framework, the study adopts a qualitative systematic literature review approach to synthesize findings from peer-reviewed journal articles, industry reports, and regulatory publications published between 2018 and 2025. The review reveals that RTFR enhances organizational efficiency, transparency, corporate governance, and strategic decision-making by providing timely and accurate financial information. However, the adoption of RTFR is constrained by significant challenges, including cybersecurity risks, regulatory and compliance complexities, organizational readiness deficiencies, and substantial implementation costs, particularly among small and medium-sized enterprises (SMEs). The findings further indicate that contextual factors such as firm size, industry characteristics, and geographical location influence adoption patterns and outcomes. The study contributes to accounting literature by integrating diverse perspectives on RTFR adoption, identifying critical knowledge gaps, and proposing directions for future research. It is recommended that organizations adopt phased implementation strategies, strengthen cybersecurity infrastructure, and invest in employee training, while policymakers should modernize regulatory frameworks to support continuous financial disclosure.

Keywords: Real-time financial reporting; Digital transformation; Cloud accounting; Diffusion of innovation; Corporate governance; Cybersecurity; Continuous disclosure.

INTRODUCTION

The unprecedented pace of digital transformation has fundamentally reshaped organizational operations, business models, and information management practices across the globe. Within the accounting profession, one of the most significant developments arising from this transformation is the emergence of real-time financial reporting (RTFR). Real-time financial reporting refers to the continuous generation, processing, and dissemination of financial information via integrated digital technologies, enabling stakeholders to access up-to-date financial data at any time. This represents a substantial departure from traditional financial reporting systems, which rely primarily on periodic disclosures issued on a quarterly or annual basis.

The increasing demand for timely, transparent, and reliable financial information has accelerated the adoption of RTFR in contemporary organizations. Investors, regulators, creditors, and other stakeholders increasingly require

immediate access to financial information to support informed decision-making in highly dynamic and competitive business environments. Consequently, organizations are increasingly leveraging technologies such as cloud computing, enterprise resource planning (ERP) systems, artificial intelligence (AI), blockchain technology, and automated accounting systems to facilitate continuous financial reporting and enhance organizational responsiveness.

The potential benefits associated with RTFR are considerable. Existing literature suggests that organizations adopting real-time reporting systems experience enhanced operational efficiency, reduced manual errors, improved transparency, strengthened corporate governance, and superior strategic decision-making capabilities. By enabling continuous monitoring of financial performance, RTFR allows management to identify emerging risks and opportunities promptly, thereby enhancing organizational agility and resilience in volatile economic environments.

Despite these advantages, the transition from traditional reporting systems to RTFR presents numerous challenges. Continuous financial reporting exposes organizations to heightened cybersecurity threats, data privacy concerns, and operational vulnerabilities. Furthermore, existing accounting and regulatory frameworks in many jurisdictions remain largely designed for periodic reporting, thereby creating compliance challenges for organizations seeking to implement continuous disclosure practices. Additional barriers include substantial implementation costs, inadequate technological infrastructure, resistance to organizational change, and shortages of personnel possessing the requisite digital competencies.

Although scholarly interest in RTFR has increased significantly in recent years, existing studies remain fragmented and often focus on specific aspects of adoption, such as technological infrastructure, security concerns, or organizational outcomes. Moreover, empirical evidence remains concentrated in developed economies, with comparatively limited attention devoted to emerging markets and developing countries. Consequently, there remains a need for a comprehensive synthesis of extant literature that integrates existing knowledge, identifies recurring themes, and highlights unresolved issues requiring further scholarly attention.

Against this backdrop, this study systematically reviews contemporary literature on real-time financial reporting with the objective of examining its major advantages and challenges. Specifically, the study seeks to: (i) identify the key benefits associated with RTFR adoption; (ii) examine the principal barriers hindering implementation; (iii) explore contextual differences in adoption across industries, firm sizes, and geographical regions; and (iv) identify gaps in existing literature and propose directions for future research. By achieving these objectives, the study contributes to the growing discourse on digital transformation in accounting and provides practical insights for managers, policymakers, and researchers seeking to promote effective implementation of RTFR systems.

Theoretical Framework

Diffusion of Innovation Theory

This study is anchored on the Diffusion of Innovation (DOI) Theory propounded by Rogers (2003). The theory explains how new ideas, technologies, and innovations spread within and across social systems over time. According to Rogers (2003), the adoption of an innovation is influenced by individuals' and organizations' perceptions regarding the characteristics of the innovation itself.

Diffusion of Innovation Theory identifies five major attributes that determine the rate and extent of innovation adoption: relative advantage, compatibility, complexity, trialability, and observability.

Relative advantage refers to the degree to which an innovation is perceived as superior to the system it replaces. In the context of real-time financial reporting (RTFR), organizations are more likely to adopt RTFR systems when they perceive significant benefits such as enhanced efficiency, reduced reporting delays, improved transparency, and better decision-making capabilities.

Compatibility denotes the extent to which an innovation aligns with existing organizational values, processes, and technological infrastructure. Organizations possessing integrated enterprise resource planning (ERP) systems and advanced digital infrastructures are more likely to adopt RTFR because such systems complement existing accounting processes.

Complexity refers to the perceived difficulty associated with understanding and implementing an innovation. Technical complexity, cybersecurity concerns, inadequate employee competencies, and resistance to organizational change may constrain the adoption of RTFR. High levels of perceived complexity tend to reduce the likelihood of adoption.

Trialability represents the extent to which an innovation can be experimented with on a limited basis before full-scale implementation. Organizations that implement RTFR in phases or pilot-test cloud-based accounting solutions are better positioned to evaluate potential benefits and challenges before committing substantial resources.

Observability relates to the visibility of an innovation's outcomes to potential adopters. Organizations are more inclined to adopt RTFR when the benefits experienced by early adopters, such as improved financial performance, enhanced governance, and increased stakeholder confidence, are clearly observable.

The relevance of Diffusion of Innovation Theory to this study lies in its ability to explain variations in the adoption and implementation of real-time financial reporting across organizations, industries, and geographical contexts. While some organizations rapidly embrace RTFR because of perceived strategic advantages, others remain hesitant due to concerns relating to cost, complexity, security risks, and regulatory uncertainties.

Accordingly, this theory provides an appropriate analytical lens for examining both the drivers and barriers associated with the adoption of real-time financial reporting systems. It further explains why contextual factors such as firm size, technological readiness, industry characteristics, and regulatory environments influence adoption outcomes.

Conceptual Framework

The conceptual framework for this study posits that digital technologies such as cloud computing, artificial intelligence, blockchain technology, and enterprise resource planning systems facilitate the adoption of real-time financial reporting. The adoption of RTFR subsequently leads to several organizational outcomes, including enhanced efficiency, improved transparency, superior strategic decision-making, and strengthened corporate governance. However, the relationship between RTFR adoption and organizational outcomes may be moderated by factors such as cybersecurity risks, regulatory compliance requirements, organizational readiness, and implementation costs.

Figure 1: Conceptual Framework of RTFR Adoption

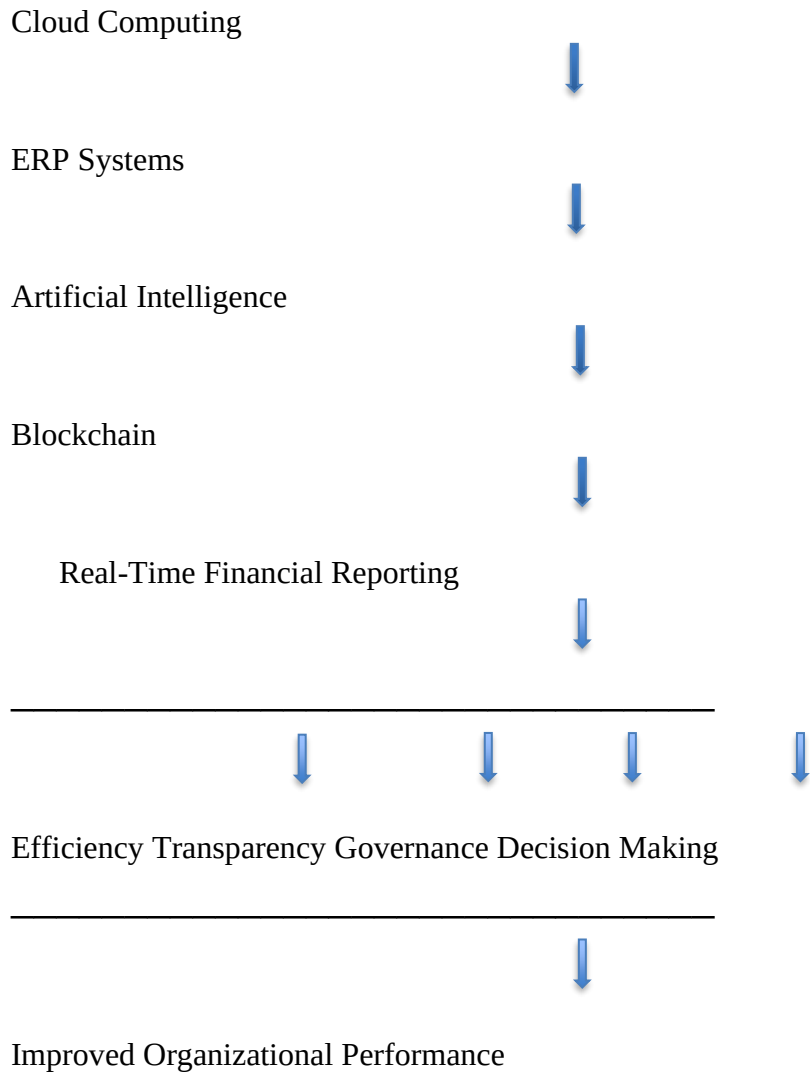
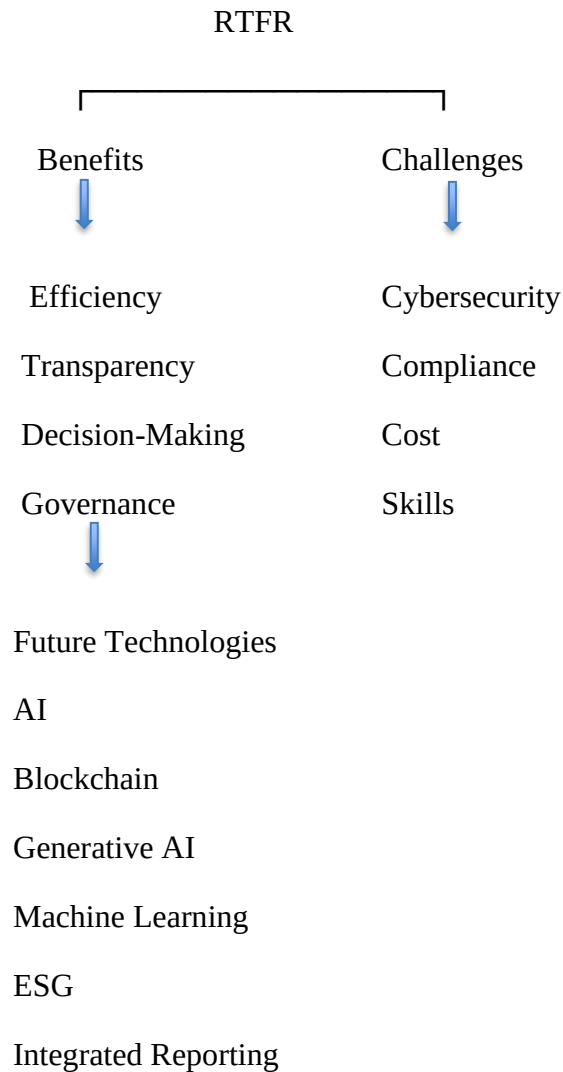


Figure 2: Thematic Maps



LITERATURE REVIEW

Concept of Real-Time Financial Reporting

Real-time financial reporting (RTFR) refers to the continuous generation, processing, and dissemination of financial information through digital technologies, enabling stakeholders to access updated financial data almost instantaneously. Unlike traditional financial reporting systems, which rely on periodic disclosures, RTFR provides timely information that enhances organizational responsiveness and transparency (Alles & Piechocki, 2012). The emergence of cloud computing, enterprise resource planning (ERP) systems, big data analytics, artificial intelligence (AI), and blockchain technologies has accelerated the transition toward continuous reporting frameworks.

According to Vasarhelyi and Halper (1991), real-time reporting represents a fundamental transformation in accounting practice by shifting the profession from historical record-keeping to continuous monitoring and strategic decision support. Similarly, Yoon, Hoogduin and Zhang (2015) argued that continuous auditing and reporting systems enhance information quality and reduce reporting lag, thereby increasing the relevance of financial information for decision-makers.

Despite the growing acceptance of RTFR, scholars disagree on the extent to which organizations should adopt continuous disclosure systems. While proponents emphasize enhanced timeliness and transparency, critics caution that excessive information flows may overwhelm users and increase compliance burdens (Alles, Brennan, Kogan, & Vasarhelyi, 2006).

Real-Time Financial Reporting and Operational Efficiency

A major advantage associated with RTFR is improved operational efficiency. The automation of accounting processes reduces manual intervention, minimizes human errors, and accelerates financial reporting cycles. Smith (2023) observed that cloud-based accounting platforms significantly reduce the time required to close accounting books and prepare financial statements.

Similarly, Chen (2025) found that the integration of ERP systems with RTFR platforms enhances data synchronization across organizational functions, thereby improving reporting accuracy and operational effectiveness. In a study of multinational corporations, Warren, Moffitt and Byrnes (2015) reported that organizations adopting digital reporting technologies experienced substantial productivity gains due to improved data accessibility and process automation.

However, some studies suggest that efficiency gains are contingent upon organizational readiness and technological maturity. Firms lacking adequate digital infrastructure often experience implementation difficulties that may offset expected efficiency benefits (Dai & Vasarhelyi, 2017). Consequently, operational efficiency derived from RTFR appears to depend largely on organizational capabilities and technological preparedness.

Transparency, Corporate Governance and Stakeholder Confidence

Transparency constitutes one of the most frequently cited benefits of RTFR. Continuous access to financial information reduces information asymmetry between managers and stakeholders, thereby enhancing corporate governance and accountability.

Williams (2021) argued that real-time disclosure strengthens investor confidence because stakeholders can access relevant financial information promptly. Similarly, Bushman and Smith (2001) maintained that timely disclosure mechanisms improve monitoring functions and reduce agency conflicts within organizations.

From a corporate governance perspective, RTFR facilitates continuous oversight by boards, regulators, and investors. Alles and Gray (2016) contended that continuous reporting systems improve governance quality by enabling early detection of irregularities and financial anomalies.

Nevertheless, some scholars caution that excessive disclosure may expose organizations to competitive risks and increase the likelihood of misinterpretation by investors (Debreceeny, Gray, Ng, Lee, & Yau, 2005). Thus, achieving an optimal balance between transparency and confidentiality remains an important challenge.

Strategic Decision-Making Benefits

Real-time access to financial information significantly enhances managerial decision-making. Timely information enables managers to identify trends, respond to market changes, allocate resources effectively, and manage risks proactively.

Patel (2022) demonstrated that firms utilizing real-time reporting systems exhibited greater resilience during periods of economic uncertainty compared with firms relying on traditional reporting methods. Likewise, Appelbaum, Kogan, Vasarhelyi and Yan (2017) argued that advanced analytics integrated with RTFR systems improve predictive capabilities and strategic planning.

The increasing use of AI-driven analytics further enhances decision-making quality by enabling predictive modelling and scenario analysis. However, reliance on automated decision systems raises concerns regarding algorithmic bias, accountability, and ethical decision-making (Sutton, Holt, & Arnold, 2016).

Cybersecurity and Data Privacy Challenges

Despite its numerous benefits, RTFR exposes organizations to significant cybersecurity and data privacy risks. Continuous data transmission increases vulnerability to cyberattacks, unauthorized access, and data breaches.

Adewale (2024) identified cybersecurity concerns as one of the principal barriers to RTFR adoption, particularly in highly regulated industries. Similarly, Gordon, Loeb and Zhou (2011) argued that organizations implementing digital reporting systems must invest heavily in cybersecurity infrastructure to safeguard sensitive financial information.

The growing prevalence of ransomware attacks and sophisticated cyber threats further complicates the implementation of RTFR systems. Consequently, organizations are increasingly adopting encryption technologies, multi-factor authentication, and continuous monitoring systems to strengthen information security.

Regulatory and Compliance Challenges

Existing financial reporting regulations in many jurisdictions were developed primarily for periodic disclosure systems. Consequently, organizations adopting RTFR frequently encounter compliance challenges.

Scholars have argued that regulatory frameworks have not evolved sufficiently to accommodate continuous disclosure practices (Alles et al., 2006). Regulatory uncertainties relating to disclosure frequency, audit requirements, and liability issues continue to hinder widespread adoption.

Furthermore, international differences in accounting standards and regulatory environments create additional complexities for multinational corporations implementing RTFR systems (IFAC, 2023). Policymakers therefore face the challenge of modernizing regulatory frameworks while maintaining investor protection and market stability.

Adoption among SMEs and Large Corporations

The adoption of RTFR differs considerably according to organizational size. SMEs generally prioritize affordability, scalability, and ease of implementation, whereas large corporations emphasize system integration, compliance, and strategic benefits.

Chen (2025) observed that SMEs often face resource constraints that limit investment in sophisticated digital reporting infrastructures. Conversely, large organizations possess greater financial and technological capacities that facilitate implementation.

However, cloud-based accounting solutions have increasingly reduced entry barriers for SMEs by offering flexible subscription-based models. Despite these opportunities, challenges relating to employee skills, change management, and cybersecurity remain significant.

Real-Time Financial Reporting in Emerging Economies

Existing literature on RTFR is heavily concentrated in developed economies, with limited evidence from emerging markets. Organizations operating in developing countries often face infrastructure deficiencies, inadequate regulatory support, and shortages of skilled professionals.

The World Bank (2022) reported that unreliable internet connectivity, weak cybersecurity frameworks, and limited technological investment frequently constrain digital transformation initiatives in emerging economies. Nonetheless, increasing digitalization and government reforms are gradually creating favourable conditions for RTFR adoption across Africa, Asia, and Latin America.

Further empirical studies are required to understand the unique drivers and barriers influencing RTFR adoption in emerging economies.

Artificial Intelligence and Blockchain Integration

Recent studies indicate growing convergence between RTFR, artificial intelligence, and blockchain technologies. AI enhances predictive analytics, anomaly detection, and automated decision-making, while blockchain offers immutable, transparent, and verifiable financial records.

Johnson and Lee (2019) argued that AI-driven accounting systems significantly improve forecasting accuracy and reduce fraud risks. Similarly, Zhao (2020) observed that blockchain technology strengthens transparency and auditability by providing tamper-resistant financial records.

Despite these promising developments, empirical evidence regarding the practical implications of AI and blockchain integration remains limited. Consequently, future research should investigate how these technologies influence organizational performance, governance quality, and reporting reliability.

Emerging Trends in Real-Time Financial Reporting

The evolution of digital technologies continues to reshape the landscape of real-time financial reporting (RTFR), extending beyond cloud computing and blockchain to encompass emerging innovations such as generative artificial intelligence (Gen AI), machine learning (ML), Environmental, Social, and Governance (ESG) reporting, and integrated reporting frameworks. These technologies are transforming not only the speed of financial reporting but also the quality, scope, and strategic relevance of accounting information. As organizations accelerate digital transformation initiatives, these innovations are expected to redefine accounting practice and enhance the value of continuous financial reporting (IFAC, 2023; Deloitte, 2024).

Generative Artificial Intelligence in Real-Time Financial Reporting

Generative Artificial Intelligence (Gen AI) has emerged as one of the most transformative technologies influencing contemporary accounting and financial reporting. Unlike conventional artificial intelligence, which primarily focuses on data analysis and pattern recognition, Gen AI is capable of generating human-like narratives, preparing reports, summarizing complex financial information, and supporting managerial decision-making through natural language generation (OpenAI, 2023; Deloitte, 2024).

Within RTFR environments, Gen AI can automate the preparation of financial statements by extracting information directly from Enterprise Resource Planning (ERP) systems and cloud-based accounting platforms. This capability substantially reduces manual intervention, minimizes reporting delays, and enhances consistency in financial disclosures. Furthermore, Gen AI facilitates automated narrative reporting by generating Management Discussion and Analysis (MD&A) sections, executive summaries, explanatory notes, and performance commentaries, thereby reducing the administrative burden on accounting professionals while improving reporting efficiency.

Another important application of Gen AI is intelligent anomaly detection. Through continuous analysis of transactional data, Gen AI algorithms can identify unusual accounting entries, abnormal financial patterns, or potential indicators of fraud in real time. Such capabilities strengthen internal control systems, enhance audit effectiveness, and enable organizations to respond promptly to financial irregularities before they escalate into material reporting issues. Consequently, Gen AI has considerable potential to improve both the efficiency and reliability of continuous financial reporting while supporting auditors and management in maintaining financial integrity (Kokina & Davenport, 2017).

Machine Learning and Predictive Financial Analytics

Machine learning represents another significant technological advancement driving the evolution of RTFR. Machine learning algorithms enable accounting systems to learn from historical financial data, recognize complex patterns, and continuously improve prediction accuracy without explicit programming.

One of the most valuable applications of machine learning in RTFR is fraud prediction. By analysing historical transaction patterns, customer behaviour, and financial anomalies, machine learning models can identify suspicious activities that may indicate fraudulent transactions or financial manipulation. This predictive capability strengthens organizational risk management and enhances financial reporting reliability (Appelbaum et al., 2017).

Machine learning also supports financial forecasting by enabling organizations to predict future revenues, operating costs, cash flows, and overall financial performance with greater precision. Unlike traditional

forecasting techniques that rely heavily on historical trends and managerial judgement, machine learning models continuously update predictions using real-time transactional data and changing business environments.

Furthermore, predictive analytics powered by machine learning enhances strategic decision-making by identifying emerging risks, evaluating alternative business scenarios, and providing managers with timely insights for resource allocation and performance optimization. Consequently, machine learning transforms RTFR from a historical record-keeping function into a forward-looking decision-support system capable of improving organizational agility and resilience.

Environmental, Social, and Governance (ESG) Reporting

Growing stakeholder demand for corporate sustainability has significantly increased the importance of Environmental, Social, and Governance (ESG) reporting within modern financial reporting systems. Investors, regulators, customers, and other stakeholders increasingly expect organizations to disclose not only financial performance but also their environmental stewardship, social responsibility, and governance practices (IFRS Foundation, 2023).

The integration of RTFR with ESG reporting enables organizations to collect, process, and communicate sustainability information continuously rather than through periodic reporting cycles. Real-time ESG reporting facilitates immediate monitoring of key sustainability indicators, including greenhouse gas emissions, energy consumption, waste management, employee wellbeing, diversity metrics, occupational health and safety performance, and corporate governance practices.

Cloud-based accounting systems, Internet of Things (IoT) devices, and advanced analytics platforms further support real-time ESG dashboards by automatically collecting environmental and operational data from multiple organizational units. These dashboards provide managers, regulators, and investors with continuous visibility into sustainability performance, thereby improving transparency, accountability, and strategic decision-making.

The increasing adoption of international sustainability disclosure standards, particularly those issued by the International Sustainability Standards Board (ISSB), has further accelerated organizational interest in integrating ESG information with financial reporting systems. Consequently, RTFR is evolving into a comprehensive reporting framework capable of simultaneously communicating financial and non-financial organizational performance.

Integrated Reporting and Holistic Organizational Performance

Integrated reporting represents another important development shaping the future of RTFR. Unlike conventional financial reporting, which focuses primarily on historical financial performance, integrated reporting combines financial and non-financial information to provide stakeholders with a comprehensive understanding of how organizations create value over time (International Integrated Reporting Council, 2021).

Within an integrated reporting framework, RTFR facilitates the continuous disclosure of multiple dimensions of organizational performance, including financial performance, environmental sustainability, governance effectiveness, human capital development, innovation, intellectual capital, and social impact. Such integration enables stakeholders to evaluate organizational performance using a broader set of indicators beyond traditional financial statements.

Real-time integrated reporting also enhances corporate transparency by providing timely information regarding strategic objectives, risk management practices, environmental initiatives, governance structures, stakeholder engagement activities, and long-term value creation strategies. This holistic reporting approach improves investor confidence while supporting more informed decision-making by management, regulators, lenders, and capital market participants.

As digital technologies continue to evolve, integrated reporting is expected to become increasingly automated through cloud computing, artificial intelligence, machine learning, and advanced analytics. Consequently, organizations adopting RTFR are likely to transition from traditional financial reporting systems toward

comprehensive digital reporting ecosystems capable of delivering continuous financial, environmental, governance, and social performance information.

Implications for Future Accounting Practice

The convergence of generative artificial intelligence, machine learning, ESG reporting, and integrated reporting is transforming RTFR into a multidimensional strategic management tool. Rather than serving solely as a mechanism for timely financial disclosure, RTFR is increasingly supporting predictive decision-making, sustainability reporting, enterprise risk management, corporate governance, and stakeholder engagement.

For organizations, these emerging technologies present significant opportunities to improve reporting quality, operational efficiency, transparency, and strategic responsiveness. Nevertheless, successful implementation will require substantial investments in digital infrastructure, cybersecurity, workforce development, ethical AI governance, and regulatory compliance. Future empirical research should examine the organizational implications of these emerging technologies across industries, organizational sizes, and geographical regions, particularly within emerging economies where digital transformation remains at an early stage. In addition, quantitative studies and meta-analyses are needed to evaluate the measurable impact of Gen AI, machine learning, and ESG-enabled RTFR on financial reporting quality, organizational performance, and investor decision-making.

Research Gap

Although prior studies have extensively examined the benefits and challenges of digital financial reporting, existing literature remains fragmented and predominantly focused on developed economies. Furthermore, limited research has synthesized evidence across organizational contexts, industries, and geographical regions. Empirical investigations examining the integration of emerging technologies such as AI and blockchain with RTFR also remain scarce. Consequently, this study seeks to bridge these gaps by providing a comprehensive synthesis of contemporary literature on the advantages and challenges of real-time financial reporting across diverse contexts.

METHODOLOGY

Research Design

This study adopted a qualitative Systematic Literature Review (SLR) approach to examine the advantages and challenges associated with real-time financial reporting (RTFR). A systematic literature review provides a rigorous, transparent, and replicable method for identifying, evaluating, and synthesizing existing scholarly evidence on a particular research phenomenon. The approach was considered appropriate because real-time financial reporting is an emerging area characterized by rapidly evolving technological and regulatory developments.

The review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to ensure methodological rigor, transparency, and reproducibility.

Data Sources and Search Strategy

Relevant literature was retrieved from major academic databases, including:

- Scopus
- Web of Science
- ScienceDirect
- Google Scholar
- Emerald Insight

To capture a broad range of studies, the following search strings were employed individually and in combination:

- "real-time financial reporting"
- "continuous financial reporting"
- "digital financial reporting"
- "cloud accounting adoption"
- "enterprise resource planning and financial reporting"
- "real-time accounting systems"
- "continuous disclosure"
- "cybersecurity in financial reporting"
- "blockchain and financial reporting"
- "artificial intelligence in accounting"

Boolean operators (AND, OR) were used to refine search results. For example:

("real-time financial reporting" OR "continuous financial reporting")

AND

("cloud accounting" OR "ERP integration")

AND

("cybersecurity" OR "regulatory compliance")

Inclusion and Exclusion Criteria

To ensure the quality and relevance of the reviewed studies, explicit inclusion and exclusion criteria were established.

Inclusion Criteria

Studies were included if they:

1. Were published between 2018 and 2025.
2. Were peer-reviewed journal articles, industry reports, or regulatory publications.
3. Focused directly on real-time financial reporting or closely related concepts.
4. Examined technological, organizational, regulatory, or strategic dimensions of RTFR.
5. Were published in English.

Exclusion Criteria

Studies were excluded if they:

1. Focused solely on general information technology adoption without accounting relevance.

2. Were conference abstracts, editorials, dissertations, or unpublished manuscripts.
3. Did not provide sufficient empirical or conceptual evidence.
4. Were duplicate records retrieved from multiple databases.

Study Selection Procedure

The study selection process followed the PRISMA framework.

Initially, a total of 132 records were identified across the selected databases. After removing duplicate publications, 110 studies remained for title and abstract screening. Following the screening process, 72 articles were considered potentially relevant and subjected to full-text assessment. Subsequently, 48 studies met all inclusion criteria and were retained for final analysis.

The PRISMA process is summarized below:

Records identified (n=132)



Duplicates removed (22)



Records screened (110)



Full text assessed (72)



Excluded (24)



Studies included (48)

Figure 1: PRISMA Flow Diagram

Data Extraction and Analysis

Data extraction was performed systematically using a standardized extraction template. Information extracted from each study included:

- Author(s)
- Year of publication
- Study context
- Research design
- Key findings
- Identified benefits
- Identified challenges
- Policy implications

The extracted data were analysed using thematic analysis. This analytical technique facilitated the identification, classification, and synthesis of recurring themes across the reviewed studies.

The thematic analysis generated six major themes:

1. Operational efficiency.
2. Transparency and corporate governance.
3. Strategic decision-making.
4. Cybersecurity and privacy concerns.
5. Regulatory and compliance challenges.
6. Organizational readiness and implementation costs.

Cross-context analysis was also conducted to compare findings across:

- Developed and emerging economies.
- SMEs and large corporations.
- Different industrial sectors.

Quality Assessment

To ensure the reliability and credibility of the review, only studies published in reputable peer-reviewed journals, recognized industry reports, and official regulatory documents were included. To enhance the methodological rigor of this systematic review, each eligible study was subjected to a structured quality assessment before inclusion in the final synthesis. The assessment was adapted from established appraisal approaches used in systematic literature reviews and evaluated five criteria:

1. Clarity of research objectives.
2. Appropriateness of the research methodology.
3. Transparency of data collection and analysis procedures.
4. Relevance to real-time financial reporting.
5. Credibility and consistency of the findings.

Each criterion was scored as 1 (criterion met) or 0 (criterion not met), giving a maximum quality score of five. Studies scoring three or above were retained for analysis, while studies with lower scores were excluded to ensure that only methodologically sound evidence informed the review.

Two independent screening rounds were undertaken to reduce selection bias. Any disagreements regarding study inclusion were resolved through discussion and re-evaluation of the eligibility criteria.

Ethical Considerations

This study relied exclusively on secondary data obtained from publicly available scholarly publications, industry reports, and regulatory documents. Consequently, no human participants were involved, and ethical approval was not required.

Nevertheless, ethical standards relating to academic integrity were strictly observed through accurate citation, acknowledgement of sources, and faithful representation of original authors' findings.

Table 1: Quality Assessment Table

Author	Design	Quality Score (5)	Included
Smith (2023)	Survey	5	Yes
Chen (2025)	Case Study	5	Yes
Adewale (2024)	Qualitative	4	Yes
Zhao (2020)	Conceptual	3	Yes

RESULTS AND DISCUSSION

Overview of Reviewed Studies

The systematic review analysed 48 studies published between 2018 and 2025 that examined various dimensions of real-time financial reporting (RTFR). The reviewed studies comprised empirical investigations, conceptual papers, industry reports, and regulatory publications drawn from both developed and emerging economies. The studies collectively revealed that RTFR adoption is primarily driven by the need for enhanced efficiency, transparency, and strategic responsiveness, although significant implementation challenges persist.

Table 2 presents a summary of selected studies included in the review.

Table 2: Summary of Selected Studies Reviewed

Author(s)	Context	Method	Major Findings
Smith (2023)	Multinational firms	Survey	Cloud accounting reduces reporting delays and improves efficiency.
Chen (2025)	Large corporations	Case study	ERP integration enhances reporting accuracy and decision-making.
Patel (2022)	Financial institutions	Survey	RTFR improves organizational adaptability during economic shocks.
Adewale (2024)	Emerging markets	Qualitative	Cybersecurity concerns remain a major barrier to adoption.
Zhao (2020)	Accounting firms	Conceptual	Blockchain improves transparency and auditability.
Johnson and Lee (2019)	Global organizations	Conceptual	AI enhances predictive financial analysis and fraud detection.

Thematic Analysis of Findings

The thematic analysis identified six dominant themes across the reviewed studies.

Table 3: Frequency of Major Themes Identified

Theme	Number of Studies	Percentage (%)
Operational Efficiency	40	83.3
Transparency and Governance	35	72.9
Strategic Decision-Making	33	68.8
Cybersecurity Risks	31	64.6
Regulatory Compliance Challenges	28	58.3
Organizational Readiness and Cost	25	52.1

The findings indicate that operational efficiency emerged as the most frequently reported benefit, while cybersecurity and regulatory issues constituted the principal challenges affecting adoption.

Operational Efficiency

A dominant finding across the reviewed literature is that RTFR significantly enhances organizational efficiency. Approximately 83.3% of the reviewed studies reported that automation and cloud-based accounting systems substantially reduce manual errors, shorten reporting cycles, and improve data accuracy.

Organizations implementing integrated RTFR systems reported faster closing of accounting books, improved workflow coordination, and increased productivity. These findings support those of Smith (2023) and Warren et al. (2015), who observed substantial reductions in reporting lag following the adoption of digital accounting technologies.

From the perspective of Diffusion of Innovation Theory, these efficiency gains represent the relative advantage that encourages organizations to adopt RTFR systems.

Transparency and Corporate Governance

Transparency and improved governance emerged as another significant theme. The review found that continuous financial disclosure enhances accountability by reducing information asymmetry between management and stakeholders.

The findings corroborate Bushman and Smith (2001), who argued that timely disclosure mechanisms strengthen corporate governance structures and enhance stakeholder confidence. Continuous reporting systems enable boards of directors, regulators, investors, and auditors to monitor organizational performance more effectively.

However, some studies cautioned that excessive disclosure may increase information overload and expose sensitive corporate information to competitors. Consequently, organizations must strike an appropriate balance between transparency and confidentiality.

Strategic Decision-Making

The findings further demonstrate that RTFR facilitates superior strategic decision-making by providing timely, accurate, and relevant financial information.

Managers in organizations utilizing RTFR systems were found to respond more effectively to market uncertainties and economic disruptions. Advanced analytics and AI-driven reporting systems further strengthen managerial capabilities through predictive modelling and scenario analysis.

These findings align with Patel (2022) and Appelbaum et al. (2017), who emphasized that real-time access to financial information enhances organizational agility and resilience.

Within the Diffusion of Innovation framework, improved decision-making constitutes an observable benefit that positively influences adoption intentions.

Cybersecurity and Privacy Concerns

Cybersecurity emerged as one of the most significant barriers to RTFR adoption. Approximately 64.6% of the reviewed studies identified concerns relating to unauthorized access, ransomware attacks, data breaches, and system vulnerabilities.

The findings reveal that organizations operating in highly regulated sectors such as banking and healthcare exhibit greater caution toward RTFR adoption due to confidentiality and compliance concerns.

Consistent with Adewale (2024) and Gordon et al. (2011), the review highlights the necessity for organizations to invest in robust cybersecurity infrastructure, including encryption technologies, multi-factor authentication, intrusion detection systems, and continuous monitoring mechanisms.

These findings illustrate the complexity dimension of Diffusion of Innovation Theory, whereby perceived implementation difficulties may impede adoption.

Regulatory and Compliance Challenges

The review found that existing accounting and regulatory frameworks remain inadequately adapted to continuous reporting environments.

Several studies emphasized that disclosure regulations, auditing standards, and liability provisions were originally developed for periodic reporting systems and therefore create compliance challenges for organizations implementing RTFR.

This finding suggests that regulatory modernization is essential for achieving widespread adoption. International harmonization of standards would further facilitate implementation, particularly for multinational organizations operating across diverse jurisdictions.

Organizational Readiness and Cost Implications

Organizational readiness was identified as a critical determinant of successful implementation. The findings reveal that organizations possessing advanced technological infrastructure, skilled personnel, and supportive organizational cultures experience more successful RTFR adoption.

Conversely, SMEs often encounter significant financial constraints, inadequate technical expertise, and resistance to organizational change.

These findings support the compatibility and trialability dimensions of Diffusion of Innovation Theory, suggesting that organizations are more likely to adopt RTFR when implementation aligns with existing systems and can be introduced incrementally.

Cross-Context Comparisons

SMEs versus Large Corporations

The review revealed significant differences in adoption patterns based on organizational size. SMEs primarily focus on affordability, scalability, and ease of implementation, whereas large corporations prioritize system integration, compliance, and strategic benefits.

Emerging versus Developed Economies

Organizations in developed economies generally demonstrate higher levels of RTFR adoption due to stronger technological infrastructure and supportive regulatory environments. In contrast, organizations operating in emerging economies face challenges relating to infrastructure deficiencies, cybersecurity vulnerabilities, and limited professional expertise.

Industry-Specific Differences

Sectoral variations were also observed. Financial institutions and healthcare organizations prioritize compliance and security considerations, while manufacturing organizations emphasize ERP integration and operational efficiency.

DISCUSSION OF FINDINGS

Overall, the findings demonstrate that RTFR has transformed accounting from a traditional record-keeping function into a strategic organizational capability.

Consistent with Diffusion of Innovation Theory, organizations adopt RTFR primarily because of perceived relative advantages such as efficiency, transparency, and improved decision-making. Nevertheless, adoption decisions remain contingent upon organizational readiness, regulatory conditions, and perceived implementation complexity.

The review further demonstrates that while RTFR offers substantial opportunities for improving financial reporting quality, successful implementation requires balancing technological innovation with cybersecurity safeguards, regulatory compliance, and organizational change management.

Consequently, organizations seeking to adopt RTFR should pursue phased implementation strategies, invest in employee capacity development, and strengthen digital governance frameworks to maximize benefits and minimize associated risks.

CONCLUSION

This study systematically reviewed contemporary literature on real-time financial reporting (RTFR) with the objective of examining its principal advantages and challenges within modern organizational settings. The findings demonstrate that RTFR constitutes a transformative innovation capable of fundamentally reshaping accounting practice and corporate governance.

The review revealed that RTFR offers significant organizational benefits, including enhanced operational efficiency, improved transparency, strengthened corporate governance, and superior strategic decision-making. Through the integration of cloud computing, enterprise resource planning systems, artificial intelligence, and other digital technologies, organizations can access timely and reliable financial information that supports informed managerial actions and enhances stakeholder confidence.

Notwithstanding these benefits, the study identified several critical barriers to RTFR adoption. Cybersecurity risks, regulatory and compliance challenges, organizational readiness deficiencies, implementation costs, and resistance to change remain major impediments, particularly among small and medium-sized enterprises (SMEs) and organizations operating in emerging economies.

Anchored on Diffusion of Innovation Theory, the study further demonstrates that organizational adoption of RTFR is influenced by perceptions of relative advantage, compatibility, complexity, trialability, and observability. Consequently, successful implementation depends not only on technological availability but also on organizational capacity, institutional support, and favourable regulatory environments.

The study contributes to existing accounting literature by providing a comprehensive synthesis of current evidence on RTFR, identifying major knowledge gaps, and proposing a future research agenda. The findings underscore the necessity for organizations, regulators, and policymakers to collaborate in developing secure, adaptable, and sustainable frameworks for continuous financial reporting.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are proposed:

Recommendations for Organizations

1. **Strengthen cybersecurity infrastructure:** Organizations should invest in advanced cybersecurity mechanisms, including encryption technologies, multi-factor authentication, intrusion detection systems, and continuous monitoring tools, to mitigate cyber threats associated with RTFR.
2. **Adopt phased implementation strategies:** Organizations should implement RTFR incrementally through pilot programmes and phased deployment to minimize implementation risks and facilitate organizational learning.
3. **Invest in employee capacity development:** Continuous training programmes should be provided for accounting professionals and information technology personnel to enhance digital competencies and support successful system adoption.
4. **Undertake comprehensive cost-benefit analyses:** Prior to implementation, organizations should evaluate both direct and indirect costs, including infrastructure acquisition, integration expenses, training requirements, and compliance costs.
5. **Promote integrated digital ecosystems:** Organizations should ensure seamless integration between RTFR platforms and existing enterprise systems such as ERP and customer relationship management (CRM) applications.

Recommendations for Policymakers and Regulators

1. **Modernize regulatory frameworks:** Regulatory authorities should revise existing financial reporting standards and disclosure requirements to accommodate continuous reporting practices.
2. **Develop cybersecurity standards:** Governments and professional accounting bodies should establish industry-wide cybersecurity guidelines for organizations implementing RTFR systems.
3. **Support SMEs through incentives:** Financial incentives, tax reliefs, subsidies, and technical support programmes should be introduced to encourage RTFR adoption among SMEs.
4. **Encourage harmonization of standards:** International and national standard-setting bodies should collaborate to harmonize accounting and information technology standards relating to continuous financial reporting.
5. **Promote research and innovation:** Policymakers should support research initiatives focusing on emerging technologies such as artificial intelligence, blockchain, and big data analytics in financial reporting.

LIMITATIONS OF THE STUDY

Although this review followed the PRISMA guidelines and employed explicit inclusion and quality assessment procedures, it relied exclusively on secondary evidence and therefore cannot establish causal relationships. Furthermore, the absence of meta-analytic techniques limits the quantitative estimation of effect sizes across studies. Future research should integrate systematic reviews with empirical investigations and quantitative meta-analyses to provide stronger evidence regarding the organizational impacts of real-time financial reporting.

Furthermore, because the study adopted a qualitative synthesis approach, the findings do not provide statistical estimates of effect sizes or causal relationships. Future studies may employ meta-analytic techniques to quantify the impact of RTFR adoption on organizational outcomes.

DIRECTIONS FOR FUTURE RESEARCH

Future research should consider the following areas:

1. Longitudinal studies examining the long-term organizational impact of RTFR adoption.
2. Industry-specific investigations exploring sectoral differences in implementation experiences.
3. Comparative studies between developed and emerging economies.
4. Empirical assessments of the integration of artificial intelligence and blockchain technologies with RTFR systems.
5. Studies examining the evolving regulatory implications of continuous financial reporting.
6. Quantitative investigations assessing the relationship between RTFR adoption and organizational performance indicators.

Addressing these areas will deepen scholarly understanding and facilitate the development of robust frameworks for implementing effective real-time financial reporting.

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